Editors
Serhat Madsar & Hülya Anakız Ertürk

ARTIFICIAL INTELLIGENCE IN COMMUNICATION STUDIES



YAYINLARI

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-Elif Şeşen -Şeyhmus Doğan -Duygu Ünalan -Hülya Anakız Ertürk -Serhat Madsar
-Esra Akarsu -Nur Gözde Tayfur –Fatmagül Safalı

PALET YAYINLARI ®
YAYIN NUMARASI: 1055

T.C. KÜLTÜR ve TURİZM BAKANLIĞI SERTİFİKA NO: 44040
ISBN: 978-625-8882-17-9

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Ekim 2026

www.paletyayinlari.com
bilgi@paletyayinlari.com
Mimar Muzaffer Mah. Rampalı Çarşı No: 42 Meram / Konya
Tel: (0332) 353 62 27

Tasarım: Palet Grafik

Baskı: Sebat Ofset
Fevzi Çakmak Mah. Hacı Bayram Cad. No: 57 Karatay / Konya
Sertifika Numarası: 74481

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Editors' Preface

As an interdisciplinary field, communication provides a foundation for new theoretical perspectives and discussions by engaging with current concepts, areas of study, and technological advancements. Beyond being a social discipline, communication is evolving in tandem with technological advancements. In particular, artificial intelligence technologies are not viewed merely as a technological advancement but are regarded as a field that facilitates the restructuring of society and everyday life. The widespread use of artificial intelligence technologies in everyday and social life necessitates a new field of research and an interdisciplinary approach.

With the advent of artificial intelligence technologies, new topics and theoretical debates are emerging in the field of communication. Artificial intelligence technologies offer new areas of application, particularly in subfields such as public relations, advertising, journalism, political communication, and media. It is important to highlight the contributions that the integration of artificial intelligence applications into communication processes brings to the field and to examine how they are transforming communication practices. In this vein, this book examines artificial intelligence technologies in relation to fields such as the cultural industry, media anthropology, public relations, political communication, advertising, science communication, and human-machine communication. Thus, the relationship between communication and artificial intelligence is explored from an interdisciplinary perspective.

In her study titled "Artificial Intelligence in the Context of Media Anthropology," Prof. Dr. Elif Şeşen examined the key concepts characteristic of artificial intelligence technologies by addressing the importance of technologies in the history of communication. The author, who examines concepts such as accessibility, privacy, fidelity, volume, velocity, range, persistence, and searchability in depth, evaluates these concepts within the context of media culture and anthropology.

In their paper titled "The New Era of Digital Public Relations: Artificial Intelligence," Fatmagül SAFALI and Assoc. Prof. Dr. Şeyhmus DOĞAN examined digital public relations practices in the age of artificial intelligence. Noting that technological tools and public relations practices are closely interrelated, the authors have examined how artificial intelligence technologies contribute to public relations practices. In this context, they evaluated

the functions of artificial intelligence technologies in the areas of digital corporate identity, digital image management, digital reputation management, digital corporate social responsibility, and digital crisis management.

In her study titled "Is Artificial Intelligence a New Culture Industry," Assoc. Prof. Dr. Duygu Ünalan goes beyond a purely technical approach to artificial intelligence technologies and offers an assessment within the context of the economy, ownership structures, and power relations. Drawing on the concept of the culture industry, the author examines the relationship between digital capitalism and the algorithmic culture industry in the context of artificial intelligence. The author discusses cultural production processes within a capitalist framework by evaluating the functions of generative AI tools.

In her paper titled "A Theoretical Exploration of Human–Machine Communication," Assistant Professor Hülya Anakız Ertürk examines the conceptual and theoretical foundations of human–machine communication. The study focuses on how machines have evolved from being merely technological tools that facilitate communication to becoming communicative agents in their own right. How people perceive machines, why they respond to them socially, and why they attribute human characteristics to non-human entities are discussed within the framework of theoretical approaches such as the CASA paradigm, the Media Equation, and anthropomorphism. However, the study demonstrates that human–machine communication is not merely a technical interaction; rather, it is a multifaceted and dynamic process with social, cognitive, and communicative dimensions.

Assistant Professor Serhat Madsar focuses on the relationship between artificial intelligence and political communication in his study titled "Political Communication and Artificial Intelligence: Democracy, Manipulation, and Micro-Targeting." The author, who examines the impact of artificial intelligence on political communication processes in the context of democracy, manipulation, and micro-targeting, explores the multidimensional relationship between artificial intelligence and political communication. According to the study, artificial intelligence serves positive functions in political communication, such as identifying target audiences and creating content. However, artificial intelligence technologies can cause social polarization by manipulating information and thus have the potential to undermine democratic processes.

In her paper titled "The Transformation of Advertising in the Age of Artificial Intelligence," Assistant Professor Nur Gözde Tayfur examines how advertising practices are being transformed by artificial intelligence. The author, who examines how generative AI tools are used in advertising, explains how brands benefit from these technological tools through specific examples. Furthermore, ethical debates surrounding the relationship between AI and advertising are examined through concepts such as reliability and transparency, thereby addressing this relationship from a broad perspective.

In her paper titled "Science Communication in the Age of Artificial Intelligence: Acting, Media, and Politics," Dr. Esra Akarsu examines the relationship between artificial intelligence and science communication in the context of actors, media, and politics. The author, who views artificial intelligence tools as a new actor in science communication, examines the transformations brought about by advancements in AI technologies that directly impact science. Artificial intelligence is addressed not merely as a new technology, but as an influential actor in the media ecosystem and science communication.

Serhat Madsar & Hülya Anakız Ertürk

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ARTIFICIAL INTELLIGENCE IN THE CONTEXT OF MEDIA ANTHROPOLOGY

Elif ŞEŞEN*

Introduction

The history of communication is fundamentally linked to the emergence of new tools. Each new medium has built upon its predecessors without eliminating them. While writing liberated communication from the necessity of face-to-face interaction, the printing press enabled the mass reproduction of communicative content. Subsequent communication technologies—such as the telegraph, radio, television, and the Internet—have continuously accelerated the speed of communication. In his book *A History of Communications* (2015), which examines communication history through this lens of continuity, Marshall T. Poe explains eras of change of humanity throughout civilization based on shifts in the dominant medium of communication, identifying five primary media: speech, manuscripts, print, audiovisual media, and the Internet. Today, it is possible to add artificial intelligence to this list. Each medium of communication has fostered a new culture, driving a transition from the the speaking/storytelling human (homo loquens) to the dreaming human (homo somnians). With artificial intelligence, these dreams have become more realistic—or, to use Baudrillard's term, "more real than real." Artificial intelligence systems are not merely tools that accelerate or facilitate communication between users; they can directly generate communicative content, such as text, images, audio, and video, as well as transform existing content and summarize, classify, and reorganize vast amounts of information. Unlike earlier communication technologies, artificial intelligence plays an active role not only in the transmission of communicative content but also in its creation.

Culture is a crucial factor in the adoption of new communication tools, given that individuals share information, derive meaning through feedback, and influence one another. This is because technological systems are socially produced, and social production is shaped by culture. All spheres of social life are being reconstructed within the new communication environment that Castells (2001) termed the "Internet Galaxy." Anthropology is a social

* Prof. Dr., Niğde Ömer Halisdemir University, Faculty of Communication, Department of Public Relations and Advertising, elifsesen @ohu.edu.tr, ORCID ID: 0000-0002-8513-9647

science fundamentally dedicated to the study of culture, while media anthropology examines how culture shapes society through mass communication tools. In a sense, human history is also the history of culture as a way of life. Throughout this process, communication tools or media technologies have functioned as historical systems that transform the relationships people form with culture and messages. This is because the new communication networks and patterns emerging from media technologies influence social practices and values, and consequently, culture itself. In this regard, Poe's approach which situates the emergence of media technologies within the broader context of culture and historical conditions, offers a useful framework for understanding the place of artificial intelligence in the history of communication. The emergence of artificial intelligence cannot be viewed merely as the result of technical progress; factors such as the big data economy, cloud computing, advancements in processor technologies, the proliferation of digital platforms, and society's ever-increasing generation of digital data can all be considered historical conditions that have enabled the widespread adoption of artificial intelligence. From the perspective of media anthropology, the societal impacts of artificial intelligence must be evaluated not only in terms of the technology's technical capabilities but also in light of the economic, cultural, and institutional conditions under which it is utilized.

1. Artificial Intelligence

Artificial intelligence (AI) is an interdisciplinary field of technology that aims to perform functions associated with human cognitive abilities such as learning, problem-solving, reasoning, perception, decision-making, and language use through computer systems. The development of AI has been shaped by the cumulative efforts of various disciplines, including computer science, mathematics, statistics, cognitive science, and engineering. While early systems primarily operated based on specific rules and symbolic operations, machine learning and deep learning-based systems which are capable of learning patterns from large datasets and executing complex tasks have become widespread today.

The increase in data volume, the expansion of computational capacity, and the widespread adoption of high-performance hardware such as graphics processing units, have played a significant role in accelerating the development of artificial intelligence technologies. Furthermore, advancements in machine learning, deep learning, and artificial neural networks have enabled AI systems to achieve higher performance across various tasks.

In particular, the ability of models trained on large datasets to identify complex patterns has facilitated a shift from AI applications limited to specific, predefined tasks toward a much broader scope of application (Şeşen & Şeşen, 2026).

In recent years, the development of generative artificial intelligence systems has further expanded the scope of AI applications. Generative AI enables the creation of content—such as text, images, audio, and video—based on user-provided inputs. Beyond content production processes in media and communication, these systems are utilized in diverse fields including education, advertising, journalism, design, and entertainment. Consequently, AI is evolving from a technology that merely analyzes or classifies data into a system that directly participates in the processes of content and information creation (Andersdotter, 2023).

The advancement of AI is also transforming how information is accessed and processed. Through AI systems, users can request information using natural language systems, generate content on various topics, and engage in new forms of interaction based on the resulting outputs. However, the accuracy and reliability of AI-generated information necessitate that user employ these technologies critically and consciously. Deficiencies, biases, or errors present in the data used to train AI systems can be reflected in the outputs they produce. Therefore, when interacting with AI, it is crucial not only to receive the information provided by the technology but also to evaluate that information and, when necessary, verify it through alternative sources.

The proliferation of artificial intelligence technologies has necessitated a re-evaluation of the relationship between humans and machines. While interaction between the user and technology in traditional computer systems typically relies on predefined commands and interfaces, generative AI systems offer the possibility of more flexible interaction through natural language. The processes of users asking questions, evaluating system-generated responses, and sustaining interaction through new inputs highlight the communicative dimension of human-machine interaction. Consequently, artificial intelligence should be viewed not merely as a technical tool, but as a digital system with which we interact in our daily lives.

The societal impacts of artificial intelligence should be assessed beyond the technolog's technical capabilities. AI systems can influence how individuals work, access information, consume media, and communicate. There-

fore, the development of artificial intelligence should be considered in conjunction with social and cultural transformations. Particularly in the fields of communication and media, the role of AI in content creation, content recommendations, the analysis of user behavior, and the circulation of information is expanding the scope of communication studies (Dwivedi & Al-Banna, 2025).

The cultural dimension of artificial intelligence technologies is another issue that worth for paying attention. Since AI models are trained using large datasets, societal and cultural patterns embedded in that data can resurface in the outputs of the systems. Representations concerning gender, ethnic identity, cultural differences, class, and language necessitate a critical examination of AI's role in cultural production processes. In this context, it is crucial to view AI systems not merely as neutral technologies, but as socio-technical structures produced and utilized within a societal framework.

The proliferation of artificial intelligence brings various ethical issues to the fore. Key among these issues are personal data protection, privacy, surveillance, algorithmic bias, data security, content accuracy, and accountability. In particular, the processing of vast amounts of user data raises questions regarding the protection of individual privacy. Furthermore, the role of algorithmic systems in ranking, recommending, and making content visible can significantly influence access to information and the flow of information. Therefore, it is crucial to consider principles such as transparency, accountability, and human oversight during the development and deployment of artificial intelligence systems. In this context, assessments regarding the future of artificial intelligence cannot rely solely on technological advancements. It is also necessary to examine questions such as the purposes for which artificial intelligence is developed, the data used to train it, the societal needs it addresses, and how it is utilized in daily life. Particularly from the perspective of communication studies, artificial intelligence should not be viewed merely as a technology limited to the automation of media production; rather, it should be approached as a multidimensional communication technology that impacts information production, cultural representation, human-machine interaction, and social relations. Consequently, artificial intelligence constitutes a multidimensional socio-technical structure that must be understood not only as a product of technological progress but also as a significant component of transformations occurring across various spheres of social and cultural life. The increasing prevalence of artificial in-

telligence systems paves the way for the emergence of new forms of interaction across a wide spectrum ranging from how individuals access, evaluate, and produce information to interpersonal communication processes, and from working life to everyday practices. While this process leads to a redefinition of the relationship between humans and technology, it also brings to the fore significant debates regarding the human role in knowledge production, trust in technological systems, and the limits of responsibility assigned to artificial intelligence in decision-making processes. Moreover, the societal impacts of artificial intelligence cannot be evaluated independently of the technology's technical capabilities. The development, deployment, and integration of artificial intelligence systems into various spheres of daily life are shaped by economic structures, cultural values, social norms, legal regulations, and ethical principles. Therefore, there is a need to view artificial intelligence not merely as a technology capable of performing specific tasks in a human-like manner, but as a structure that reshapes the mutual interactions among humans, technology, and society.

2. Media Anthropology

It is possible to state that as a scientific discipline the intersection of communication with other fields is vast, given that there is no human activity devoid of communication. In this regard, mediated communication—that is, the media—also maintains close ties with numerous fields; anthropology is one of them. However, according to Spitulnik (1993: 294), despite growing interest, an anthropology of mass media does not yet exist; the two fields appear to have engaged with one another only to a limited extent.

According to Nair and Sharma (2015), who define media anthropology as the application of anthropological research methods and techniques to the study of mass media, media anthropology is inherently an interdisciplinary field. It serves as a meeting point for anthropologists examining the impact of media on human life and society, and the discipline of media studies, which draws upon or finds inspiration in anthropological concepts (Othold & Voss, 2015).

Media anthropology draws upon both the anthropology of modern societies and the cultural turn within media studies. Media constitutes a cultural system grounded in the social construction of reality (Coman & Rothenbuhler, 2005). The cultural forms traditionally studied by anthropologists likewise generate systems of symbolic thought and the expression of reality.

In this respect, media anthropology bridges the gap between symbolic structures in everyday life and the construction of reality through media. Every piece of media content presents a conception of the world composed of systems of meaning, relationships, and interactions. The fundamental aim of media anthropology is to make sense of this world from an anthropological perspective and to broaden and deepen our understanding of the interactions people establish with technology and media (Postill, 2009). According to Hansen (2000), who views technology as a fundamental component of human embodiment and existence, technology is the very point of contact between humanity and the world. Technology and, by extension, media has been an integral part of life and human experience from the very beginning.

Spitulnik (1993: 293) treats mass media as cultural artifacts, experiences, practices, and processes. This approach emphasizes the link between media and developments in science and technology. Building on this premise, the study of media since the 1980s has encompassed institutions, communication practices, cultural products, social activities, aesthetic forms, and historical developments—a shift that has brought media and anthropology together.

Scholars who examine the relationship between mass media and culture, as well as the transmission of social or cultural messages via media, include anthropologists such as Landers, Turner, Augé, and Handelman, alongside communication scholars like Dayan, Katz, and Rothenbuhler. In their research—covering topics such as reception ethnography, news production dynamics, new technologies, and changing family relationships—they have focused on the evolution and development of mass media and their impact on culture.

Schudson (1989), in his attempt to understand how culture operates, focuses on the direct impact of cultural objects such as television, advertisements, news, films, music, and rituals. For him, the central issue is whether symbols or messages across various media actually alter people's perceptions or actions. Media Technologies particularly network systems have shaped the ways in which people acquire information. Modern media technologies facilitate communication. Today, regardless of their location, people are never entirely cut off from or deprived of communication and media technologies. Smartphones and tablets offer numerous conveniences regarding both portability and communication. Thanks to digital archives and social networks, people have access to a virtually infinite source of information.

The development of media technologies is directly correlated with transportation; the wider the audience a piece of information reaches, the greater its impact. The fact that mass communication technologies have evolved from a mere need into an absolute necessity has led the audience—formerly defined by traditional media—to adopt new usage habits and lead lives that are virtually dependent on new media devices. The more a media technology conveys a sense of reality to its audience, the more widespread it becomes. Hayles (1999: 3) embraces the possibilities offered by modern information technologies and sets out to rethink the nature of the articulation between humans and (intelligent) machines. The post-human exists both physically and mentally, in a world that is far more complex and unpredictable than before, deeply intertwined with intelligent machines.

The evolution of mass media technologies has inevitably transformed the world into which they emerged—driven by an internal, consistent logic—much like how the invention of the printing press necessitated the Enlightenment, the telegraph drove the Industrial Revolution, and the internet ushered in the "information age" (Freeman, 2002: 752). Heilbroner (1995) highlights the profound impact of the Internet in defining and altering the nature of the existing socioeconomic order. The Internet has transformed society, while simultaneously undergoing its own evolution in the process; it has shifted from being merely a tool to becoming a widely utilized cultural element. Digital technologies individualize communication and enable the establishment of closer relationships with users. By organizing sensory skills—in a process Parikka (2017: 36) terms "haptic perception"—these technologies can render the user base's relationship with the medium more personal. With the transition to the digital age, mass media have radically altered how people work, how they perceive themselves, and how they interact with one another; artificial intelligence appears to be no exception to this trend. Media anthropology provides a historical context and approach for understanding the ways in which people use media technologies and ascribe meaning to them.

3. Key Characteristics of Artificial Intelligence

Although Poe (2015) is not typically classified as a media anthropologist, he highlights the relationship between communication technologies and culture, evaluating communication media based on eight fundamental characteristics. These characteristics are:

1. Accessibility: The cost of acquiring and using a communication medium
2. Privacy: The degree of privacy for users and messages within a communication medium
3. Fidelity: The degree to which data is encoded and transmitted faithfully in a communication medium
4. Volume: The data-carrying capacity of a communication medium
5. Velocity: The speed at which a communication medium transmits data
6. Range: The distance over which a communication medium transmits data
7. Persistence: The duration for which data is stored in a communication medium
8. Searchability: The speed and cost of locating data within a communication medium

Tracing the path Poe (2015) outlines regarding the evolution of mass media can offer valuable insights for understanding artificial intelligence.

3.1. Accessibility

Accessibility, one of the key characteristics Poe identifies regarding media technologies, establishes a link between the proliferation of communication technologies and the costs associated with their societal use. It can be said that communication tools are far more accessible and affordable today than in the past. Artificial intelligence is driving a significant transformation in this regard. In particular, the ability to use generative AI systems via natural language has opened up communicative production activities—which previously required a high level of expertise—to broad user groups. Tasks such as copywriting, translation, image generation, text summarization, and content editing can now be performed by users with limited technical expertise.

The ease of content production can also lead to an overwhelming volume of content within the information landscape. While content production in traditional media economies was constrained by time, expertise, and financial resources, generative AI eliminates some of these limitations. Consequently, in the age of AI, the fundamental media challenge shifts from a scarcity of content to an overabundance of it. However, the fact that anyone can produce content and the resulting increase in accessibility does not automatically translate into communicative empowerment. The fact that AI is

accessible to the user does not mean the technology is democratized at the infrastructural level. Developing and operating large AI models requires immense computational power, data, and financial resources. Thus, user access to AI does not entail control over the production and management of the underlying AI infrastructure. In this respect, it differs little from earlier communication technologies.

3.2. Privacy

Digital technologies, which offer far greater anonymity than in the past, have also altered perspectives on privacy. Privacy is particularly significant in the context of artificial intelligence, as communication between the user and the system often takes the form of a one-on-one, personal exchange. In modern society, interpersonal relationships and interactions have diminished, with media taking the place of disrupted communication. People now communicate with media rather than with one another; yet, the relationship established with media is more personal and insular (Ellul, 2010). When interacting with an AI system, a user may perceive the communication as more private precisely because there is no human counterpart present. However, this interaction is technically linked to processes of data processing, storage, and analysis. Unlike traditional mediums, information provided by the user is not merely transmitted; it is also processed by the system and utilized to generate a response. Consequently, in the age of artificial intelligence, the issue of privacy extends beyond the question of who views the content to encompass which systems analyze that content and for what purpose.

3.3. Fidelity

Fidelity, a key concept in Poe's media analysis, concerns the similarity and accuracy of representation between the source and the receiver regarding the content transmitted during the communication process. Poe (2015: 340) defines the Internet as simultaneously functioning as a telephone, a post office, a library, and a television. This applies to artificial intelligence as well. However, artificial intelligence does not merely represent existing reality; it can generate new content that bears a striking resemblance to reality. For instance, generative AI can create a face resembling a real person, an image depicting a seemingly actual event, or text that mimics a specific individual's writing style. Yet, the fact that an image appears real is no longer proof that it represents an actual event. When a person's image, voice, or writing style can be imitated with high fidelity, that person's communicative

identity can be reproduced by another system. Artificial intelligence generates representations capable of speaking, writing, or appearing on a person's behalf, even when that individual is not physically present. Consequently, in the age of artificial intelligence, the fundamental issue is not merely the degree of realism in media; the core problem is the potential severance of the relationship between the real and reality.

3.4. Volume

Digital technologies have vastly increased the volume of transmitted data. With the advent of the Internet, a massive heap of information is in constant flow and circulation. Artificial intelligence is transforming the nature of this volüme not only in terms of data transmission but also regarding data generation. In traditional media systems, content creation is largely constrained by human labor; a journalist writing a news story, an academic preparing an article, a designer creating visuals, or a director producing a video all require time and expertise. When generative AI automates certain segments of these production processes, content creation capacity increases dramatically. Consequently, the fundamental challenge within the media system shifts from a scarcity of content to an abundance of it. However, an abundance of content is not synonymous with an abundance of information. More content does not equate to more information; on the contrary, the production of vast amounts of content can make the issues of verification and selection even more critical.

3.5. Velocity

Digital technologies are tools for high-speed communication; this means messages can travel very rapidly within communication networks. The Internet marked a significant turning point regarding speed, transforming how people work, consume, interact, and acquire information. Artificial intelligence, meanwhile, elevates the speed of communication to a different level. While the Internet increased the speed at which communication circulates, artificial intelligence accelerates the speed of communicative production. Tasks such as generating, summarizing, rewriting, or translating a text or creating an image can be accomplished in mere seconds. Consequently, it is not only the distribution phase of the communication cycle that accelerates, but the production phase as well. However, rapid production brings with it issues concerning the quality of communication, as it can curtail the time required for reflection that is essential for understanding and interpreting content. As Byung-Chul Han (2017) observes, truth does not emerge from

an abundance of information; what is missing here is direction—that is, meaning. Masses of images and text cause perception to become detached from reality, leading individuals to lose the ability to interpret facts accurately.

3.6. Range

As a network spanning and interconnecting the entire world, the Internet has significantly eroded the geographical boundaries of communication and enabled the emergence of global communication networks. Artificial intelligence holds the potential to expand the internet's global reach not only geographically but also linguistically and culturally. However, the fact that a message can technically be sent anywhere in the world does not mean it conveys the same meaning or is equally accessible everywhere. In other words, the global nature of technology does not imply cultural equality. The overrepresentation of certain languages and cultures compared to others in the training data of artificial intelligence models can perpetuate cultural inequalities. Thus, while the physical reach of artificial intelligence is symmetrical and global, its cultural reach is asymmetrical.

3.7. Persistence

With the proliferation of early personal computers (PC) in the 1990s, computer technologies entered the home environment, and data recording and storage devices evolved to adapt to this shift. While traditional media offers a fleeting memory, digital media is far more permanent. People have increasingly transformed media technologies from object-based preservation to structures oriented toward process- and time-based preservation (Parikka, 2017: 151). The transition from analog to digital storage methods has enabled, for instance, social media users to chronologically arrange their personal music and image archives based on the date they were recorded. Digital media has made it possible to store vast amounts of information for extended periods. In the online environment, content can be both stored for the long term and easily retrieved. Artificial intelligence adds the capability of processing and reproducing stored data to this process; in other words, it eliminates the boundary between recording and production. Artificial intelligence enables not only the storage of data but also its algorithmic reinterpretation. An archive preserves the past, while a search engine locates it. Artificial intelligence, however, can generate new discourse at both personal and societal levels based on the past. This is because algorithms are selective; they decide which content is remembered, which is forgotten, and

which is reproduced. Yet, the criteria used to make these decisions are often neither transparent nor comprehensible to humans.

3.8. Searchability

As one of the key characteristics of media technologies identified by Poe, searchability refers to the ease of accessing and retrieving stored information. As data storage has become easier and faster, the volume of data has grown, making the task of locating specific items within vast datasets both a critical need and a significant challenge. The Internet and search engines have drastically reduced the cost of accessing information. However, traditional search systems typically present users with a list of results, leaving them to examine and evaluate the findings themselves. Artificial intelligence is transforming this model; users now receive synthesized answers rather than merely a list of search results. While increased searchability makes finding information easier, the ease of discovery often comes at the cost of reduced privacy. Although digital media had already created this tension, artificial intelligence takes the dynamic a step further. This is because AI does not simply locate data; it can combine disparate pieces of information and derive meaning from them. In other words, it goes beyond merely accessing existing information to synthesize data fragments from various platforms, thereby creating profiles of individuals. By aggregating fragmented pieces of information—even those not originally provided for this purpose—it is possible to construct a highly detailed and sensitive profile of an individual.

Figure 1. Transformation Brought by AI

Quality	Transformation	Effect
Accessibility	Reduction in usage costs and simplification of content creation	Tension between accessibility and democratization
Privacy	Increased interpersonal interaction and individual data processing capacity	Tension between privacy and surveillance
Fidelity	Enhanced capacity to represent reality	Tension between reality and simulation
Volume	Facilitation of large-scale content creation	Tension between the quantity and quality of content
Velocity	Acceleration of real-time content creation and circulation	Tension between information and truth

Range	Overcoming geographical and linguistic barriers through global communication	Tension between globalization and local cultural identities
Persistence	Long-term storage of vast amounts of data	Tension between long-term digital memory and short-term human memory
Searchability	Easier retrieval of desired data	Tension between algorithmic selection and the right to personal decision-making

4. Conclusion and Evaluation

Poe's (2010) approach, which extends from speech to writing, from the printing press to audiovisual media and the Internet, makes it possible to understand communication technologies in historical continuity. Evaluating the effects of different communication technologies on individuals, societies and cultures from a long-term perspective is also an important issue within media anthropology. Artificial intelligence can be considered not as a completely new phenomenon that stands outside the history of communication, but as a communication technology that intensifies the features of previous media technologies and adds new functions to them. In this respect, looking at the issue from a historical framework enables a broader and deeper understanding.

Speech made message production possible, the writing made the message permanent. The printing press reproduced the message. Electronic media has increased the range and representation capacity of the message. The Internet has transformed the speed and reach of messaging. On top of all these features, artificial intelligence has also made algorithmic message generation easier even for users. Therefore, artificial intelligence points to a technological stage in the history of communication that transforms not only the way the message is carried, but also the way the message is created. Therefore, the real importance of artificial intelligence for the history of communication is not just that it is faster or more accessible than previous media technologies. The main feature that differentiates artificial intelligence is that it makes the production of communicative content a part of communication technology itself.

Accessibility increases participation in production, yet infrastructural monopolization can become invisible. Volume expands the scale of produc-

tion, but verification becomes more difficult as volume grows. Speed accelerates production and circulation, yet it may reduce the time available for reflection. Persistence ensures the long-term storage of produced content, but the opportunity for individuals to forget or delete information may diminish. Searchability facilitates access to content, yet it can undermine privacy. It is insufficient to evaluate the communicative capacity of artificial intelligence solely based on the volume, speed, and reach of its communication. The fundamental question is how these attributes combine to create a new communication ecology.

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THE NEW ERA OF DIGITAL PUBLIC RELATIONS: ARTIFICIAL INTELLIGENCE[1]

Fatmagül SAFALI[*] – Şeyhmus DOĞAN[**]

Introduction

In today's world, where technological advancements are accelerating, communication processes have become more dynamic compared to previous eras. The widespread adoption of digital technologies has not only transformed how individuals access information and communicate but has also influenced and reshaped the nature of relationships that organizations establish with one another and their surroundings. Changes in the processes of information production, sharing, and consumption have led to a reshaping of the methods organizations use to interact with their target audiences. This transformation process necessitates that communication activities be conducted within a framework that is faster, more interactive, and more data-driven.

The public relations discipline, which aims to develop relationships with society and its target audience based on mutual understanding and trust, has also been significantly affected by these changes and transformations. Public relations practices, which for many years relied on traditional communication channels as primary tools, have taken on a new dimension with the development and widespread adoption of digital communication environments. The shift of communication activities to digital platforms enables organizations to engage in more intensive and continuous interaction with their stakeholders. Consequently, the diversification of communication environments, the acceleration of information flow, and the increase in content production make it imperative to manage public relations processes in a more strategic manner.

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[1] This study is based on the master's thesis titled "The Digital Transformation of Public Relations: Artificial Intelligence Applications," presented on November 25, 2025, at the Institute of Social Sciences at Niğde Ömer Halisdemir University

[*] Master's Graduate in Communication Sciences, Institute of Social Sciences, Niğde Ömer Halisdemir University, Communication Specialist, Fatmagulsafali@gmail.com, ORCID ID: 0009-0001-4710-753X

[**] Assoc. Prof. Dr. Şeyhmus DOĞAN, Niğde Ömer Halisdemir University, Faculty of Communication, Department of Public Relations and Advertising, Seyhmusdogan@hotmail.com, ORCID ID: 0000-0002-5993-0363

Artificial intelligence (AI), which has been developed to mimic certain cognitive processes unique to human intelligence, has become a key component of public relations, just as it has in many other disciplines. The impact of artificial intelligence in the field of public relations lies in its ability to offer a more systematic and analytical approach. It introduces a new dimension to the field of public relations in terms of effectiveness, speed, and predictive capacity regarding organizations' ability to analyze and reach their target audiences. Therefore, understanding the effects of artificial intelligence in the field of public relations is of great importance for explaining the discipline's current structure and future directions.

1. The Concept and Definition of Public Relations

There is no single definition of the term "public relations." Considering its interaction with various disciplines, the definition of the term differs in both theory and practice. Other factors influencing these definitions include technological advancements and the evolving roles of public relations over the years. While early definitions focused on promotion and public relations agencies, the definitions that have evolved over the years and are prevalent today emphasize relationship management (Okay and Okay, 2021:9). Harlow's definition of public relations is a management approach aimed at establishing effective communication between an organization and its target audience (Harlow, 1976). In summary, it is evident that public relations definitions share common elements; even if they appear different, they ultimately express the same concepts. Public relations is a communication process that aims to establish, develop, and ensure the sustainability of trust, understanding, and interaction between people or organizations. It is a strategic communication discipline encompassing the interaction, communication, and relationship management between organizations or individuals and their target audiences.

2. The Concept of Digitalization and Its Development

The term "information society" describes the development process resulting from the increasing importance of information production and qualified human resources due to advancing technology, as well as the existence of new communication technologies; it is formed by combining the words "information" and "society" (Selvi, 2012:198). Castells has conducted studies to understand and interpret these developments. He introduced the concept of the network society, arguing that dominant activities in society are entirely formed through networks, and that social activities related to global

markets, social actions, and communication are determined by networks (Çımrın, 2011:70).

Digitalization consists of signals called bits, which are composed of zeros and ones. In traditional mass communication, older recording systems known as analog data were used. These signals are slow and prone to misinterpretation. With the innovations brought by digitalization, signals are now transmitted faster, and the connection between sender and receiver has become clearer. As a result, text, images, and transmitted sounds can be delivered in higher quality (Van Dijk, 2018:78).

The most significant and fundamental development influencing the evolution of the internet is the establishment of the World Wide Web (WWW) information transmission and sharing system. Today, the internet operates on the Transmission Control Protocol (TCP), and the current internet consists of IP and TCP protocols (Van Dijk, 2018:215). During the Web 1.0 era, while the production of internet content was carried out by a limited number of people, web pages with a broad readership emerged. Users during this period were merely passive individuals who accessed and consumed the platform. A fundamental characteristic of content transmission directly from the source was that communication or user participation was limited.

The Web 2.0 era enabled users to transition from the role of consumers to that of producers. With Web 2.0, users gained the ability to create their own content and also had the opportunity to communicate with other users simultaneously. As a result, the internet facilitates not only the creation of content but also the direct production of information and the ability to utilize that information.

Web 3.0 is referred to as the third revolution of the internet, and it is during this period that the concept of the Metaverse first gained prominence (Çelik, 2022:68). The most important term of the Web 3.0 era, the Metaverse, is based on the idea of "reflecting the experience of the virtual world into the real world" (Fiğan, 2021).

Web 4.0 was first conceptualized in Germany as "Industry 4.0." The Web 4.0 era is described as the interaction between the Internet of Things and smart factories resulting from advancing technologies. By analyzing machine processes that interact with one another using the Web, the enhancement of such interactions is facilitated (Ersöz, 2020:58-61). The Web 4.0 era can be briefly described as the communication and interaction between people and machines (Aghaei et al., 2012:8).

2.1. The Concept of Digital Public Relations

The new era we are currently living in one that influences many disciplines, where people and technology are intertwined, and which enables communication with humanoid machines—is referred to as the digital age. With ongoing technological advancements, robots are playing an increasingly significant and influential role in human life. Thanks to the existence of computers programmed with human-like intelligence, individuals and organizations are utilizing these humanoid algorithms in many of their activities. The digital age offers numerous applications designed to simplify the lives of individuals and organizations. Digital applications are utilized in everything from the communication organizations establish with people to the activities they implement. Public relations is another area where the impact of digitalization and the digital age is evident.

Digital public relations consists of fast and strategic public relations applications implemented in computer environments through information and communication technologies (ICT) with the help of advancing technology (Herbert, 2005:135). Public relations in the digital era have enhanced their traditional functions through digitalization and have begun to operate effectively in this direction (Gülerman and Apaydın, 2017:259-260). With advancements in communication and technology, the number of digital platforms is increasing day by day. By advancing in tandem with the digitalization process while considering the dynamics of the target audience, and by effectively framing public relations activities within digital platforms, it has become of significant and lasting importance. In this context, the transformation of the target audience is also taken into account alongside digital public relations. As a form of communication management, public relations utilizes all communication tools effectively. Social networks emerging in the online environment without constraints of time or scale demonstrate effectiveness in many areas within public relations, such as shaping public opinion, building trust, fostering consent, and creating corporate reputation (Grunig and Hunt, 1984:42). Through digital public relations, organizations gain numerous advantages. Through digital environments, organizations can seize numerous opportunities, including the ability to establish more effective communication in the relationship between managers and those managed, transparency toward stakeholders, real-time communication with the target audience—immediate access to feedback, the creation of activities to be featured in the press and media, and the immediate informing of the target audience (Günek, 2020:200; Kara and Özgen, 2012:13-15).

The digital transformation of public relations is not a process that can be explained solely by changes in communication tools. This transformation also encompasses structural changes in organizations' approaches to communication, the ways they engage with their target audiences, and the planning of communication strategies. While traditional public relations typically involved one-way communication from the organization to the target audience, digital communication environments have brought two-way interaction to the forefront. Consequently, target audiences have evolved from passive recipients of messages into active stakeholders who express opinions, create content, and engage directly with organizations.

There are certain strategies that must be followed to conduct digital public relations activities on online platforms. First, the platforms to be used for communication with the identified customers or target audiences must be selected, and appropriate plans must be developed accordingly. Easy accessibility to the target audience must be ensured and maintained across all platforms. Public relations involves fostering a continuous dialogue between organizations and their target audiences rather than relying on one-way communication. The impact of the internet on human relationships varies depending on how public relations professionals utilize the internet to facilitate dialogue (Nergiz, 2019:19). Public relations, transformed by digitalization, has expanded in scope due to its adaptation to digital platforms. The application areas of public relations transformed by digitalization include online image management, online crisis management, online reputation management, online issue management, and relations with online communities. On the other hand, digital public relations tools include corporate websites and blogs, social media, search engine optimization, wikis, forums, podcasting, instant messaging, email, and personal digital assistants (Görkemli 2019; Güçdemir, 2024:135).

2.2. Application Areas of Digital Public Relations

The scope of digital public relations includes positively influencing communication and interaction with the organization's target audience, strengthening the organization's image and reputation, crisis management, issue management, and adapting traditional public relations practices to the digital environment (Özel and Sert, 2014:307–309).

2.2.1. Digital Corporate Identity

Corporate identity has evolved into corporate websites as a result of digitalization, a byproduct of advancing technology. Organizations must design

their corporate websites to reflect their corporate identity. Any shortcomings on the website may lead to the target audience misinterpreting the organization's identity. The fundamental components of corporate identity, along with the organization's employees, are key factors influencing corporate identity. Employees play a significant role in projecting the organization to its target audience, and their attitudes and behaviors impact corporate identity (Büyükdoğan and Bingöl, 2021:179-182).

2.2.2. Digital Image Management

Digital image management involves planning and strategizing all applications on the organization's website and in digital environments, regularly monitoring them to ensure nothing negatively impacts the image, providing information and making statements to the target audience using digital media tools, and taking feedback from the target audience into account (Görkemli, 2019:111).

2.2.3. Digital Reputation Management

Reputation is formed as a result of personal and societal evaluations regarding an organization's reliability and competence and is achieved by gaining the approval of the target audience (Utma, 2018:147). The growing importance of technology with the advent of the Web 2.0 era has transformed traditional public relations strategies into digital ones, thereby establishing digital reputation management (Deneçli, 2019:41).

2.2.4. Digital Corporate Social Responsibility

As a public relations activity, social responsibility aims to foster sensitivity to the views of target audiences, position corporate brands, and ensure an understanding of public opinion on social issues (Rees, 2020:73). It is defined as organizations undertaking activities without expecting anything in return, while taking social sensitivity into account. These successful activities aim to enhance the organization's reputation within society (Dirim, 2010:60).

2.2.5. Digital Crisis Management

With the development of digital media, new and different sources have emerged for potential crises. Compared to traditional media, social media enables rapid growth during a crisis and allows the crisis to reach broad audiences quickly. If digital media platforms are used correctly and effectively during a crisis, the crisis can be resolved before it escalates. Public relations

professionals must effectively utilize digital media tools during a crisis, approach the target audience with sincerity on behalf of the organization, and create authentic stories for the organization. To effectively manage a crisis, organizations must implement a strategy that aligns digital media platforms with their communication strategies (Rees, 2020:45-107-113).

2.3.1. Tools Used in Digital Public Relations Applications

The tools used in digital public relations were first described in the book "The Social Media Bible". Digital public relations tools include social media platforms, content sites (Wikipedia, Blogger, SlideShare), photo-sharing sites (Flickr, Photoucket), audio-sharing sites (Podcast, iTunes), video-sharing sites (YouTube), tools used for information gathering and storage (Google Reader), virtual worlds (Second Life), search engines (Google, Yahoo), and personal communication tools (Skype, WhatsApp), among others (Safko and Brake, 2009:23–32).

2.3.2. Corporate Websites

Websites facilitate the establishment and maintenance of relationships between an organization and its stakeholders. By sharing announcements, promoting activities, and enabling real-time communication on web pages related to the organization's operations, they allow the organization to quickly leverage public relations practices (Küçüksaraç, 2008:96).

2.3.3. Blogs and Corporate Blogs

The term "blog" is derived from the integration of the terms "web" and "log" (Zarella, 2010:5). Corporate blogs can also be managed by public relations professionals. Generally, blogs are utilized as a tool for messaging and research. Digital public relations also utilizes blogs to achieve objectives such as information gathering, identity building, effective messaging, and environmental scanning (Kent, 2008:33-34).

2.3.4. Search Engine Optimization (SEO)

Search engine optimization, or SEO for short, is a tool that helps direct users to websites they are searching for using specific keywords. Examples include search engines like Google and Yahoo. In search engine optimization, database search and web page indexing methods are used. In digital public relations, search engine optimization is also used to ensure that the

organization's website appears at the top of search results for users (Gifford, 2010:63).

2.3.5. Wikis

Developed in 1994 by Ward Cunningham, the technology is derived from the Hawaiian word "wiki-wiki," meaning "quick." In 1995, Cunningham created an online guide called "WikiWikiWeb" to enable software programmers to share information. Built upon this idea, Wikipedia is known as an online encyclopedia that anyone can edit. (Bakardjieva and Grandinarova, 2012:8). Wikis serve as a tool that facilitates two-way communication in digital public relations. (Alakbarova, 2017:38-39).

2.3.6. Forums

Forums provide digital public relations professionals with the benefit of reaching broad target audiences, increasing brand awareness, and improving reputation management (Wright and Hinson, 2009:2).

2.3.7. Podcasting

The term "podcast" is a portmanteau of "iPod," the portable music player developed by Apple, and "broadcast," which means "to transmit" in English (Giordano, 2017:430). Podcasts offer organizations the opportunity to express and share their ideas with a broader audience (Gillin, 2008:1).

2.3.8. Social Networks

Social networks are dynamic environments where relationships can be formed quickly but can also end just as quickly. In digital public relations management, various tools such as blogs, X (Twitter), and other social media platforms can be utilized. Among the social media platforms most preferred by public relations professionals, Facebook and X (Twitter) stand out. These are followed by LinkedIn and YouTube (Kharisma and Kurniawan, 2018:15).

Today, public relations activities become more effective when conducted through social networks. By establishing online communication between the target audience and the organization, the target audience can effectively convey their desires and needs to the organization, and the organization can develop strategies tailored to the target audience's desires and needs. Through social media, which provides interactive communication capabilities, organizations can quickly and easily view feedback from their target audiences and develop corresponding initiatives.

3. The Concept of Artificial Intelligence

Artificial intelligence refers to the ability of computer algorithms to mimic human intelligence. It encompasses a multidisciplinary field of research and application that involves computer algorithms mimicking mental processes such as thinking, decision-making, learning, and problem-solving. Artificial intelligence, which has become one of the most advanced and intriguing fields of modern technology, was first mentioned in the 20th century. The fundamental goal of artificial intelligence is to endow computers and machines with intelligence. At its core, artificial intelligence represents not merely a technical innovation but the recreation of humanity's relationship with nature and knowledge in a virtual environment within the context of advancing technology and a digitalizing world. Rooted in humanity, artificial intelligence aims to mimic humans and can be defined as a "digital human" that knows everything. Artificial intelligence can also be defined as the process of making machines resemble humans not only in their external behavior but also in their internal mental processes—developing systems that act and think like humans. It is possible to define artificial intelligence not merely as a technological innovation, but as the digital evolution of human thought. In this context, the concept of artificial intelligence has moved beyond being a fantasy confined to the realm of science fiction and has become a field of academic and industrial research.

From a technical perspective, artificial intelligence can be defined as a computer program capable of learning. One of the key aspects where intelligence is emulated is the learning process, and another is the ability to make human-like decisions. Artificial intelligence developers aim to create code that enables the system to learn from available data (images, sound, text, video). The goal is for the program to function autonomously without human intervention once it has been written. The learning process of artificial intelligence is supported by data provided by humans. This growing volume of data over time enables the system to continuously improve itself. As people continue to provide data, artificial intelligence creates and optimizes its own algorithms (Rouhiainen, 2020:2-3). Data is the core of artificial intelligence. This data consists of the digital footprints people leave behind in the online environment (Harari, 2018:15).

Artificial intelligence techniques enable the adaptation of AI to various problem domains within today's evolving digital transformation processes. These techniques also demonstrate effectiveness in human-centric pro-

cesses such as decision-making, control, analysis, and prediction. Each technique serves the function of solving different problems. Expert systems, which emerged in the early days of artificial intelligence, facilitate the storage of organizational knowledge such as learning and application, and always represent knowledge within a specific field (Mascrenghe, 2021:144).

Expert systems are technologies capable of solving problems in a specific field using knowledge and logical inference, much like an expert (İçen and Günay, 2014:37-45). Expert systems, which emerged in the early days of artificial intelligence, ensure the retention of institutional knowledge such as learning and application, and always represent knowledge in a specific domain (Mascrenghe, 2021:144).

The concept of fuzzy logic, developed by Lotfi A. Zadeh in 1965, aims to derive meaningful results from uncertain and imprecise data. This approach uses approximation rather than certainty (Eğrisöğüt and Kazan).

Machine learning is an algorithmic process that evolves through experience (Tegmark, 2021:100). It is defined as the ability of machines and computer algorithms to make suggestions and predictions without the need for any coding (Rouhiainen, 2020:7). From a broader perspective, machine learning uses computer algorithms to solve a problem based on past data. The computer learns information related to specific events and, as a result, can make decisions and generate solutions for similar situations it has not encountered before. In this process, introducing relevant data to the computer is of great importance for the computer to gain experience (Yılmaz, 2019:40-60).

Genetic algorithms are programs developed by drawing inspiration from the workings of natural evolution and are based on the principle of survival of the fittest. These algorithms follow a process similar to the mechanisms of natural evolution (Çalışkan et al., 2016:22). Today, genetic algorithms are widely used to solve complex business management problems (Görener and Toker, 2020:10).

Artificial neural networks are a technological innovation fundamentally inspired by the human brain. Many human behaviors occur through nerve cells, and the operation of these systems is modeled after this process (Ergezer et al., 2021:14). They consist of software that, by mimicking the human brain in terms of learning, gains the ability to learn and generalize (Öztürk and Şahin, 2018).

Artificial intelligence is not merely a technology composed of algorithms, but rather a holistic system where algorithms are implemented, function, and can be adjusted. These tools form the building blocks of artificial intelligence systems. They translate the theoretical framework into practical applications.

Natural language processing refers to the mutual communication between humans and computers. In artificial intelligence research, it enables machines and computers to understand human language and facilitates the creation of text-based analyses. Natural language processing is achieved through the use of machine learning, linguistics, and computer science (Thormundsson, 2025).

Computer vision is an advanced artificial intelligence application that enables the detection and classification of objects, individuals, text, and various actions within static or moving images. This technology is primarily supported by algorithms based on deep neural networks and has a very broad range of applications. Today, image processing and recognition systems are used in fields such as the analysis of video content in biometric security applications (IBM, 2025).

Speech recognition refers to an artificial intelligence application that detects words spoken by humans and converts them into written text in a digital environment. This technology aims to facilitate interaction between users and machines by analyzing and interpreting audio signals through natural language processing capabilities. Speech recognition systems are widely used in various fields, including dictation applications on computers, voice-controlled remote controls on televisions, voice messaging applications, and voice-command-based phone responses in GPS-based navigation systems (IBM, 2025).

Problem-solving and reasoning, as the two most fundamental cognitive functions of human intelligence, are the internal processes individuals undertake to resolve an unknown situation, make decisions, or generate new knowledge. These two concepts shape not only individual thought processes but also the fundamental logical structures of artificial intelligence systems. In artificial intelligence systems, problem-solving involves processes of information processing and solution generation through algorithms.

3.1. The Impact of Artificial Intelligence on Public Relations

Communication has been one of the cornerstones of human social life throughout history. However, under the influence of the digital age, this cornerstone is undergoing a profound transformation, and artificial intelligence lies at the heart of this transformation. Communicative processes such as the production, sharing, reception, and interpretation of information are being reshaped by the technical and conceptual possibilities offered by artificial intelligence. The rise of artificial intelligence in the field of communication is viewed not merely as a technological advancement but also as a process of social, cultural, and ethical restructuring. Artificial intelligence systems possess the capacity to model and, in many cases, replicate human behavior in communication. This capacity does not limit the actors in the communication process to humans alone. It enables the inclusion of artificial actors—such as algorithms, virtual assistants, and automated content generators—in the process. Digital media stands at the forefront of fields where artificial intelligence technologies are most intensively utilized. News agencies, digital platforms, and social media companies make extensive use of AI-powered algorithms in their content production and distribution processes. Thanks to these algorithms, content can be created both more quickly and with a focus on the target audience.

The public relations field is undergoing a profound transformation driven by the innovations of the digital age. One of the most prominent elements of this transformation is the integration of artificial intelligence technologies. Artificial intelligence is entering the public relations sector not merely as a technological innovation, but as a tool that influences business processes, strategies, and daily operations.

John Bara, a leader in the technology sector, notes that forward-thinking practitioners in public relations have recognized that AI provides valuable data and content, and therefore, other professionals should not fear AI. Bara emphasizes the importance of adapting to new trends and expresses his belief that AI can serve as a driving force in the public relations sector. Waddington, on the other hand, argues that AI will significantly transform public relations in the coming years and suggests that the application areas of AI should be explored in both public and private sector organizations (Biswal, 2020:175).

Considering the relationship between public relations and artificial intelligence, the need to redefine artificial intelligence through the lens of public relations emerges. In this context, artificial intelligence can be defined as technologies that mimic human cognitive abilities to undertake public relations activities and perform functions traditionally associated with humans—either under the control of public relations practitioners or independently of them. According to Galloway and Swiatek, artificial intelligence is defined as technologies that mimic human cognitive abilities to perform or control public relations activities. This definition indicates that the use of artificial intelligence in public relations leads to technological and organizational changes. With the use of artificial intelligence in the field of public relations, it is anticipated that changes will occur in the job descriptions and roles of professionals (Galloway and Swiatek, 2018:735-738).

Today, artificial intelligence has reached an advanced technological capacity capable of undertaking processes such as learning, analysis, and problem-solving—functions traditionally considered uniquely human. This technological evolution is paving the way for artificial intelligence to be effectively utilized not only in interpreting data but also in content creation processes. In this context, a significant transformation is expected, particularly in the field of digital content marketing. In the near future, it appears inevitable that algorithms will play a decisive role in processes ranging from content production to distribution. Automation systems will have the ability to monitor public reactions and behaviors in real time and shape communication strategies accordingly. Similarly, digital assistants or bots will manage frequently encountered general requests; they are becoming effective tools for personalizing content and implementing strategic planning. In light of these developments, a fundamental question is emerging within the public relations discipline. To what extent are current public relations activities and practices integrated with artificial intelligence, and what form this integration will take in the future, as discussed at, is also a matter of curiosity. In the future, data-driven and autonomous systems are likely to replace human-based decision-making processes. Consequently, it is a critical necessity for public relations professionals to be prepared for this transformation and to align their professional competencies with technology (Valin, 2018b).

Today, AI based tools have become strategic components in the planning and execution of public relations campaigns. These technological tools have moved beyond merely serving as supportive elements to occupy a central position in effective communication processes. In particular, AI enhanced

algorithms possess the capacity to carry out various communication activities that were historically associated with fields such as journalism, advertising, public relations, and even propaganda. Thanks to the advanced analytical capabilities and data processing power these tools offer, organizations can develop more precise strategies targeting their audiences, optimize their content, and more effectively shape public perception. Thus, artificial intelligence is blurring the boundaries between communication disciplines, accelerating the digital transformation of the public relations profession, and reshaping its practical application (Nobre, 2020).

The development of artificial intelligence technologies is profoundly influencing and transforming both the ways of working and the strategic understanding of communication in the public relations field. While traditional public relations practices typically rely on manual data collection and human-centered analysis, AI offers the potential to achieve more comprehensive and predictable results. AI provides particularly effective tools for data analysis and target audience identification. Organizations can now analyze their target audiences' behaviors, interests, and digital interactions in real time, thereby developing more personalized and effective communication strategies. This shift moves public relations beyond merely an information dissemination or image management process, strengthening the practice of building mutual and interactive relationships. One of the most notable contributions of artificial intelligence is in content creation. Routine texts such as press releases, social media posts, or customer responses can be quickly generated using AI-based software, which in turn enables public relations professionals to focus on more strategic tasks. However, the advantage offered by AI is insufficient on its own because it lacks the emotional intelligence inherent in human communication. This is because public relations is not merely about conveying information; it encompasses human-specific qualities such as trust, empathy, and perception management. AI also plays a significant role in crisis communication. It can develop strategies to detect a potential crisis and prevent it from escalating. This also ensures reputation management for organizations. Artificial intelligence is a support mechanism that transforms the public relations profession but still requires human involvement. When the speed provided by technology is combined with the emotional thought processes provided by humans, artificial intelligence can have a significant impact in the field of public relations.

Today, billions of data points are generated daily through social media platforms, news sites, online forums, and digital communication channels.

Analyzing such a massive volume of data with human resources alone is extremely challenging. AI technologies, however, process large datasets quickly, helping organizations understand their target audience's behaviors, trends, and expectations in greater detail. Advances in data analysis ensure that public relations strategies are grounded in more scientific foundations. While communication decisions were often made based on experience and intuition in the past, today decision-making processes can be based on more objective data thanks to AI-supported analyses. As a result, organizations can plan their communication processes and strategies more effectively and use their resources more efficiently.

In the digital age, organizations must constantly produce content to maintain their visibility. Social media posts, blog articles, corporate statements, press releases, and digital campaign content are key components of this production. Artificial intelligence technologies can generate text based on specific inputs, prepare content drafts, and refine existing text. It can be viewed as a tool that helps public relations professionals save time and supports their work. With AI-powered chatbots, organizations can maintain seamless communication with their target audiences. Chatbots can provide significant benefits, particularly in managing high volumes of communication requests within large-scale organizations.

The use of artificial intelligence in the field of public relations can also bring certain ethical issues. Data privacy, algorithmic biases, the generation of misinformation, and a lack of transparency are among the primary concerns. Since the principles of trust, honesty, and mutual understanding form the foundation of the public relations field, ethical responsibilities must not be overlooked when using artificial intelligence.

Discussion and Conclusion

Public relations can be defined as a strategic communication discipline built on trust, transparency, and mutual understanding between people and organizations. Traditional public relations practices are carried out through methods such as face-to-face communication, press releases, media interactions, and organizational management. The primary objective is to ensure two-way communication that enables organizations to express themselves accurately, clearly, and persuasively while also taking the target audience's feedback into account.

Today's digital transformation process has also driven digital transformation in the field of public relations. It has moved away from being a discipline confined solely to media relations; it has evolved into a data-driven, multi-channel, and interaction-focused communication strategy. Thanks to digitalization, the ways in which organizations interact with their target audiences have moved beyond being bound by time and place, undergoing a transformation that enables faster, real-time feedback and multi-channel interaction. Social media platforms, corporate websites, online campaigns, and interactive digital content demonstrate that public relations is no longer limited to traditional methods but has evolved into a multidimensional structure. Consequently, the creation of content tailored to the target audience has accelerated, and opportunities for receiving feedback have increased.

Digitalization in the field of public relations signifies not only technological advancement but also a fundamental shift in communication strategies. A significant benefit of digital transformation for public relations has been the integration of artificial intelligence (AI) applications. The integration of AI technologies into public relations is ushering in a new era in the field. Artificial intelligence provides public relations professionals with advanced tools for data analysis, social media monitoring, content recommendation development, early detection of potential crises, and the immediate processing of feedback. By analyzing target audience behavior using big data and machine learning technologies, it has become possible to create messages that are personalized, effective, and persuasive for the target audience. This transformation ensures that AI technologies play a strategic role in the field of public relations.

With artificial intelligence, public relations processes are becoming faster, more measurable, and customizable to the target audience. Among the key advantages AI offers to public relations are improved time management, reduced error rates, rapid response to crises, personalized communication, and data-driven decision-making processes. The integration of digitalization and artificial intelligence in public relations represents a significant transformation that accelerates communication processes and enhances their effectiveness. However, ensuring the long-term success of this transformation depends on technological advancements being grounded in a human-centered approach. With digitalization, public relations eliminates geographical and temporal barriers, making communication more accessible and analytical. Artificial intelligence, in turn, creates a strategic layer on this foundation, enhancing the process through automation, content creation,

and comprehensive data analysis. Consequently, in the field of public relations, this enables the creation of data-driven, optimized communication strategies; allows for more time to be dedicated to strategic creativity through time- and resource-saving automation; and facilitates a deeper tracking of the target audience's needs and trends, thereby enabling the early detection of potential crises and the implementation of preventive measures before they arise.

The future of public relations, with the use of artificial intelligence applications, is evolving into a landscape where innovative, data-driven, and user-friendly campaigns—tailored to the target audience—can be created in minutes, and where real-time communication with the target audience is maintained. It must not be forgotten that human intellect and effort remain indispensable alongside the conveniences technology offers. After all, artificial intelligence only holds meaning when used by people. The creativity, empathy, cultural understanding, and sense of ethical responsibility of public relations professionals are the fundamental elements that transform the potential of artificial intelligence into meaningful results.

While the rapid advancement of artificial intelligence technologies brings benefits across various fields, including public relations, it also brings with it ethical issues and potential harms. The functionality of artificial intelligence systems relies heavily on data. This data often consists of users' digital footprints. Some ethical issues that may arise from this situation include the unauthorized collection of user data and security vulnerabilities in data storage processes. Furthermore, when used as a content-generation tool, it can lead to issues such as the production and dissemination of misinformation, the manipulation of user behavior, unethical interventions in public opinion-forming processes, and the negative impact of AI-generated content that is indistinguishable from reality on public opinion. It brings with it problems such as influencing or manipulating users' decision-making processes, increasing digital dependency, and users being unable to question their own decisions. It may cause institutions without access to technology to fall behind and lead to the exclusion of institutions that do not use AI applications from competition. Finally, it can lead to a decline in the value of human labor, job losses, and the devaluation of human work. As tasks requiring specialized skills are delegated to machines, the accumulation of expertise within organizations gradually weakens over time, employees' experience-based decision-making skills diminish, and organizational pro-

cesses may become dependent on automation. This situation leads to human judgment taking a backseat in strategic areas. It can threaten organizational sustainability by producing long-term negative consequences such as the weakening of human-centered creativity and the narrowing of professional development channels.

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IS ARTIFICIAL INTELLIGENCE A NEW CULTURE INDUSTRY?

The Algorithmic Transformation of Cultural Production

Duygu ÜNALAN*

Introduction

Today, with Midjourney, you can design ads, use algorithmic systems to generate news articles, or compose music with Suno. Actions considered uniquely human, such as observation, intuition, and creativity, have now become actions that are compared to those of machines. And this transformation has accelerated so rapidly over the past 10 years that the conceptual tools we use to make sense of it have failed to keep pace.

In recent years, discussions about artificial intelligence have largely taken place on a technical level. The focus is primarily on topics such as how and to what extent these models have advanced, what tasks they are capable of performing, and whether they can replace human labor. However, in order to understand and make sense of artificial intelligence technologies, it is also necessary to understand and make sense of the economic relationships, ownership structures, and power dynamics that create them and drive their spread. According to Mosco (2009), communication technologies have never been neutral tools; they are both the product of and the vehicle for economic power relations. In this context, we must not view artificial intelligence as merely a tool, without exception. Artificial intelligence technologies are a field, particularly in the realm of cultural production, where ownership relationships can be clearly observed. This is because today, artificial intelligence systems such as OpenAI, Google, Meta, Microsoft, and Stability AI are owned and controlled by a handful of global tech giants. The computing infrastructure, data centers, and financial resources required to train these systems are limiting competition in the field and leaving it in the hands of certain players. As Srnicek (2017) emphasizes with the concept of platform capitalism, platforms, which have become central to today's digital economy, have created a new model of accumulation by transforming the

* Assoc. Prof., Niğde Ömer Halisdemir University, Faculty of Communication, Department of Journalism, duyguunalan85@gmail.com, ORCID ID: 0000-0002-7420-2006

data they gather from user activities into value. Generative artificial intelligence also emerges as the next logical step in this model. Consequently, digital platforms no longer merely process data; they distill cultural production capacity from that data.

The problematic aspect of this process, however, is "data colonialism." Large language models and image generation systems use products that make up the historical legacy of human culture, such as books, works of art, musical compositions, and photographs, as training data. However, this use is often carried out without the consent of the manufacturers of these products. Consequently, the products of human creativity are being used as raw materials in the construction of systems that will render that creativity obsolete. This cycle, however, should be viewed not as a technological innovation but as a structural issue of domination over cultural labor. The studies conducted so far have not yet addressed this issue sufficiently.

The study by Ertürk and Madsar (2026), which comprehensively examines research on artificial intelligence in the field of communication, clearly highlights this gap. Many studies in the literature, from a mainstream and managerial perspective, view artificial intelligence as a tool for increasing efficiency, a means of facilitating communication, or a marketing tool. However, studies that focus on the ownership relationships, cultural production processes, or ideological influences underlying artificial intelligence Technologies, and examine them from a critical perspective, are quite limited.

Artificial intelligence technologies have not merely brought about technological transformation or change. It is also important to make sense of the algorithmic transformatin taking place in cultural production. In this context, the Frankfurt School's critical approach to the culture industry offers an important perspective. Under the pressure of capitalist production relations, culture has become standardized rather than a unique form of creative expression. The consumption of this cultural production, which has been shaped by market logic and has become a commodity, is, however, guaranteed in advance (Horkheimer and Adorno (2014). While cultural production in traditional media took place in TV studios, record labels, and radio networks, today it occurs through algorithms' recommendation rankings and large language models' text generation. Therefore, it is possible to say that although the tools have changed, the logic behind cultural production has not.

According to Gillespie (2014), algorithms are not merely technical filters; they are also social mechanisms that regulate cultural visibility and shape the flow of information. The concept of the "platform society" also illustrates how digital platforms, such as Google, YouTube, TikTok, and Instagram, have taken over and transformed cultural mediation (van Dijck et al., 2018). Through generative artificial intelligence, algorithms today not only rank content but also generate it. Consequently, as Fuchs (2023) emphasizes, in digital capitalism, communication technologies are now transforming not only cultural circulation but also cultural production itself. In this context, this study examines whether artificial intelligence represents an algorithmic deepening of the logic of domination in the culture industry, or whether it constitutes a new cultural-economic form that transcends this logic, one that overlaps with it but differs from it in fundamental ways. The study consists of four main sections. In the first section, the concepts of standardization, mass production, reification, and false individualization will be examined in relation to the Frankfurt School's concept of the culture industry; the relationship between capitalism, mass media, and modern culture will be discussed within the framework developed by Adorno and Horkheimer. In the second chapter, we will examine how digital capitalism has transformed cultural production through the internet, social media, and platformization. In this context, the discussion will focus on how digital platforms have evolved into new cultural intermediaries that have replaced the editor and will examine the concept of the algorithmic culture industry. In the third chapter, generative artificial intelligence will be examined alongside the impacts of large language models and image-generation systems on automation processes, writing, and artistic labor. In this context, the question of whether artificial intelligence is eliminating human labor or reorganizing it will be discussed from an economic-political perspective.

The fourth and final chapter serves as a synthesis. The discussion will focus on whether the logic of personalization on digital platforms is truly individualized or algorithmically homogenized; it will also explore whether cultural production leads to a quantitative explosion or a qualitative contraction. In this context, it is important to emphasize the following point. This study is neither a critique of artificial intelligence nor an attempt to popularize the optimistic promises made by the industry. The aim of this study is to view artificial intelligence not as a neutral, independent, ahistorical miracle, but as the complex industrial system it actually is, one built on the relation-

ships between labor, data, energy, and capital. It is believed that this perspective will allow for a more realistic assessment of artificial intelligence's potential and a clearer understanding of the risks it poses.

1. The Concept of the Cultural Industry and the Commodification of Cultural Production

There is a deep-rooted relationship between culture and capital. Cultural works such as books, films, and music have been transformed into commodities within capital relations and have become objects of industrial production. Today, however, these works are produced using artificial intelligence tools. However, the integration of artificial intelligence into cultural production processes is not the beginning of the transformation that is taking place. The integration of artificial intelligence into cultural production processes, however, has taken cultural production to a new level. Before discussing the role of artificial intelligence in cultural production processes, it is necessary to consider the Frankfurt School's critique of the culture industry.

1.1. The Founding and Development of the Frankfurt School

A look at world history reveals that every intellectual tradition has emerged under specific historical conditions and driven by certain factors. Historical turning points also played a role in the emergence of the Frankfurt School. The failure of the workers' revolution Marx had predicted to materialize, the survival of capitalism despite economic crises, and the rise of fascism in Europe in the late 1920s pushed the intellectuals of the Frankfurt School into a process of intellectual reflection; the question "When will capitalism collapse?" was replaced by "Why do people become complicit in their own exploitation?"

The Institute was physically established in 1923. Founded on the initiative of Felix Weil under the name Institute for Social Research (Institut für Sozialforschung), the Institute's principal architects were Weil, Friedrich Pollock, and Max Horkheimer, who would later become the Institute's director. The Institute, which initially followed a Marxist line, underwent a transformation when Max Horkheimer became its director in 1930; it also began to be referred to as the School (Slater, 1998).

Under the leadership of Max Horkheimer, Theodor W. Adorno, Herbert Marcuse, and Erich Fromm, the School began to develop a critical theory that went beyond the narrow economic focus of classical Marxism to encompass culture, ideology, and everyday life. Behind this theoretical expansion lies a concrete historical impasse. The working class of Western Europe has

not assumed the role of a revolutionary subject, as Marx had predicted, but has largely chosen to remain within the existing order. The intellectuals of the Frankfurt School, too, have sought to understand the underlying reasons for this choice, which was neither free nor conscious (Slater, 1998, pp. 33-35).

Another factor in this intellectual transformation was the Nazi regime. The Institute was closed by the Nazi regime in 1933 on the grounds that it harbored hostile tendencies toward the state, and Horkheimer was removed from his position at the University of Frankfurt. Following this development, the Institute moved its headquarters to Geneva, opened small branches in Paris and London and in 1934, at the invitation of Columbia University, established itself in New York (Jay, 2014).

Intellectuals who settled in the United States found themselves confronted with another form of domination, one that liberal capitalism masks with cultural abundance. Although fascism and liberalism may seem to be opposites, the intellectuals of the Frankfurt School recognized that there is a commonality underlying this opposition. Both systems have transformed the liberating reason of the Enlightenment into an instrumental reason, severing the individual from their autonomy and reducing them to a mere part of the crowd, and have utilized culture as a mechanism of control. In this context, Horkheimer and Adorno also sought to understand why humanity has been driven toward a new form of barbarism rather than achieving a truly humane state. According to them, while the Enlightenment promised to free people from fear and elevate them to the status of masters, it has, within its own logic, transformed into a new myth, the myth of reason and progress, and has made a far more effective form of domination possible. The root cause of this regression, however, lies not in nationalism or other modern ideologies, but in the Enlightenment itself, which has been paralyzed by fear in the face of reality (Horkheimer and Adorno, 2014, p. 13). Therefore, it can be said that the concept of the culture industry, which has taken shape in light of these developments, offers a comprehensive perspective on how modern capitalist society functions, how consent is produced, and how freedom is transformed into an illusion.

1.2. The Concept of the Cultural Industry

The concept of the "culture industry" was first used in *The Dialectic of Enlightenment*, published in 1947. Adorno and Horkheimer believed that the

concept of "mass culture" created the misconception that it arose spontaneously from within the masses or that it was a form of popular art; for this reason, they adopted the concept of the "culture industry" in place of "mass culture" (Adorno, 2003, p. 76). According to Horkheimer and Adorno (2014, pp. 162-163), in modern societies, culture is not an expression that arises organically from the bottom up; rather, it is a product that is planned, managed, and marketed from the top down. According to them, the culture industry combines the old and the familiar in a new form. Products tailored to mass consumption are produced across all sectors according to a more or less common plan, and these sectors form a virtually seamless system (Adorno, 2003, p. 76).

At the heart of the concept of the culture industry lies the understanding that capitalism organizes not only factories but also the imagination. Just as industrial products are mass-produced in factories according to standard molds, movie scripts, popular music, radio programs, and magazines are also subject to the same economic logic. In the famous words of Horkheimer and Adorno, "Today, culture infects everything with its likeness." According to the authors, film, radio, and magazines form a single system, with each medium, both individually and collectively, continuing to extol the same steely rhythm. (Horkheimer and Adorno, 2014, p. 162). Therefore, it is possible to say that similarity is not a random result but rather a founding principle of the system.

At this point, it is also necessary to address the concept of "standardization," another key concept in the critique of the culture industry. To understand standardization, it is first important to correctly understand the concept of "industry." According to Adorno (2003, p. 78), the term is used not to describe the production process itself, but rather the standardization of cultural goods and the rationalization of distribution techniques. The particularly clever aspect of standardization is that it hides itself. The cultural industry prevents consumers from resisting the system by creating the illusion of diversity. This illusion, referred to as so-called individuality, suggests that the differences between individuals, in their posture, hairstyle, clothing, accent, and so on, do not exceed one-thousandth of a millimeter and are replicated just like mass-produced objects. The unique nature of the self is a socially conditioned monopoly, yet it is presented as if it were natural (Horkheimer and Adorno, 2014, pp. 205-206). A movie viewer can choose which genre of film to watch, but even though they may seem different, all film

genres are packaged, priced, and marketed by the same industrial production system. Although the choice is an individual one, freedom is an illusion.

The power of this illusion stems from the consumer's position vis-à-vis the culture industry. According to Adorno, the consumer is not the subject but the object of the culture industry. In this system, the masses are also objects that have been calculated and have become an extension of the mechanism (Adorno, 2011, p. 110). For this reason, the masses are not the measure of the culture industry, but its ideology. In order for the system to ensure its continuity, it must adapt to the masses. However, the starting point of the culture industry is not the actual demands of the masses, but rather the unchanging and given mindset attributed to them (Adorno, 2003, pp. 76-77).

The commodification of cultural products constitutes another critical axis of this analysis. According to Marx (1867/1976), in capitalist societies, the use value of commodities has increasingly been overshadowed by their exchange value. Adorno and Horkheimer extended this observation to the realm of culture. According to them, the industry manages cultural commodities not according to their specific content and structure, but according to their market value. What is new in the culture industry is the direct and unambiguous priority given to the definite and carefully calculated utility of its most typical products; the autonomy of the work of art, which is always shaped by various influences, is consciously eliminated, whether within or outside the will of the control mechanism (Adorno, 2003, p. 77).

It can be said that, for Horkheimer and Adorno, the culture industry is not merely an economic mechanism, but also a machine of consent. Standardized cultural products shape consumers' thought patterns, value judgments, and imagination regarding social possibilities. Criticism of the cultural industry provides a framework that makes it possible to examine a cultural product not only in terms of its content, but also in terms of who produced it and what economic interests were involved.

1.3. Relationships Between Production and Consumption in the Cultural Industry

The cultural industry must be viewed not merely as a matter of content, but as a system of production. What matters here is not so much what is produced, but rather who produces it, under what conditions, how it is distributed, and within what power relations it encounters the consumer.

Decisions regarding cultural production are largely made based on market research, consumer trends, and profitability calculations. The plot of a film, the format of a television program, or the production style of a musical work is often shaped more by economic expectations than by artistic concerns. Adorno (1991) states that this situation systematically discourages producers from taking risks and leads them to repeat formulas that have been successful in the past. Consequently, innovation and originality in the field of cultural production have been replaced by a safe and repetitive approach to production. This, in turn, leads to standardization. At this point, the consumer's role is to ensure the system's reproduction. Although cultural consumption may appear to be a sphere where individual tastes are freely satisfied, it is in fact carefully regulated. The cultural industry meets real needs on the one hand, while creating artificial needs on the other. This creates a continuous cycle of needs. As Horkheimer and Adorno (2014) emphasize, the true success of the culture industry lies in its ability to transform the cycle of consumption into an internalized habit.

Production and consumption are interrelated and reinforce each other. While creators produce content based on consumer demands, they also shape those demands. Storey (2018) describes this cycle as follows: The culture industry does not merely offer products; it also generates desires and expectations regarding these products. Therefore, it can be said that culture is not merely a sphere of meaning production, but is also deeply intertwined with processes of capital accumulation.

The legacy of the Frankfurt School is reemerging with surprising relevance in the digital age. Cultural production and consumption are now organized not only by media companies but also through digital platforms. Users are no longer merely consumers; they are generating data, sharing content, and quietly contributing to the processes by which platforms create economic value. This development is blurring the boundaries between producers and consumers and necessitates expanding the critique of the cultural industry with new conceptual tools. In the next section, this expansion will be examined through the lens of digital capitalism and algorithmic systems.

2. From Digital Capitalism to the Algorithmic Culture Industry

The Frankfurt School's critique of the culture industry demonstrates how cultural production is integrated into capitalist logic. However, during the period when this critique was developed, the producers of culture were

specific and relatively traceable actors, such as studios, broadcasters, and record labels. Digital transformation, however, has radically changed this landscape. Cultural production no longer takes place within the walls of factory-like institutions, but rather through decentralized networks, data streams, and platforms. The traditional distinction between producer and consumer has become blurred, and control over cultural circulation has increasingly shifted to invisible algorithmic systems. This section traces the transformation in question in two steps. First, we will discuss how digitization has reorganized the economic foundation of cultural production; then, we will show how platforms have become new cultural intermediaries, replacing traditional editors and publishers.

2.1. Digitalization and the Transformation of Cultural Production

The cultural industry of the 20th century centered on traditional media platforms such as radio, television, and cinema. In this context, the boundaries between producing institutions and consuming audiences are relatively clear. With the spread of the Internet, this clear distinction has begun to blur. However, what is at issue here is not the logic of the culture industry, which is becoming increasingly blurred, but rather its spatial and institutional form. What is at stake here is not the disappearance of the relationship whereby culture is dependent on economic rationality, but rather its shift to a new distribution network.

In popular discourse, digitalization is often presented as a form of liberation. Thanks to digital platforms, everyone can access information easily and quickly, communicate without limits, and create their own stories. However, as Mosco (2009) points out, communication technologies are never neutral tools independent of social relations; they emerge within economic, political, and ideological processes and serve to perpetuate those processes. Consequently, the spread of the Internet is also subject to this rule.

The process of digitalization has not only changed forms of communication but has also restructured the economic foundation of cultural production. To understand this restructuring, we must examine how capitalism itself has undergone a structural transformation. Christian Fuchs (2023) refers to this transformation as "digital capitalism." In digital capitalism, communication technologies are no longer on the periphery of economic value creation, but are now at its very center. In this structure, information, communication, and data are not merely cultural resources; they are the raw ma-

terials from which economic value is actually generated. Fuchs's contribution deepens the Frankfurt School's critique of the culture industry. In the cultural industry, the process of cultural production, which operates according to an industrial logic, has taken on a more inclusive form thanks to digital technologies, as Fuchs notes. Now, it is not just cultural products, but also user activities, online behaviors, and even attention itself that are part of the production of economic value (Fuchs, 2023).

Fuchs (2020) states that, in addition to serving as vehicles for the transmission of information, communication tools also function as means of production in their own right. While economic value is generated in factories under industrial capitalism, under digital capitalism it is generated by communication infrastructures, data centers, and platforms. This shift in perspective deserves careful consideration. If communication is a means of production, then every instance of communication, a message, a "like," a view, is potentially an economic transaction. In this context, as noted at the beginning of this section, it can be said that the most striking consequence of digitalization is the blurring of the line between producer and consumer.

In the traditional media industry, studios produce content, audiences consume it; broadcasters air it, and listeners tune in. In the digital environment, however, users are both consumers and producers at the same time. A social media post, a video, or a blog post is part of cultural production, and all of them are created by users. At first glance, this creates the impression that cultural production has become more democratic. However, according to Fuchs (2023), users' "participation" in content creation is actually an indication of a new form of exploitation. Every piece of content produced, every piece of data stored, and every minute spent generates economic value. Therefore, it would not be wrong to say that the culture industry is now a structure built not only on professional media organizations but also on the unpaid labor of millions of users. It is also important to emphasize the following point here: The economic logic criticized by the Frankfurt School has not disappeared; on the contrary, it has taken on an invisible but more widespread form. Consumers no longer merely consume; they bear the cost of the production process without even realizing it.

A similar transformation is taking place at the circulation level as well. In the traditional media system, distribution is controlled by specific institutions such as publishers and television channels. These institutions act as

gatekeepers who decide what content will be visible. In the digital environment, however, this role is now assumed by network technologies and platform algorithms. Cultural production is thus no longer limited to simply creating content; a piece of content's visibility, accessibility, and rate of dissemination have also become part of economic competition. Production alone is no longer sufficient; one must also be algorithmically visible. Consequently, technology companies with data-processing capabilities, not traditional media companies, are now at the center of cultural production. Companies like Google, Meta, and Amazon are not merely infrastructure providers; they are new intermediaries that regulate the production, circulation, and consumption of cultural content. The traditional architecture of the cultural industry, comprising studios, publishers, and distributors, has given way to an entirely different model of cultural production organized by these platforms. In conclusion, it can be said that digitalization represents not a rupture marking the end of the cultural industry, but rather a continuity in which it evolves into a new phase. The commodification of cultural production, its subordination to economic logic, and its intertwining with capital accumulation continue; what has changed is the means by which this process operates.

2.2. The Emergence of Platforms as New Cultural Mediators

The process of digitalization has both transformed the technical infrastructure of cultural production and reshaped the key actors in the cultural sphere. While the primary agents of cultural production in the traditional cultural industry were newspaper publishers, television networks, film studios, publishing houses, and music companies, today this role is increasingly being taken over by digital platforms. Platforms such as Google, YouTube, Facebook, Instagram, TikTok, Netflix, and Spotify have become not only the technological environments through which content circulates, but also key actors that shape the organization of cultural production.

This transformation can be best described using the concept of "platformization" introduced by van Dijck, Poell, and de Waal (2018). Platformization refers to the process by which social, economic, and cultural activities are increasingly organized through digital platforms. In this context, platforms are not merely passive channels mediating between users and content; rather, they function as institutional actors that regulate broad areas of social life. Digital platforms have taken over the role traditionally played by traditional media, but they have delegated this role to algorithmic calculations rather than human judgment. We must pay close attention to this process

of delegation. In the traditional media system, the institutional structures that decide which news stories will be published, which movies will be released, and which musicians will gain visibility are relatively transparent and accountable actors. In a platform society, these decisions are now made by algorithmic systems, and the logic behind how these systems operate is often opaque not only to users but also to researchers. Therefore, it is possible to say that gatekeeping in the classical sense has not disappeared, but has taken on a form that is entirely devoid of transparency.

Nick Srnicek (2017) is the scholar who has uncovered the economic logic underlying this invisibility. According to Srnicek, platform capitalism collects user activities in the form of data and transforms them into economic value. Thus, a platform is not so much a technical structure that hosts content as it is a data-driven model of capital accumulation. Viewing habits, likes, comments, shares, in other words, every action a user takes, have become the platform's economic resource. This transformation has also brought about a fundamental shift in the criteria for measuring cultural success. The value of content is no longer measured by its aesthetic quality or social impact, but rather by its click-through rate, watch time, and engagement level. This situation has a direct impact on content creators. This situation is having a direct impact on content creators. For creators, it is no longer enough simply to capture the audience's attention; they must also take into account what the platform's algorithm rewards. This is a sign that the logic of cultural production is undergoing a quiet but profound transformation. Content is now being designed not to satisfy people, but to satisfy the algorithm.

van Dijck et al. (2018) note that this process is structured around four fundamental mechanisms: data collection, commodification, curation, and user guidance. The combined operation of these four mechanisms transforms platforms into an integrated system that continuously monitors user behavior, converts this data into economic value, and pre-determines the content users will encounters. Here, the platform is more than just a mediator; it is an actor that actively generates cultural visibility. At this point, it would be enlightening to turn to the legacy of the Frankfurt School. Standardization is being reproduced in a different form, right beneath the platforms' promise of "endless variety." Platforms claim to offer their users unlimited options, but visibility is largely distributed according to the platform's economic priorities. Content that generates more engagement, in-

creases ad revenue, and keeps users on the screen longer is prioritized. Behind the facade of diversity, a selection process tightly bound to market logic is at work.

Unlike in the traditional culture industry, platform users are no longer mere consumers. Users now take on three distinct roles: producer, distributor, and evaluator. However, this multitasking does not increase the user's control over the system; rather, it has the opposite effect. Every piece of content a user creates and everything they share becomes a new input into the platform's data economy (Srnicek, 2017). This structure, which appears to be democratized, is in fact nothing more than the spreading of economic value extraction across a broader population.

Consequently, it is misleading to view platforms merely as technical innovations. They must be regarded not as neutral tools that democratize cultural production, but as institutional actors wielding significant economic and symbolic power over the cultural sphere. This is because "platformization" does not mark an era in which the culture industry has disappeared, but rather a phase in which it is being reorganized with new actors and new mechanisms. It is therefore important to understand how algorithms themselves, which lie at the heart of this reorganization, actually work.

2.3. The Concept of the Algorithmic Culture Industry

In simple terms, the word "algorithm" can be defined as a mathematical, neutral, and impersonal sequence of steps designed to solve a problem. However, in the digital cultural landscape, algorithms go far beyond this simple definition. As Gillespie (2014) notes, algorithms are now social mechanisms that regulate the flow of information, determine content visibility, and shape the user experience. In other words, an algorithm is not merely a technical tool, but also the invisible regulator of cultural circulation. The tangible traces of this regulatory power can be seen everywhere. Google's search rankings, YouTube's suggestions, Netflix's recommendation system, Spotify's playlists, TikTok's "For You" feed, and so on, these are all algorithmic decisions that determine what content users will encounter. Therefore, while traditional gatekeeping was the domain of human editors, it is fair to say that today's gatekeeping is the domain of code.

The thinker who has most aptly described this transformation is Ted Striphas (2015). According to Striphas, it is no longer possible to think of culture solely as a set of meanings produced and interpreted by humans. In the digital age, cultural practices are increasingly guided, categorized, and

organized by algorithms. Striphas refers to this phenomenon as "algorithmic culture," a term that signifies that culture is now shaped not by human will but by a partnership between humans and algorithms. When viewed from the perspective of the Frankfurt School's critique of the culture industry, Striphas's contribution is quite significant. As noted in earlier sections, the key players in cultural production within the culture industry are media organizations, publishers, and cultural industries, and these actors are relatively visible, well-known institutions. Today, however, this regulatory function has shifted to algorithmic systems. Algorithms not only rank content but also determine what content will be produced, what content will be visible, and which cultural forms will gain economic value.

Based on these observations, the concept that can be proposed is the "algorithmic culture industry", a term that refers to a new regime of cultural production in which a broad process, ranging from the production and circulation of cultural content to its visibility and consumption, is organized through data-driven algorithmic systems. This concept does not disregard the Frankfurt School's fundamental assumptions, such as the subordination of culture to economic rationality, standardization, and the production of consent, but rather updates these assumptions by applying them to the conditions of digital capitalism.

The most defining characteristic of the algorithmic culture industry is that cultural visibility is no longer determined by editorial judgment but by data-driven metrics. Click-through rates, engagement levels, watch times, and user behavior patterns have become the new arbiters of cultural circulation. As Bucher (2018) points out, algorithms are thus the new gatekeepers who decide which actors in the cultural sphere to make visible, which content to highlight, and which to quietly render invisible. It's fair to say that this new gatekeeping has also fundamentally changed the behavior of content creators. A YouTube content creator editing videos to align with the recommendation system, a journalist developing search engine optimization strategies, a social media user scheduling posts based on visibility criteria, and so on, these are concrete indicators that cultural production is now shaped by algorithmic logic. Consequently, creators must learn to communicate not with their audience, but with the ranking mechanism.

At this point, it is necessary to return to the Frankfurt School's critique of standardization. Algorithmic recommendation systems repeatedly pre-

sent similar content based on the user's past behavior; therefore, the promise of unlimited diversity offered by digital platforms is, in fact, an illusion. What we see here is not diversity but repetition, which constitutes the most contradictory aspect of the algorithmic culture industry. The apparent neutrality of these systems is also worth questioning. As Crawford (2021) emphasizes, artificial intelligence and algorithmic systems are not neutral technologies independent of social relations; they are built upon specific economic interests, institutional priorities, and datasets. Therefore, the impact of algorithms on the cultural sphere is not a technical issue; it is an economic and political one.

In conclusion, the concept of the algorithmic culture industry indicates that the culture industry has not come to an end but, on the contrary, has been reorganized under the conditions of digital capitalism. Cultural visibility, circulation, and economic value are now determined through algorithmic systems. However, the final stage of this transformation has not yet been completed; today, algorithms do more than simply rank content, they also participate directly in content production. In this context, the next section will examine the effects of generative AI systems on cultural production.

3. Generative Artificial Intelligence and the Automation of Cultural Production

In the previous section, we discussed how algorithms regulate the circulation of culture and how they determine which content will be visible. However, there is a limit to this debate: the algorithm selects, and humans create. Today, even this limit is being eroded. Algorithms no longer merely select content; they also generate text, images, music, and video. In this context, this section examines the blurring of this final boundary and how generative AI is automating cultural production.

3.1. What Is Generative Artificial Intelligence?

Generative artificial intelligence (generative AI) is an umbrella term that describes systems that generate new content by learning from existing data. A common feature of these systems is that they are based on a "foundation model" architecture, comprising neural networks that are pre-trained on massive datasets and can then be adapted to a wide variety of tasks, as conceptualized by Bommasani et al. (2021) in their Stanford report. The critical point emphasized by Bommasani and colleagues is that these models have evolved from being specific to a single task to becoming a fundamental capability. In other words, a language model can translate, write poetry, and generate code, because what it learns is not a specific task, but the statistical

structure of language itself. This structure is embodied in three main streams. Large language models (LLMs) are trained on text data to perform tasks involving language generation and comprehension. Visual generation models, particularly systems based on diffusion architecture, generate new images by converting text into visuals. Video production models, on the other hand, combine these two capabilities to create dynamic visual content that unfolds over time. The underlying logic of all three is to identify statistical patterns in the behavior of millions of people and transform these patterns into new combinations (Bommasani et al., 2021).

At this point, it is important to recall the argument presented in the previous section. Striphas's (2015) concept of algorithmic culture has demonstrated that algorithms serve the function of cultural classification and circulation. It is fair to say that generative AI takes this function a step further. Content that is now categorized and distributed no longer has to be created by humans; the content itself is also the product of an algorithmic process. The classic production chain of the cultural industry, comprising the human creator, the institutional intermediary, and the consumer, is undergoing a fundamental transformation here; the human creator may be replaced by a model distilled from human production.

3.2. Automation of Text Generation

The automation of text generation has provided concrete examples in the field of journalism. Diakopoulos's (2019) comprehensive study shows how this automation has permeated every stage of the journalism workflow, from data mining to automated content generation, and from news bots to distribution algorithms. One of Diakopoulos's key points is that this process has given rise to hybrid forms of journalism rather than completely replacing human journalists. This is a new model of collaboration in which humans and algorithms reinforce one another. However, Diakopoulos (2019, p. 207) also emphasizes that algorithms have now become a significant force in news production and that this power must be transparent in terms of accountability.

With the widespread adoption of large language models such as ChatGPT, Claude, and Gemini, this automation has evolved from specialized systems used only by major media organizations into general-purpose tools accessible to everyone. The significance of this change should not be underestimated; now, a blogger, a student, or a small business owner can produce a news article, an article draft, or editorial content in a matter of seconds.

Automation has shifted from the hands of corporate monopolies to a decentralized capacity, but this decentralization does not mean that the economic power behind automation has become decentralized; the companies operating the model retain their central positions. It is fair to say that this development has had a striking impact on the concept of authorship. An experimental study by Henestrosa, Greving, and Kimmerle (2023, pp. 4-6) showed that when readers compared scientific news articles labeled as having been written by AI with those written by human authors, their perception of credibility did not decrease, contrary to expectations. This finding raises the following question: If readers do not perceive a difference in credibility between AI-generated writing and human-generated writing, on what basis will we determine the value of writing? The answer most likely lies not in the quality of the content, but in the symbolic authority attributed to the author's identity, which brings to mind Foucault's (1969/1977) discussion of the "author function."

In the field of editing, automation takes on a different form. Traditional editing involves human judgment, deciding whether a text is worthy of publication, refining its language, and shaping its content. Large language models have become capable of handling certain aspects of this decision, such as correcting grammar, adjusting tone, and offering structural suggestions. However, the most critical aspect of the editorial decision, namely, "what is worth publishing", remains an economic and organizational decision; the model does not make this decision, but rather produces content optimized for it. What we see here is not the complete disappearance of human labor, but a redefinition of what kind of labor is considered valuable.

In the context of journalism, this redefinition also has political dimensions. According to the authors, if news production is becoming increasingly algorithmic, the reliability and pluralism of public information are also falling into the hands of algorithmic decisions and the companies that determine those decisions. It can be said that this is the most concrete manifestation in the field of journalism of the concept of the algorithmic culture industry discussed in the second chapter.

3.3. Automation of Visual and Artistic Production

Visual generation models such as Midjourney, DALL-E, and Stable Diffusion open up a different sphere of discussion from text-based automation, as visual art has historically been much more closely associated with the concepts of originality and individual expression. Zhou and Lee's (2024)

comprehensive study of more than four million digital artworks empirically tests this association. Zhou and Lee's (2024) comprehensive study of more than four million digital artworks empirically tests this correlation. The findings show that generative AI increases artist productivity by 25 percent and raises the likelihood of a work being liked by 50 percent; however, it was also found that average visual originality has been steadily declining (Zhou & Lee, 2024, pp. 3-5). It can be said that this finding provides significant empirical support for the standardization argument discussed in Chapter 1. According to Adorno's (1991, p. 85) concept of "pseudo-individualization," the culture industry creates the illusion of diversity by presenting similar products as if they were different. Zhou and Lee's data also demonstrate a digital version of this mechanism. While originality at the top (the most creative individual works) is increasing, average originality is declining. This situation demonstrates that while the system accommodates individual flashes of brilliance, it leads to homogenization on a mass scale.

The economic reality underlying this homogenization is directly linked to the question of how artists' labor is devalued. The comprehensive social media analysis conducted by Jiang and colleagues (2023) documents the concrete harms experienced by artists in the face of these visual production models, including loss of reputation, loss of economic income, plagiarism, and copyright infringement (Jiang et al., 2023, pp. 365-368). The common thread running through these instances of harm is that the artist's visual "handwriting", in other words, their distinctive style, color palette, and compositional approach, which they have developed over the years, is transformed into training data for a model without their consent.

Here, we must return to Walter Benjamin's (1936/2008) discussion of aura. Even as Benjamin's mechanical reproduction threatens the existence of the original work, it preserves a reference to who produced the original work and when. Generative visual models also blur this reference. An image generated by a model in the "Van Gogh style" is not a copy of any single work by Van Gogh; it is a statistical distillation of thousands of works. This goes beyond the decline of the aura as Benjamin envisioned it; it means that the artist's identity itself is reduced to a stylistic parameter.

Artists' reactions to this situation are not one-dimensional. An analysis published in the Harvard Law Review (2025) shows that the creative community is caught in a "double bind", on the one hand, the desire to benefit from the increased productivity offered by AI tools, and on the other, the

concern that these tools threaten their own labor and originality. Examples drawn from comedians and choreographers show that certain art forms, such as live performance and improvisation, which require "humanity," remain relatively protected from AI, whereas objectifiable forms like visual art and music benefit less from this protection (Harvard Law Review, 2025).

3.4. The Role of Human Labor in Cultural Production

With the advent of artificial intelligence in human life, one of the most important questions being discussed is: "Is artificial intelligence eliminating human labor, or is it reorganizing it?" This question raises economic and political implications. In their work titled *"Ghost Work"*, Mary Gray and Siddharth Suri (2019) highlight the following point: "The great paradox of automation is that the desire to eliminate human labor always ends up creating new tasks for people" (Gray & Suri, 2019, p. xxii). This paradox clarifies the answer to the question we asked. Artificial intelligence does not eliminate human labor; rather, it renders it invisible and reposition it.

Gray and Suri's field research shows that wherever generative AI systems appear to be "autonomous," there are in fact millions of invisible workers engaged in data labeling, content moderation, and error correction. Authors refer to this as the "last-mile paradox of automation." As machines advance, they solve problems that previously only humans could solve; however, with each solution, a new problem, a new "last mile", emerges, and it is human labor that fills this last mile (Gray & Suri, 2019, p. 176). When applied to the context of cultural production, this paradox works as follows: The "creativity" of a visual production model actually relies on an invisible layer of labor that labels the model's training data, adjusts the model's outputs according to human preferences (RLHF), and corrects the model's errors.

Steinhoff (2021) expands on the theoretical framework of this invisibility through a Marxist analysis. Steinhoff critiques the "immaterial labor" thesis, which posits that digital labor has become autonomous from capital, and demonstrates that digital labor in the artificial intelligence industry remains under the control of capital. According to Steinhoff's field-based analysis, although the production process of machine learning software appears to be highly automated, it actually relies on the organization of labor in an increasingly fragmented, controlled, and invisible manner. Based on this finding, it can be argued that artificial intelligence is reorganizing human labor, but this reorganization works in favor of capital, not labor.

Mantegna's (2024) analysis, published in the Yale Law Journal Forum, which complements this economic policy picture on a legal level, demonstrates why copyright law has failed to address this reorganization. The concept that Mantegna refers to as "ouroboros copyright", which could be described as "copyright poisoning", suggests that the uncertainty surrounding whether an AI model has been trained on copyrighted data exposes all derivative works to legal risk in a chain reaction (Mantegna, 2024). Another important point Mantegna emphasizes is the unjust hierarchy between "ghost work" and copyright-protected creative labor. The contribution of data labelers who train an AI model is considered less valuable than that of an artist; however, as OpenAI itself states, just as these models would be useless without copyrighted material, they would also be useless without the labor of data workers. This situation results in copyright law rewarding large corporations' ability to manage legal uncertainty rather than protecting artists (Mantegna, 2024, pp. 1160-1166).

Given the points discussed above, it is possible to say that human labor has not disappeared from cultural production; rather, it has entered a process of redistribution, having lost its visibility, value, and bargaining power. The labor involved in data labeling, content moderation, and correcting a model's outputs is genuine labor, yet it is a low-wage, precarious form of labor that has been invisibly separated from the "creative" aspect of cultural production. In contrast, everything, including visuals, text, music, and so on, that the model produces "on its own" and that is presented as the true creative value is nothing more than a structure built upon this invisible labor.

From the perspective of the Frankfurt School, the core of the critique of the culture industry lies in capitalism's subordination of cultural production to its own economic logic. It is possible to say that generative artificial intelligence is the latest and most profound form of this naturalization. Not only are cultural products being commodified, but cultural production itself, in other words, human creativity in its raw form, is being reduced to a data source or an educational input. In this context, the next section will examine how this deepening trend reproduces classic concepts of the culture industry, such as standardization, pseudo-individualization, and quantitative explosion, in new forms.

4. Is Artificial Intelligence a New Cultural Industry?

In previous chapters, the concept of the culture industry, the development of digital capitalism, and the impact of generative artificial intelligence

on cultural production processes were addressed separately. In this chapter, these discussions will be brought together to explore whether artificial intelligence can be considered a new phase in the culture industry.

The Frankfurt School's critique of the culture industry is based on the standardization and commodification of cultural production according to the logic of the capitalist market, and on the presentation of a false sense of freedom of choice to individuals. Today, these processes operate not only through traditional media organizations but also through platforms, algorithms, and generative AI systems. For this reason, AI can be viewed not as a technology that eliminates the cultural industry, but as a new form of production that elevates it to a data-driven, algorithmic, and automated level.

In this section, the effects of artificial intelligence on cultural production will be discussed along three main axes: algorithmic standardization, algorithmic pseudo-individualization, and the transformation of creative labor. In this way, we will seek to demonstrate that generative artificial intelligence is not merely a technical tool for producing new content, but rather an economic-political structure that reorganizes the logic of the cultural industry's operations.

4.1. Algorithmic Standardization: The Homogenization of Cultural Production

One of the key concepts at the heart of the Frankfurt School's critique of the culture industry is "standardization." According to Adorno and Horkheimer (2014), the culture industry produces cultural products that, despite appearing different and unique, are largely similar to one another. In this context, the apparent diversity of cultural products is, in reality, nothing more than the presentation of standardized content in different forms. As discussed in previous sections, under the conditions of digital capitalism and the algorithmic culture industry, this trend toward standardization has not disappeared; on the contrary, it has taken on a more complex form through algorithms and generative artificial intelligence systems.

Today, the circulation of cultural content is largely governed by recommendation systems and algorithmic ranking mechanisms. Netflix, Spotify, YouTube, TikTok, and similar platforms determine what content users will see by analyzing their past behavior. At first glance, it appears that these systems offer users a more diverse and personalized cultural experience. However, recent research shows that, rather than increasing cultural diversity in the long term, algorithmic recommendation systems may actually reinforce the circulation of similar content.

Chaney, Stewart, and Engelhardt (2018, p. 224) argue that recommendation systems not only reflect user preferences but also shape them. According to the authors, algorithms generate new recommendations by observing user behavior, and users, in turn, develop new preferences based on these recommendations. This creates a feedback loop between algorithms and user behavior. Researchers note that this process increases the homogenization of user behavior over time, which can reduce the effectiveness of recommendation systems. In other words, even if users initially have different interests, they may gradually begin to gravitate toward similar content under the influence of algorithmic recommendations.

Similarly, Holtz et al. (2020) demonstrate that while personalized recommendation systems increase user engagement, they can also limit cultural diversity. According to the researchers, algorithmic recommendations are quite successful at capturing users' interest, but this success often relies on recommending products similar to content users have consumed in the past. As a result, individuals are exposed to repetitions of their past preferences rather than encountering different aesthetic experiences. This situation leads to cultural consumption becoming an increasingly closed and predictable structure.

The Frankfurt School's critique of standardization becomes particularly relevant at this very point. The thesis on standardization developed by Adorno and Horkheimer regarding cinema, radio, and popular music is being reproduced today through algorithmic systems. Although the form of cultural products has changed, the underlying logic has remained largely the same. The system circulates the content that can hold users' attention the longest and has the highest economic value. Thus, algorithms have become economic mechanisms that constantly reproduce specific forms of content, rather than neutral tools that promote cultural diversity.

This process is even more pronounced in generative AI systems. Large language models, visual generation systems, and other generative AI applications are trained on billions of data examples. When these systems generate new content, they often draw on the most common patterns found in the training data. Consequently, even though they technically have the capacity to generate an infinite number of pieces of content, the content they produce frequently reproduces similar narrative structures, aesthetic patterns, and discursive forms.

Gaw's (2022) study on Netflix also demonstrates that algorithms do not merely reflect cultural preferences but actively shape them. The author states that platform algorithms steer users' cultural preferences in a data-driven manner and increase the visibility of certain content. Thus, algorithms function as the new gatekeepers of the cultural sphere and determine which content enters circulation. This situation indicates that cultural production is increasingly being shaped in accordance with the economic logic of the platform.

Studies conducted in recent years also indicate that AI-supported cultural production may increase concentration within creative ecosystems. According to Zhang and Zhang (2026), while AI systems boost productivity, they can also exacerbate inequalities in visibility and lead to certain types of content gaining a more advantageous position within the platform economy. While this situation creates a quantitative increase in cultural production, it may prevent qualitative diversity from increasing to the same extent.

As a result, while generative AI systems create new possibilities in the field of cultural production, they also bring with them a strong tendency toward homogenization due to their algorithmic logic. The Frankfurt School's critique of standardization in the culture industry remains valid in the age of artificial intelligence. However, today standardization is no longer produced solely by the culture industry; it is also generated by algorithms, recommendation systems, and generative AI models. For this reason, it is possible to view AI-supported cultural production as a new, algorithmically deepened phase of the culture industry.

4.2. The Algorithmic Form of Pseudo-Individualization

One of the Frankfurt School's most significant criticisms of the culture industry is that standardization is concealed under the guise of individuality. Adorno explains this phenomenon with the concept of "pseudo-individualization." According to him, the culture industry presents cultural products, which are fundamentally similar, as if they were choices and differences specific to each individual. Thus, while individuals believe they are making free choices, they are in fact navigating among predetermined options (Adorno, 1991, pp. 32-38).

In the age of digital capitalism and artificial intelligence, this process has taken on a new form. Today, the content offered to individuals is no longer curated through radio programs or television broadcasts but rather through

personalization algorithms, recommendation systems, and generative AI applications. However, the "personalized experience", he fundamental promise of these Technologies, often produces a form of algorithmic pseudo-personalization rather than true individualization.

According to Aguirre et al. (2015, pp. 35-36), the primary goal of personalization is to "deliver the right content to the right person at the right time." This approach is based on the claim that it creates a more efficient and personalized digital experience that better meets users' needs. However, the authors note that personalization processes rely on intensive data collection activities and that users are often not fully aware of these processes. In other words, personalization involves not only the expansion of individual freedom but also the continuous monitoring and analysis of user behavior.

At this point, the concept of "mass personalization" developed by Kotras (2020) offers an important explanation. According to Kotras, the fundamental paradox of today's algorithmic systems is that they involve both personalization and generalization processes at the same time. In the author's words, personalization "is never about just one person; it always involves generalization" (Kotras, 2020, p. 2). This is because algorithms evaluate individuals not as unique and distinct subjects, but as members of data sets that exhibit similar behavioral patterns. Therefore, the recommendations presented to users as "tailored just for you" are, in reality, the result of statistical models derived from the behavior of millions of users. The movie recommendations, news feeds, ads, or playlists that users see are based more on algorithmic similarity calculations than on individual preferences. For this reason, it can be said that the discourse of personalization does not signify the strengthening of individuality, but rather the redefinition of individuality within data categories.

Kotras (2020, pp. 3-4) notes that the way algorithmic systems identify consumers has also changed. While traditional marketing approaches categorize individuals based on demographic criteria, today's predictive algorithms transform individuals into data profiles whose future behaviors can be predicted. Thus, rather than being a subject with specific preferences, the individual becomes a data object whose potential behaviors can be calculated in advance.

This transformation further highlights the Frankfurt School's thesis on false individualization. In the classical model of the cultural industry, indi-

viduals believe they are choosing among standardized products. In the algorithmic culture industry, however, individuals encounter content they believe was produced specifically for them. Yet in both cases, while individuality appears to be preserved, standardized patterns of preference are actually being reproduced.

Pajkovic (2022) emphasizes that algorithms have become "new cultural intermediaries" today. Critics, editors, and publishers, who have traditionally served as cultural intermediaries, are increasingly being replaced by algorithmic systems. Algorithms do not merely rank cultural content; they also make decisions about what is valuable, what is popular, and what will be visible. As a result, individuals' cultural preferences are increasingly being shaped by algorithmic systems.

This process is also giving rise to a new form of addiction. Faced with an abundance of content, users are increasingly relying on algorithmic recommendations to help them make choices. We must also not overlook the fact that the convenience offered by algorithms can also narrow users' cultural horizons. This is because recommendation systems often direct individuals toward content similar to what they have consumed before, thereby limiting their chances of encountering different cultural experiences.

In conclusion, it can be said that in the age of artificial intelligence, pseudo-individualization has not disappeared; rather, it has been reorganized algorithmically. Although algorithmic personalization systems claim to offer individuals greater freedom of choice, this freedom is largely based on data-driven classifications and statistical predictions. While users believe they are having a unique digital experience, they are actually encountering standardized cultural experiences derived from the behavior of millions of users. For this reason, algorithmic personalization can be viewed as a new manifestation of the Frankfurt School's thesis on false individualization under the conditions of digital capitalism.

4.3. Is Quantitative Expansion Equivalent to Qualitative Contraction?

One of the most striking transformations brought about by generative AI technologies in the field of cultural production is the extraordinary increase in content-creation capacity. Text, images, video, and audio can now be produced in a matter of seconds, and individuals and organizations can create large amounts of content at very low costs. At first glance, this development appears to be positive in terms of the democratization of cultural production and the increase in cultural diversity. While historically access to

the means of cultural production has been under the control of certain institutions and professional actors, generative artificial intelligence is significantly expanding access to these means. However, it is debatable whether the quantitative increase in content production translates into qualitative diversity.

The AI Index Report 2026, published by Stanford University's Institute for Human-Centered Artificial Intelligence, shows that generative AI has become one of the fastest-adopted technologies in history. According to the report, generative AI tools have become widely adopted on a global scale in just three years, faster than personal computers or the internet, and their usage rates among the general population have reached approximately 53% (Stanford HAI, 2026, p. 10). This situation points to a historic expansion in the scale of cultural content production. In other words, in the age of artificial intelligence, the technical barriers to cultural production have been significantly reduced, and content creation has partially moved beyond the monopoly of professional institutions to reach a broader range of users. However, from the perspective of the Frankfurt School's approach to the culture industry, the main issue is not so much the quantity of content produced as the quality of that content and its social functions. Today, generative AI systems are taking the mass-production logic of the cultural industry to a new level. This is because AI automates not only the distribution of cultural content but also its direct production. Thus, while quantitative growth is occurring in cultural production processes, new questions are arising regarding the originality and diversity of content.

In fact, recent studies show that an increase in the amount of content does not automatically lead to greater cultural diversity. According to Zhang and Zhang (2026, pp. 2-9), AI-supported cultural production systems can, on the one hand, increase efficiency and production capacity, while on the other hand, they can reinforce concentration and inequalities within creative ecosystems. Researchers argue that artificial intelligence technologies have the potential to reinforce "winner-takes-all" dynamics in the field of cultural production. It is possible to say that this situation could lead to certain types of content, platforms, and creators gaining an advantage in terms of visibility, even in an environment where content production appears to be limitless.

Similarly, as discussed in the previous section, algorithmic recommendation systems determine the content users will encounter and significantly

influence cultural circulation. Therefore, the production of millions of new pieces of content does not mean that all of them will be equally visible. On the contrary, algorithms tend to prioritize content that has high economic value, generates more engagement, or aligns with the platforms' commercial interests. In conclusion, while there has been a quantitative expansion in cultural production, it can be said that cultural visibility has increasingly come to center around a narrower pool of content. This phenomenon is also observed in the field of knowledge production. According to Arzilli et al. (2025, p. 3), generative artificial intelligence significantly accelerates the production of academic and scientific content, but at the same time leads to a new information overload phenomenon known as the "AI-driven infodemic." According to the authors, AI-powered systems are capable of generating vast amounts of information; however, the accuracy, reliability, and originality of this information cannot always be guaranteed (Arzilli et al., 2025, pp. 3-4). In other words, an increase in the quantity of information does not always correspond to an increase in its quality.

When viewed in the context of the Frankfurt School's critique of the culture industry, the quantitative expansion in cultural production brought about by generative artificial intelligence gives rise to a paradoxical situation. On the one hand, the means of cultural production are becoming more democratic, and more individuals are becoming content creators. On the other hand, cultural diversity is not expanding to the same extent due to algorithmic visibility mechanisms, economic concentration, and the standardizing effects of recommendation systems. Consequently, it becomes difficult to establish a direct link between the abundance of content and cultural diversity.

In conclusion, it would not be wrong to say that, in the age of generative artificial intelligence, cultural production has experienced a quantitative expansion unprecedented in history. However, this expansion does not mean that qualitative diversity and cultural pluralism have increased to the same extent. On the contrary, in the context of the algorithmic culture industry, an abundance of content can lead to the more intensive reproduction of certain aesthetic patterns, narrative forms, and cultural preferences. Therefore, it can be argued that the fundamental issue in the age of artificial intelligence is not so much how much content is produced, but rather which content becomes visible and how cultural diversity can be preserved.

4.4. Artificial Intelligence and the Future of the Cultural Industry

The widespread adoption of generative AI technologies signals a historic turning point in cultural production processes. However, this transformation does not mark the end of the culture industry, as some technological discourses claim; on the contrary, it indicates that the culture industry is evolving into a new historical phase. The discussions addressed in this study demonstrate that the Frankfurt School's fundamental critiques of the culture industry remain largely valid even in the age of artificial intelligence. The processes of standardization, pseudo-individualization, and the commodification of culture have not disappeared; on the contrary, they have been restructured through algorithms, data infrastructures, and generative artificial intelligence systems.

During the era of the traditional culture industry, cultural production was largely controlled by media organizations, film studios, publishing houses, and publishers. Today, however, this role is increasingly being taken over by digital platforms and artificial intelligence systems. As Gaw (2022, pp. 717-719) also notes, algorithms are not merely technical tools that reflect user preferences; they are also active agents that shape cultural preferences and regulate cultural circulation. Similarly, Pajkovic (2022) argues that algorithms have become new cultural mediators and are playing an increasingly decisive role in the formation of cultural values. This suggests that, in the future of the cultural industry, algorithmic systems will increasingly replace human editors, critics, and traditional cultural mediation mechanisms. However, one of the most significant impacts of artificial intelligence on the future of the cultural industry is the direct automation of cultural production. As discussed in previous sections, large language models, visual production systems, and video production tools are capable of generating content across a very broad spectrum, from news articles to works of art, and from advertising content to academic texts. This situation reduces the costs of cultural production and speeds up production processes. However, it also gives rise to serious debates about the future of creative labor.

According to Kyi et al. (2025, pp. 5-7), the use of creative professionals' works, often without their explicit consent, in the training of generative AI systems is leading to the emergence of new forms of exploitation in the field of cultural production. Similarly, Amankwah-Amoah et al. (2024, pp. 3-5) note that generative artificial intelligence could increase job insecurity in the

creative industries and significantly transform the working conditions of creative professionals. Therefore, the future of the cultural industry must be assessed not only in terms of technological innovations but also in terms of labor processes and power relations.

The future of AI-driven cultural production also raises important debates regarding cultural diversity. As discussed in previous sections, algorithmic recommendation systems and generative AI models can, on the one hand, expand the possibilities for cultural production, while on the other hand, they can also reinforce trends toward cultural homogenization. For this reason, it is difficult to assume that the quantitative increase in cultural content production will lead to a corresponding expansion of cultural pluralism. On the contrary, cultural visibility is increasingly determined by a growing number of global platforms and algorithmic infrastructures; which content will be produced, circulated, and gain public visibility is shaped through these systems. However, evaluating the impact of artificial intelligence on the future of the cultural industry solely from a negative perspective would also be an incomplete approach. Generative AI technologies are expanding access to tools for cultural production, reducing the costs of content creation, and enabling the emergence of new forms of creative expression. Consequently, AI offers significant opportunities for the democratization of cultural production. However, whether these opportunities translate into social benefits depends not so much on the technology itself as on the legal and ethical frameworks within which AI will be regulated, how creative labor will be protected, and to what extent algorithmic systems can be monitored in a transparent and democratic manner.

In conclusion, artificial intelligence does not mark the end of the cultural industry, but rather represents a historical phase in which it is being reorganized under the conditions of digital capitalism. This study demonstrates that the Frankfurt School's critiques of standardization, false individualization, and the commodification of culture retain strong explanatory power even in the age of generative artificial intelligence. That said, it would not be wrong to say that today's cultural industry has evolved into a multilayered structure shaped not only by traditional media institutions but also by algorithmic infrastructures, platform economies, and generative artificial intelligence systems.

Conclusion

This study examines the transformation brought about by generative AI technologies in the field of cultural production within the framework of the Frankfurt School's critique of the culture industry. The starting point of this study is the assumption that it is insufficient to view artificial intelligence merely as a technical innovation or a tool for increasing efficiency in cultural production processes. This is because the automation of cultural production signifies much more than a simple technological change in content production processes. This transformation entails a restructuring of the economic and ideological relationships that govern the processes of production, circulation, and consumption of culture.

The study first examines the Frankfurt School's concept of the "culture industry"; it demonstrates that culture has been transformed into a sphere of production that is standardized, commodified, and subjected to market logic within capitalist relations of production. The discussion then turned to how, under the conditions of digital capitalism, cultural production is being reorganized through platforms, data streams, and algorithms. It was demonstrated that, in this process, algorithmic systems and digital platforms are increasingly replacing the traditional actors in the cultral sphere, editors, publishers, and media organizations.

The rise of generative AI systems represents a new and more advanced stage of this transformation. Large language models, visual generation systems, and other generative AI applications are automating not only the circulation of cultural content but also its direct production. However, the study shows that artificial intelligence does not completely eliminate human labor; on the contrary, it reorganizes creative labor, renders it invisible, and gives rise to new forms of exploitation. Human creativity is increasingly being transformed into training data for artificial intelligence models, while the economic value of cultural labor is being redefined within the framework of new power dynamics.

One of the study's most fundamental findings is that the Frankfurt School's concepts of standardization and false individualization retain their explanatory power in the age of artificial intelligence. Although algorithmic recommendation systems and generative AI applications claim to offer individuals a personalized and diverse cultural experience, they often lead to the reproduction of similar aesthetic forms, narrative patterns, and cultural preferences. Therefore, the quantitative expansion in cultural production does

not always translate into qualitative diversity. In this context, the study argues that the culture industry has not disappeared today; on the contrary, it has evolved into a new historical phase that is data-driven, algorithmic, and largely automated. This new phase is explained in the study through the concept of the "algorithmic culture industry." The algorithmic culture industry refers to a new regime of cultural production in which processes ranging from the production and distribution of cultural content to its visibility and consumption are organized by algorithms, platforms, and artificial intelligence systems.

In conclusion, it can be said that artificial intelligence should be viewed not as a harbinger of the end of the cultural industry, but rather as a harbinger of a period in which cultural production is being reorganized more deeply in accordance with capitalist logic. For this reason, future research must focus not only on the technical capabilities of artificial intelligence technologies, but also on ownership relationships, labor processes, their impact on cultural diversity, and the potential consequences for the democratic public sphere.

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A THEORETICAL EXPLORATION OF HUMAN–MACHINE COMMUNICATION

Hülya Anakız ERTÜRK*

Introduction

With the advancement of communication technologies, communication practices have also undergone changes. According to Bilgin, developments in artificial intelligence Technologies which acquire social characteristics through interaction with humans have brought about a transformation and a rupture in the fundamental communication paradigm that defines communication solely as the transfer of meaning between people (2021:203).

With advances in artificial intelligence technologies, the concept of human-machine communication has become one of the major topics of discussion in the modern world. Human-machine communication refers to the communication that people engage in with mechanical devices. However, human–machine communication goes beyond the exchange of messages between a person and a mechanical device; it encompasses a broad process that ranges from the generation of messages to the resulting outputs, and from the interpretation of these outputs to the derivation of meaning from them.

Furthermore, factors such as the human roles attributed to machines and the reactions these machines elicit are among the fundamental elements of human–machine communication. Robots, computers, chatbots, and artificial intelligence systems in other words, mechanical entities have begun to be regarded as active participants in the communication process, going beyond their role as mere intermediaries.

The social cues provided by mechanical Technologies in other words, the meanings they generate through language can exhibit human-like characteristics. The fact that these characteristics do not actually belong to humans does not prevent individuals from exhibiting human-like responses. As stated by Edwards and Edwards, who are cited in the text, even when it is

* Asst. Prof. Niğde Ömer Halisdemir University, Faculty of Communication, Department of Public Relations and Advertising, hulyaerturk@ohu.edu.tr, ORCID ID:0000-0001-5447-7603

known that the "digital interlocutor" is not a real human being but a mechanical entity, people are still capable of exhibiting genuine social responses toward this entity.

It goes beyond the human characteristics of machines and stems from human perceptions. The CASA paradigm, the Media Equation approach which is synonymous with this paradigm but encompasses a broader range and the concept of anthropomorphism also provide an important theoretical framework for explaining the social nature of the communication that people establish with machines.

This study first addresses the conceptual foundations of human–machine communication. It then examines how individuals perceive machines and why they exhibit social responses toward them, within the framework of relevant theoretical approaches. Furthermore, the study offers recommendations for future research on artificial intelligence.

1. Human–Machine Communication: A Conceptual Framework

It is difficult to accept that communication practices originated from a single source; on the contrary, the history of communication is interpreted through numerous "origin stories" that span different regions and intellectual traditions (Mann, 2023, s. 29). Communication studies have a multifaceted history, ranging from rhetoric to semiotics, and from cybernetics to cultural practices. This situation illustrates the relationship the field has established with various disciplines over the course of history. At the same time, communication is evolving in response to technological advancements, and these changes are reflected in communication practices. With the advancement of artificial intelligence technologies, human–machine communication has gained momentum and has become one of the current research topics in the literature.

In the literature, three fundamental elements human, machine, and communication come to the fore in the conceptualization of human-machine communication. When examining definitions of human-machine communication, Guzman (2018:3) defines it as *"the creation of meaning between humans and machines and the examination of this meaning-making process and its associated elements.",* It is also a form of communication in which humans are on one side and machines or digital interlocutors are on the other (Edwards and Edwards, 2017: 487).

Mann (2023:30), in discussing human-machine communication, draws particular attention to its two-way nature, especially as it involves feedback. From this perspective, communication is described not merely as a linear transmission from a source to a receiver, but as a cyclical process in which the parties can respond to each other's actions and messages.

Human–machine communication focuses on various aspects of human interactions with technologies designed specifically as communicative agents (i.e., algorithms, etc.) (Spence, 2019: 286). In other words, human–machine communication is a field of study that examines how people interact with technologies designed to enable such interactions.

Etzrod and his colleagues (2022:439–441) also developed the HMC human-machine communication model, drawing on the work of theorists such as Guzman, Edwards, and Edwards. The researchers first sought to answer the question of what communication is, and the authors defined communication as the sharing of something between at least two entities; they then adapted this general definition of communication to human-machine communication.Here, one party is a human and the other is a machine; in their study, Edwards and Edwards referenced the concept of the "digital interlocutor." They then asked what the two parties identified as human and machine share the answer to this question was "messages" or "collections of symbols." The ways in which these messages are encoded, decoded, and interpreted by both humans and machines are explained. The model then notes that communication between humans and machines is not limited to the exchange of messages; rather, three distinct scenarios can arise as a result of the sharing and interpretation of messages. These, in turn, have been explained in terms of meaning-making, relationships, and social behavior. Furthermore, by situating human–machine communication within the social context at the micro, meso, and macro levels, the social conditions under which communication takes place are also incorporated into the model.

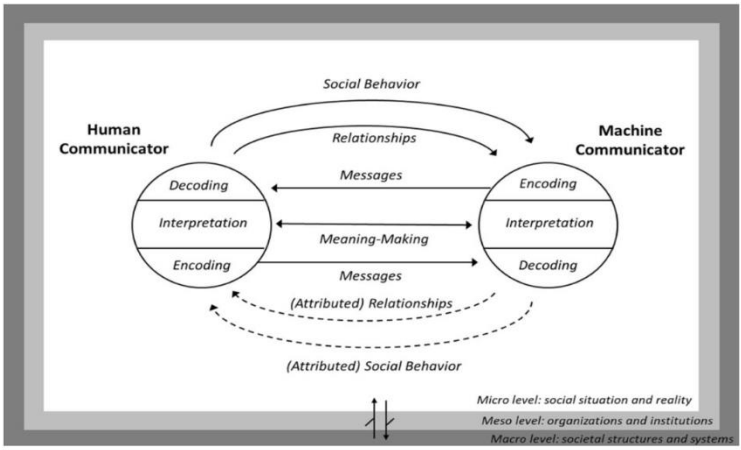


Figure 1. Model of Human-Machine Communication

Human-machine communication is a communication process that goes beyond the direct interaction between an individual and a machine. Indeed, human-machine communication extends beyond the interaction between an individual and a machine. The constant evolution and development of artificial intelligence systems, however, are making this communication process increasingly complex. Consequently, in human–machine communication, the causes and consequences of the outputs generated by these systems have also become important.While users' reactions to the technical, social, and cultural characteristics of artificial intelligence are considered first-level human–machine communication, understanding and evaluating the functioning of artificial intelligence systems is referred to as second-level human–machine communication.In other words, while a user's evaluation of a recommendation provided by artificial intelligence is considered first-level human–machine communication, the evaluation of explanations regarding the data or processes on which the artificial intelligence based that recommendation is considered second-level human–machine communication. This approach demonstrates that human–machine communication is related not only to what the machine says, but also to the user's interpretation of how and why the machine says it (Xu and Shi, 2024: 218–219).

When these approaches are evaluated as a whole, human–machine communication is not merely an interaction between humans and technological systems. It can be viewed as a multidimensional communication process that encompasses the exchange of messages, the construction of meaning,

relationships, and social behavior. Advances in artificial intelligence technologies, meanwhile, are giving rise to new debates regarding the role of machines in this process.

2. Social and Communicative Perception in Human–Machine Interaction

The first section explained the conceptual foundations of human–machine communication. This section, however, seeks to answer the questions of why individuals perceive machines as human-like and how this perception is reflected in communication processes. In this context, various theoretical approaches aimed at explaining human–machine communication have been discussed in the relevant literature. The CASA paradigm, the Media Equation approach, and the concept of anthropomorphism are among the prominent approaches for explaining how individuals perceive machines and the communication they establish with them.

The first of these approaches, the CASA (Computers Are Social Actors) paradigm, was developed by Nass, Steuer, and Tauber. Experiments were conducted, and the results were shared. According to the authors, people exhibit social responses toward computers; however, these responses do not stem from a conscious belief that computers are human or human-like. People exhibit social behavior toward computers even though they know that computers are mechanical entities. According to researchers, the reason for these social reactions is that computers possess certain human-like characteristics. Indeed, computers are mechanical entities capable of using language, generating responses based on previous inputs, assuming roles traditionally performed by humans, and producing sounds that resemble the human voice. This phenomenon has also been observed in politeness and voice experiments. In the politeness experiment, it was found that when users were asked to evaluate their own performance directly by a computer, they provided more positive responses than when they made the evaluation through an independent source. The finding shows that, even though users know that a computer does not actually possess emotions, a sense of self, or human-like motivations, they are still able to apply rules of social courtesy when interacting with it. Consequently, the CASA approach demonstrates that human–computer interaction can be viewed not merely as an instrumental relationship, but as a form of interaction that can take on social and communicative characteristics under certain conditions. However, the sound experiment revealed that participants responded to different sounds as if they were different social actors, and to the same sound as if it were the same social actor. This finding demonstrates that human-specific social

cues, such as voice and language use, play a role in the formation of perceptions of social actors (1994:72–75).

According to the results of the experiments conducted, a machine does not need to possess human-like characteristics for humans to perceive it as human. However, the limited social cues provided by the machine lead people to attribute human characteristics to it. From this perspective, the CASA paradigm imbues computers with social and communicative meaning in human–machine communication.

Nass and Moon, on the other hand, explain this situation through the concept of "mindlessness." By nature, humans are programmed by the social scripts of the society in which they live and apply the social rules they have learned through human-to-human communication to machines as well. Indeed, even though computers are not human, people can exhibit reactions toward them that are similar to the reactions they display when interacting with other people. However, there is one point that must not be overlooked here: for mindless social responses to emerge, individuals must be provided with a sufficient number of cues to enable them to categorize an object as worthy of a social response (2000: 82–83).

Following the CASA paradigm, which explains people's social reactions to computers, Reeves and Nass developed the Media Equation approach in 1996; this approach is discussed in the book titled *"The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places"*. The Media Equation is based on the idea that people's reactions to computers, television, and other media technologies can resemble their reactions to real people and the physical world. The scope of the Media Equation is quite broad; it encompasses not only technologies such as computers and virtual environments but also mass media such as television, film, and radio. The book's cover blurb includes the following statement, *"According to common belief, people never interact with a computer or a television program the way they do with another person. But is that really the case?"*. Later in this discussion, Byron Reeves and Clifford Nass, in their work "The Media Equation", strikingly reexamine this established view and convincingly demonstrate that interactions involving computers, television, and new communication technologies are identical to real social relationships and those formed in real physical spaces. What led the authors to this conclusion was a large body of psychological research; indeed, according to the findings of this research, people

treat computers, television, and new media as if they were real people and real places.

Another approach to explaining human–machine communication is anthropomorphism. According to the work of Epley and colleagues, individuals' tendency to anthropomorphize nonhuman actors depends on various factors. Among these factors are the accessibility and practicality of human-centered information, as well as individuals' motivation to become effective social actors. In addition, it has been noted that individuals who lack a sense of social connection with others are more prone to anthropomorphizing non-human actors. Anthropomorphism, in a general sense, refers to the tendency to attribute human-like characteristics, motivations, intentions, or emotions to the real or imagined behaviors of non-human actors (2007:864).

At the same time, anthropomorphism is also conceptualized as a form of human cognition that focuses on attributing human-specific mental capacities to a robot. Accordingly, perceptions regarding the robot's form and movements are considered potential precursors to anthropomorphism. The attribution of personality and moral values to the robot, on the other hand, is regarded as one of the potential consequences of anthropomorphism (Kühne ve Peter, 2023:42).

This tendency is surprisingly widespread. Indeed, people anthropomorphize a wide variety of non-human entities, ranging from computers to pets to gods. In this process, human-like abilities and mental experiences are attributed to these entities. Although anthropomorphism is a widely observed phenomenon, the factors that determine it are not well understood and have rarely been studied. One of the reasons people resort to anthropomorphism is efficacy motivation. Efficacy motivation refers to an individual's fundamental and persistent motivation to exert control over their environment. In this regard, it has been argued that people resort to anthropomorphism in order to satisfy this motivation (Waytz et al. 2010: 410).

When a general assessment is made in the context of all these approaches, the communication that people establish with machines goes beyond technological communication. People respond to machines within the framework of social norms, and their attribution of human-like characteristics to machines lays the groundwork for machines to be perceived as communicative counterparts. This situation, coupled with the development of

generative AI technologies, necessitates a reassessment of the machine's role in the communication process.

3. Artificial Intelligence as a Communicative Actor

The development of artificial intelligence technologies has also sparked new debates regarding the role of these technologies in the communication process. Guzman and Lewis (2020) examine communicative artificial intelligence through three fundamental dimensions, drawing on the framework of human–machine communication. These consist of three dimensions: functional, relational, and metaphysical. The functional dimension refers to the ways in which people interpret AI based devices and applications as communicators. The second dimension the relational dimension encompasses not only the relationships people form with these technologies but also the impact of these relationships on the individual's relationships with themselves and with others. The final dimension the metaphysical dimension also addresses the gradual blurring of ontological boundaries regarding the nature of humans, machines, and communication as artificial intelligence develops. This approach makes it possible to view artificial intelligence not merely as a technical tool that facilitates communication among humans, but as a technology with which humans communicate directly and can interpret as a communicator (2019:1).

Advances in artificial intelligence technologies have also led to a reassessment of the traditional role of machines in the communication process. In communication research, humans have long been regarded as communicators, while machines have been viewed as technologies that facilitate communication.

Lewis, Guzman, and Schmidt (2019:409), on the other hand, point out that AI-powered chatbots, social bots, and other communicative technologies are designed to function not as message channels but as message sources. The human–machine communication approach challenges this traditional distinction by having machines assume the communicator role previously attributed to humans. Thus, the discussion moves beyond the question of whether technology merely mediates communication and turns to the question of who or what can be considered a communicator.

At the same time, AI communication technologies make decisions regarding users' communications on their behalf. Users' use of AI communication technologies that operate autonomously can both enable and limit how they carry out their work and interact with others (Endacott, 2024:1).

Finally, with the development of large language models (LLMs), the role of artificial intelligence in communication has become a topic of increasing debate. The fact that LLMs can generate human-like responses and communicate directly with users has raised the question of whether these systems can be considered communicative agents. Hila (2026:1) defines LLMs as "asymmetric communicative agents" that are capable of communication but lack the intent and will found in humans. For this reason, LLMs are not considered fully-fledged social agents, but rather semi-social agents capable of influencing people and social norms through communication.

4. Recommendations for Research on Human–Machine Communication

A review of studies on artificial intelligence reveals that these studies are guiding future research; in the relevant literature, we have come across a proposal by three authors. The first of these recommendations comes from Følstad and colleagues, in this study, the researchers note that, with the increasing prevalence of chatbots, the precursors, content, and outcomes of human–machine communication need to be studied more comprehensively. In this regard, it is emphasized that future research should focus on the cognitive, emotional, and behavioral dimensions of users' interactions with these systems, as well as on differences among various individuals, groups, and usage contexts. Furthermore, it is important for future research to examine not only the effects of human–machine interaction on individual users but also its consequences at the group and societal levels (2021:2915).

The second proposal is presented by Zhou and colleagues, according to the authors, the impact of generative artificial intelligence in the field of communication is not limited to the new methods and tools used in research. Generative artificial intelligence is also becoming a direct subject of research as a communication technology that reshapes the processes of production, circulation, and interpretation. In this regard, it is noted that, in addition to the effects of generative artificial intelligence on the media and public discourse, everyday human–AI communication is also one of the key areas that requires further research. With regard to future research, it is important to develop methodological standards, conduct empirical studies that better reflect real-life conditions, and examine the societal implications of generative artificial intelligence at various levels (2026:1).

The third proposal comes from Raharjo and Z.D.R.; according to this study, the growing role of generative artificial intelligence in human–machine communication is also diversifying the research topics the field should

focus on in the future. A systematic review of the current literature on human-machine communication highlights the need for future research to increase the number of longitudinal studies, incorporate perspectives from the Global South, measure epistemic safety, and examine the long-term cognitive effects of interactions with generative artificial intelligence. This research agenda demonstrates that the future of human–machine communication must be assessed not only in terms of technological advancements but also in terms of the temporal, cultural, epistemic, and cognitive consequences of the relationships established with these technologies (2026: 45).

General Assessment

Human–machine communication is a complex process. Indeed, the encoding, interpretation, and comprehension of messages play a crucial role in this process. While people's reactions to artificial intelligence and the ways they interact with it are considered the first level of human–machine communication, the evaluation of how artificial intelligence systems operate can be regarded as the second level of human–machine communication.

According to the relevant literature, human–machine communication refers to an interactive process that goes beyond technical communication. Although a machine has a dynamic structure, it does not possess a human-like spirit. However, the reactions people have toward machines and the meanings they ascribe to them can lead to the anthropomorphization of machines. Indeed, the concept of anthropomorphism also takes on significance at this point. Anthropomorphism is defined as the attribution of human characteristics to non-human entities.

At the same time, the devices used in human–machine communication have become communicative actors. This phenomenon, described in functional terms, reflects how people perceive artificial intelligence-based devices and applications as communicators. As a natural consequence, artificial intelligence technologies are becoming an extension of everyday life, and individuals' reactions to these technologies are becoming a subject of research.

Human–machine communication is constantly evolving, and research in this field must keep pace with these changes. Indeed, the evolving technological landscape necessitates a reexamination of the behavioral and cognitive dimensions of human–machine interaction. For this reason, human–machine communication is considered one of the key research topics in the current literature.

Researchers in this field note that human–machine communication should not be addressed solely at the individual level but must also be examined at the group level. In addition, it is important to investigate the effects of artificial intelligence on the media and public discourse, as well as its implications for everyday practices. Human–machine communication should not be evaluated solely in terms of technological advancements; the temporal, cultural, epistemic, and cognitive consequences of the relationships established through these technologies must also be taken into account.

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POLITICAL COMMUNICATION AND ARTIFICIAL INTELLIGENCE: DEMOCRACY, MANIPULATION, AND MICRO-TARGETING

Serhat MADSAR*

Introduction

New tools and applications that have emerged with technological developments and advancements have often become central to people's daily lives. Tools such as smartphones and social media platforms that emerged during this period have become an important part of individuals' daily lives, significantly impacting both individual and societal life. Indeed, the effects of these technological tools cannot be considered in isolation from social and political life. In parallel with these developments, artificial intelligence tools are being integrated with social media platforms and used functionally in various fields. Artificial intelligence tools have brought about significant transformations in consumption habits, ways of doing business, and political processes, serving as a model for others.

Artificial intelligence offers political actors and parties powerful new tools and techniques (Foos, 2024: 7). In this context, the integration of artificial intelligence into political communication, digital election campaigns, or the widespread use of social media in political communication, is shaping a new transformation in politics, going beyond the transformations previously brought about by the internet (Battista, 2024: 13). Digital transformation, accelerated by artificial intelligence, is redefining the organizational structures of political parties, their campaign development processes, and the ways they communicate with voters. The shift from traditional political campaign processes to a data-driven approach is enhancing political parties' ability to target, identify, and mobilize voters (Gençay, 2025: 619).

Therefore, artificial intelligence can be considered not merely a technological tool for processing data, but also a constitutive actor used in shaping political campaigns and determining the policies to be implemented. Indeed, it is stated that political communication has entered its fourth phase today,

* Asst. Prof. Niğde Ömer Halisdemir University, Faculty of Communication, Department of Public Relations and Advertising, serhatmadsar@ohu.edu.tr, ORCID ID: 0000-0003-1152-1728

and that politics and political communication practices are conducted in a way that is dependent on big data and guided by technology (Roemmele & Gibson, 2020: 595). With the widespread use of artificial intelligence in the political sphere, concepts such as "Technopolitics" and "Algorithmic Political Communication" have emerged in the literature, addressing various dimensions of the relationship between technology and political communication (Göksu vd., 2025: 54).

A study examining the use of artificial intelligence applications in the political sphere indicates that AI is effective in shaping citizens' opinions on the one hand, and is used by political decision-makers to transform these opinions into outputs such as algorithmic decision-making mechanisms on the other (Rymon, 2026). Therefore, the relationship between political communication and artificial intelligence is multifaceted and multi-layered. Although artificial intelligence tools offer positive contributions to political communication in many different ways, it is important to develop a critical perspective in order to comprehensively examine the political impacts of this technology.

The question of how artificial intelligence tools will affect political communication is too complex and far-reaching to be answered in a single study. This study aims to examine the impact of artificial intelligence technologies on political communication in the context of democracy, participation, political targeting, and manipulation. To this end, the discussion will first focus on how big data affects political communication practices, followed by an examination of the political impact of artificial intelligence in the context of democracy, microtargeting, and manipulation.

1. Data-Driven Transformation in Political Communication

The most fundamental goal of political campaigns is to maximize the chances of winning an election. In this regard, campaigns aimed at achieving victory in the political arena require accurate predictions regarding voter preferences, behavioral patterns, and voters' reactions to campaign efforts (Nickerson & Rogers, 2014: 51). Developing discourses and campaign strategies that address voter expectations is only possible with detailed and comprehensive information and data about the voters. The importance of data in political communication is constantly increasing, in parallel with the diversity of information sources.

Information has historically been a vital resource for political campaigns throughout history. The concept of public opinion, which emerged particularly in the early 20th century, and politically-focused public opinion research conducted in the United States, have played an effective role in enabling political actors and experts to gain detailed information about voters (Seyidov, 2021: 35). The importance of information in political communication has historically increased, and indeed it has been considered a point of reference in efforts to historically periodize political campaigns. Research that historically analyzes political campaigns generally emphasizes three distinct periods. These periods are referred to in the literature as pre-modern, modern, and postmodern campaigns (Norris, 2000).

In the initial period between the two World Wars, political campaigns were generally conducted at the local level and through face-to-face communication. In the second period, considered modern, communication between political parties and voters was generally facilitated through mass media. The advent of television, in particular, has brought about a transformation in political campaign practices. The third phase of political campaigns, on the other hand, has been termed "postmodern" and became widespread after the 1990s. During this period, campaigns were conducted largely online. Furthermore, public opinion polls and focus group studies designed to gauge voters' attitudes have gained importance in postmodern campaigns (Roemmele & Gibson, 2020: 599). Consequently, the need for information and data has reached an all-time high in order to develop an effective political campaign.

The emergence of artificial intelligence and multiple digital media environments, and the storage and analysis of personalized information across online and offline platforms, have transformed the way political campaigns are conducted, characterized by "data." (Kefford vd., 2023: 449). It can be said that a data-oriented understanding of political communication has become established, especially in parallel with the developments in digital technologies in recent years.

In political campaigns, data is used in various fields to achieve very different purposes. Nickerson and Rogers state that big data is used in political campaigns to determine campaign strategies and create predictive voter models, and that three different models are created using big data regarding voter behavior, support, and sentiment (Nickerson & Rogers, 2014: 54).

Therefore, campaign processes and voter behavior analysis can only be carried out through big data. In other words, it is impossible to develop a political campaign today that is independent of data.

Indeed, data-driven campaigning has become a key concept for those studying elections and political campaigns in recent times (Kefford vd., 2023: 449). With the integration of advertising and marketing techniques into the political arena and the identification of target audiences, elections are becoming increasingly data-driven (Zeybek, 2020: 55). Political campaigns conducted in this context develop voter databases containing detailed information about citizens. Therefore, campaign data analysts are taking on increasingly important roles in politics. Models are being developed to predict the likelihood of citizens engaging in specific political behaviors, supporting candidates and issues, and responding to content (Nickerson & Rogers, 2014: 70). Therefore, the transformation of political campaigns is fundamentally based on the use of artificial intelligence and big data systems, and these technologies are changing the way political processes are implemented by enabling the measurement, prediction, and manipulation of voter behavior (Gençay, 2025: 620).

Data-driven political campaigns using artificial intelligence tools generally share two key characteristics. The first of these, targeting, involves deciding which messages will be sent to which potential voters and when during the campaign. Testing, on the other hand, aims to determine the extent to which voters are influenced by campaign messages and to guide content production (Baldwin-Philippi, 2017: 628). As can be seen, artificial intelligence systems are used in various areas of political communication. Indeed, while artificial intelligence offers positive contributions to political communication such as increased voter participation, effective target audience identification, and personalized content production, it can also lead to negative consequences and ethical issues such as surveillance, disinformation, and manipulation. In this context, the data-driven transformation of political communication needs to be addressed from many different perspectives.

1.1. Micro-targeting/Audience Segmentation in Political Communication

In order for political campaigns to be successful, political messages must be conveyed to a specifically identified target audience through the right communication channels, using an effective message. The increasingly data-driven nature of politics makes it possible to analyze voter behavior, create behavioral profiles, and engage in micro-targeting. In particular, to achieve

success in elections, it is necessary to accurately analyze potential voters when identifying the target audience and to create voter profiles based on the results of this analysis. The target audience refers to the voter groups for whom political campaigns are developed to win their votes. Therefore, the target audience is the segment of the population considered when creating campaign messages and content, and to whom these messages will be delivered (Devran & Özcan, 2020: 1982).

Segmentation, a concept originating in marketing, is the process of dividing a broad target audience into specific groups based on particular characteristics. More specifically, segmentation is the process of dividing a population, market, or audience into groups where members of each segment are more similar to each other than to members of other segments (Grunig & Repper, 2005: 144). Through voter segmentation, political parties analyze large datasets and classify large groups of voters according to demographic, geographic, and other characteristics. In this way, effective communication with voters can be established, and resources can be used more efficiently (Gençay, 2025: 619). Voter segmentation allows political parties to divide their target audiences into micro-segments, enabling the development of political discourse tailored to voter characteristics. Indeed, the use of artificial intelligence in the political sphere enables micro-targeting and personalized message delivery.

A political party's ability to accurately target its voter group at the micro level ensures that messages reach the relevant recipients, persuade voters, and consequently achieve success in elections. Indeed, microtargeting is functional in identifying audiences that are likely to be interested in political campaign messages and in conducting sophisticated campaign management (Rackaway, 2007: 468). More specifically, microtargeting is a strategic process aimed at influencing voters by directly delivering messages tailored to individuals' preferences and characteristics (Papakyriakopoulos vd., 2018: 2). Accordingly, many definitions of microtargeting share the common point of treating the concept as a type of personalized communication (Zuiderveen Borgesius vd., 2018: 82).

Based on these definitions, it can be said that micro-targeting allows for the creation of personalized messages tailored to each voter's interests, personal characteristics, and voting behavior patterns. Today, social media users, especially online and in social media environments, encounter personalized messages based on their personal preferences, interests, personal

characteristics, and behaviors, rather than chronological or random content. Therefore, each user has their own unique content feed. Customization of content refers to the active choices users make to manage their own feeds, such as following accounts or hiding unwanted content, while personalization refers to platform-based algorithmic content selection (Decker, 2025: 87).

Artificial intelligence tools are proving to be quite functional in political communication, particularly in micro-targeting and creating personalized messages. Indeed, through big data, voters' behavior, personal characteristics, affiliations, and demographic information are being recorded. Using this data, large groups of voters are divided into subgroups that are similar to one another based on specific characteristics. As a result, political campaigns are conducted using micro-targeting to reach a narrow group of voters. This situation leads voters to take a potentially greater interest in the political campaign and ensures the campaign's success. In this regard, it can be said that artificial intelligence makes a significant contribution to political communication through personalized content and micro-targeting.

Conducting political campaigns through micro-targeting using voter datasets provides significant benefits such as increasing voter awareness of political issues, participation in democratic processes, or mobilization. However, microtargeting can also lead to certain voter groups being overlooked, certain groups being denied information about the election, and therefore these groups not being democratically represented. In addition, micro-targeting can lead to privacy violations, and certain voter groups can be manipulated or excluded (Zuiderveen Borgesius vd., 2018: 88). Consequently, micro-targeting carried out through artificial intelligence can lead to democratic problems. This situation necessitates examining artificial intelligence tools used in political communication within the context of democracy.

1.2. Artificial Intelligence and Democracy in Political Communication

The relationship between artificial intelligence and democracy is examined depending on how the researcher evaluates artificial intelligence technologies and tools and how they position these technologies within the political sphere. When examining the relationship between artificial intelligence and democracy within the context of political communication, there are theoretical approaches that evaluate this relationship both positively and negatively. Approaches that argue artificial intelligence tools will make positive contributions to democracy support their views with concepts such as

political participation and voter mobilization. Researchers who argue that artificial intelligence will negatively impact democracy generally point out that AI constantly reproduces existing social inequalities, that the digital public sphere fragments and leads to polarization, and that individuals can be manipulated through technological tools.

It can be argued that approaches developing a positive view of artificial intelligence technologies in the political sphere are based on the crises experienced in modern democracies. Indeed, in liberal democracies, there has been a significant decline in traditional forms of participation, such as voting and party membership. This decline has been particularly evident over the past 20 years and is more pronounced among low-income groups (Duberry, 2022: 56-57). In this regard, the view that artificial intelligence will make a positive contribution to democratic processes is based on the argument that these tools will enable citizens to become better informed about political issues and participate in democratic debates (Adam & Hocquard, 2023). One of the most important aspects of this approach relates to the potential increase in democratic participation through the use of artificial intelligence. Furthermore, according to this argument, artificial intelligence can facilitate political mobilization, provide citizens with access to information, and encourage informed and inclusive participation in decision-making processes (Battista, 2024: 8).

However, it is also noted that artificial intelligence technologies could undermine democratic processes in various ways. For example, micro-targeting and content personalization implemented with big data and artificial intelligence tools are frequently cited as a potential threat to political debate and the exchange of ideas (Decker, 2025: 87). Indeed, the use of AI tools to microtarget voters in an attempt to persuade them could trap individuals in echo chambers, , leading to political polarization and undermining the ideal environment for deliberation (Marwala, 2023: 159). Furthermore, AI-powered algorithms regulate users' information flow, determining what content individuals are exposed to and the degree of importance they give to political issues (Beer, 2017: 7). Therefore, artificial intelligence applications directly impact democratic processes by having the ability to define the boundaries of public debate and shape the level of interest citizens show in any given issue.

Another topic critically examined in the context of the relationship between artificial intelligence and democracy is algorithmic bias. Algorithmic

recommendation systems operate using large datasets. Therefore, the historical and social inequalities contained in the datasets that algorithms are fed can be constantly reproduced by the algorithms. In this respect, political algorithms have the potential to reinforce historically existing biases and problematic forms of representation (Noble, 2018).

A significant consequence of individuals being trapped within different filter bubbles through artificial intelligence and algorithms is social polarization. Individuals belong to different knowledge sets depending on their political ideologies, attitudes, and values. This situation undermines the ideal environment for debate and hinders democratic processes. Indeed, within these filter bubbles, individuals regard their own views as the truth and are not exposed to arguments from different perspectives. Therefore, one of the significant impacts of artificial intelligence on the political sphere is the inability of voters to reach a consensus on reality. But especially in deliberative democracies, consensus on the truth is a necessary condition for conducting public debates (Coeckelbergh, 2023: 1344). But different realities are being constructed using artificial intelligence tools. Consequently, artificial intelligence and large datasets can harm democratic culture by fueling echo chambers that deepen political polarization and enabling manipulative rhetoric to reach wider audiences.

1.3. Political Communication, Artificial Intelligence, and Manipulation

Concerns are frequently raised that the use of artificial intelligence in the political sphere will undermine democratic processes in the context of fake news and manipulation. New technologies integrated into the political arena have come under harsh criticism from experts, who have expressed concerns that artificial intelligence tools will lead to fake news and manipulation in elections (Jungherr vd., 2026: 585). There is wide agreement that misinformation and fake news pose a significant threat to democracy. The widespread dissemination of misinformation, especially during election periods, has potential negative effects such as influencing voters' opinions and voting behavior, creating confusion between true and false news, and undermining the deliberative process, which is an indispensable element of democracy (Coeckelbergh, 2023: 1344).

Online disinformation exploits vulnerabilities in social media environments that facilitate user interaction, thereby undermining a political community's potential to communicate based on facts (McKay & Tenove, 2021: 708). It can be said that filter bubbles and echo chambers are the primary

tools that spread online disinformation. Users' social media experiences and behaviors are recorded and their intentions are analyzed. In this way, a personalized content feed is determined based on users' ideologies, values, beliefs, and attitudes. In this feed, users interact with others who share similar attitudes and behaviors and are surrounded by emotionally structured content. Consequently, filter bubbles can contribute to the spread of misinformation by presenting content that aligns with individuals' beliefs.

Furthermore, filter bubbles created by artificial intelligence restrict users' access to information based on their preferences, thereby reinforcing existing beliefs, creating echo chambers that contribute to the spread of misinformation, and preventing users from encountering differing viewpoints. Therefore, it weakens voters' ability to make informed choices, a crucial measure of democracy, and their access to the resources necessary for democratic participation (Rymon, 2026). However, bot accounts are used extensively on social media, especially during election periods. Bot accounts present the appearance of a real social media profile and circulate disinformation to achieve various goals. These accounts systematically manipulate public opinion by producing content that either supports or discredits a particular issue or political actor.

In the political arena, the impact of false and fake news is not limited to simply lying or distorting the truth. The frequent appearance of fake news undermines voters' trust in political actors, institutions, and democratic politics. Information pollution can also cause people to doubt and distrust their own ability to acquire information (Coeckelbergh, 2023: 1344).

In particular, the creation of deepfake with the intent to manipulate voters is viewed as a significant threat to social stability and the continuity of the political system. Problems related to deepfakes include the threat to national security through propaganda and interference in elections (Battista, 2024: 14). Manipulation is always present in the political arena, but with the development of artificial intelligence technologies, it is becoming increasingly difficult for users to determine whether content is fake or not. Therefore, AI-generated fake news and misinformation have the potential to manipulate individuals.

Conclusion

With information and data becoming a crucial resource, politics is being conducted in a data-dependent manner. Therefore, data-driven artificial in-

telligence is highly influential in all fields, including politics, and shapes political communication practices. Above all, artificial intelligence offers new tools and techniques for political communication. The impact of artificial intelligence tools on political communication is too multifaceted and extensive to be addressed in a single study. Artificial intelligence and its impact on political communication are closely linked to how these technologies are addressed. This study examines the relationship between artificial intelligence and political communication in the context of micro-targeting, democracy, and manipulation.

The way artificial intelligence redefines traditional communication (Ertürk & Zor, 2026: 366) and the significant application of AI tools in political communication has been viewed both positively and critically by researchers. Approaches that argue artificial intelligence technologies will make a positive contribution to politics generally emphasize the concepts of micro-targeting, participation, and personalized messaging. It is stated that artificial intelligence tools can be used to facilitate individuals' political participation, and that voters can be segmented into different groups, thereby enabling the development of different messages tailored to different target audiences. Consequently, attention is being drawn to the potential of artificial intelligence to transform political campaigns in a more effective, targeted, and comprehensive manner.

Approaches that take a negative view of the relationship between artificial intelligence and political communication base their arguments on the context of democracy and manipulation. It is emphasized that artificial intelligence traps individuals in different sets of information, in filter bubbles, and harms the culture of democratic deliberation, which is an indispensable condition of democracy. Furthermore, it has been noticed that, through the use of artificial intelligence tools, voters' information channels and sources are being identified, and they are facing restrictions on their access to information. At the same time, it can be argued that echo chambers, fueled by artificial intelligence, play a role in the spread of misinformation and that voters' voting behavior is being manipulated.

As can be seen, the relationship between artificial intelligence and politics is addressed through a wide range of discussions. The question of how artificial intelligence affects political communication should be addressed through various studies. This study provides a limited framework in the context of democracy, microtargeting, and manipulation. This relationship

should be examined theoretically and practically through future studies, and the literature on political communication should be developed. In this context, by examining which artificial intelligence tools are heavily used in political communication, the potential of AI to transform political communication campaigns can be discussed. In addition, the political impacts of artificial intelligence can be examined through in-depth interviews with political communication professionals.

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THE TRANSFORMATION OF ADVERTISING IN THE AGE OF ARTIFICIAL INTELLIGENCE

Nur Gözde TAYFUR*

Introduction

Advertising, one of the key areas of marketing communication, is evolving in light of technological advancements. When conducting their communication activities, brands seek to convey their brand messages to consumers by leveraging the power of advertising. For this reason, brands are striving to integrate technological advancements into their advertising efforts to reach today's consumers—who are tech-savvy, trend-conscious, and open to interactive communication. Recently, the most visible aspect of this effort has been the application of artificial intelligence technologies in the field of advertising.

Today, it is evident that artificial intelligence technologies are being utilized in many stages of processes such as content production and consumption in the field of advertising. The use of artificial intelligence to analyze large datasets, predict consumer behavior, personalize advertisements, and identify the appropriate target audience has begun to transform the world of advertising. Particularly with the adaptation of generative AI technologies to the advertising industry, the scope of AI's application in the sector has expanded beyond data analysis and automation. Generative AI technologies have become part of the creative process in advertising by transforming data into content such as visuals, audio, video, and text, and have thus begun to transform both the advertising industry and the way brands operate.

The growing adoption of artificial intelligence, and particularly its advanced form, generative AI, by global brands, and the implications this has for the advertising industry, has sparked some debate. The fact that AI-generated content has reached a point where it is nearly indistinguishable from the real thing has raised ethical concerns such as authenticity, transparency, and consumer trust. While this recent development offers benefits such as

* Asst. Prof., Istanbul Yeni Yüzyıl University, Vocational School, Department of Public Relation and Publicity, nurgozde.tayfur@yeniyuzyil.edu.tr, ORCID ID: 0000-0002-6056-7282

speed, efficiency and cost savings to advertising production processes, it also poses risks, such as negatively affecting consumer perceptions and causing a loss of trust.

This study aims to detail the transformation brought about by artificial intelligence technologies in the field of advertising. In this context, the shift from the traditional era of advertising to the digital era is discussed, followed by an examination of the impacts of artificial intelligence on the field of advertising and the AI tools used in the industry. In addition, analyses are conducted using recent examples of AI-powered advertisements from global brands. Finally, the ethical debates sparked by this emerging technology in the advertising industry are examined through the lens of concepts such as authenticity, trust, and transparency.

1. Artificial Intelligence and the Transformation of Advertising

One of the fundamental goals of advertising is to trigger people's desire to own something and thereby encourage them to make a purchase. Thus, advertisements aim to present products or services in their most visually appealing form and to influence consumers with their core sales pitch. When examining advertisements that emerged in the 1900s, it is possible to speak of a traditional approach to advertising. It would not be incorrect to refer to the period before the emergence and widespread use of the Internet as the era of traditional advertising. It can be said that mass media were used extensively during this period, and that a one-way, general message was conveyed to the public.

In the era of traditional advertising, collaboration among many professionals—such as copywriters, art directors, photographers, stylists, and designers—was necessary. For this reason, producing an advertisement required significant manpower and financial resources. During this period, it is evident that media outlets such as newspapers, television, and radio—commonly referred to as mass media—were frequently utilized. In traditional advertising, brands communicated their messages to their target audience in a one-way manner, and consumer feedback was quite limited. The limited nature of feedback, the lower level of competition, and the lack of a consumer-centric approach also help explain why advertising messages are conveyed in a standardized manner. Starting in the 1990s, Internet technologies began to spread rapidly, bringing about a significant transformation in the field of advertising. Advertisements, which were originally produced by mass media in a static, one-way, and non-interactive manner, have evolved

into a two-way, interactive, and measurable format with the emergence of digital platforms. Particularly with the development of Web 2.0 technologies, social media platforms, search engines, and e-commerce websites, which have become an integral part of everyday life, have emerged as prominent actors in the advertising ecosystem.

The advertising industry, which has been transformed by digital technologies, has entered a new wave of transformation driven by AI-powered systems. With the advent of artificial intelligence technologies, massive datasets can be analyzed, advertising production processes can be accelerated, and advertisements can be optimized in real time by predicting consumer behavior. Recent studies have shown, in particular, that artificial intelligence is transforming the advertising industry by placing greater emphasis on aspects such as targeting, personalisation, content creation and ad optimisation (Gao et al., 2023). This situation offers an advantage for consumer-focused marketing strategies.

One of the most significant contributions that artificial intelligence makes to the advertising industry is saving human resources and time, both of which are valuable assets. Generative AI helps reduce the amount of time spent on idea-generation processes such as content creation and brainstorming, thereby supporting increased efficiency in marketing processes and advertising (Grewal et al., 2025). As mentioned earlier, while the traditional approach to advertising required collaboration among many experts and a significant amount of time to facilitate that collaboration, artificial intelligence has eliminated these requirements. Thanks to artificial intelligence, even a single person can now create an advertising campaign that reaches the target audience in a very short time.

Although the visual production process is one of the most challenging stages in advertising, requiring the most budget and time, artificial intelligence has minimised these challenges. Similarly, while becoming a professional in a given field requires a great deal of technical and practical knowledge and experience, thanks to artificial intelligence, even non-experts can produce highly professional-looking visuals in a short amount of time. Industrial analyses have shown that artificial intelligence enables the automation of 60% to 70% of employees' workloads, thereby allowing employees to devote their remaining time to activities such as strategy development and creativity (Zhang & Hur, 2025: 4-19).

One of the remarkable opportunities that artificial intelligence offers in the field of advertising is personalization. Thanks to big data analytics and machine learning algorithms, artificial intelligence contributes to the development of personalized advertising strategies by conducting a detailed analysis of consumers' demographic and psychographic data. Generative AI, on the other hand, takes this a step further by creating personalized visual content and text tailored to different target audiences. Thanks to artificial intelligence techniques such as machine learning, deep learning, and natural language processing, digital content, promotions, and campaign messages can be delivered to consumers in real time (An & Nago, 2025: 2). This way, instead of showing every consumer the same ad, content can be created that is tailored to the consumer's interests, preferences, and needs.

The Swedish company Klarna states, based on concrete data it has presented, that generative AI contributes to reducing marketing and sales costs by increasing efficiency in areas such as image generation and text translation, which play a significant role in advertising (Choudhury, 2024). According to a statement the company issued in 2024, it noted that sales and marketing expenses had decreased by 11% thanks to artificial intelligence, and that this reduction resulted in savings of $10 million. The fact that tools like Midjourney and DALL-E—which are among the most widely used AI tools—have reduced image production costs by $1.5 million and cut image production times from six months to as little as seven days serves as proof that AI is driving a transformation in advertising production processes.

2. Generative AI Technologies in Advertising

The advertising industry, which is undergoing a transformation driven by artificial intelligence, has reached a new level with generative AI technologies. At this point, explaining the difference between the concepts of artificial intelligence and generative artificial intelligence would be helpful for a better understanding of the topic. Generative artificial intelligence is emerging as a subfield of artificial intelligence. Artificial intelligence (AI) is a technological advancement that aims to replicate human intelligence by mimicking cognitive processes such as learning, problem-solving, reasoning and decision-making. Generative artificial intelligence, on the other hand, goes beyond simply analyzing data; it can use the insights it gains from the data to generate new content such as images, videos, audio, text, and code. In this way, in addition to human processes such as thinking and decision-making, the production process—which is also the result of human labor—is carried out through generative artificial intelligence.

The emergence of artificial intelligence has laid a technical foundation for smart operations in the field of advertising (Lai, 2021). This makes it possible to interpret big data in a short amount of time, analyze consumer behavior quickly, and develop strategies to achieve the intended goals. Generative artificial intelligence, as the name suggests, is an AI technique that generates original and new content by learning data distribution models (Jonanovic & Campbell, 2022). Thanks to generative artificial intelligence, the data obtained is not only interpreted but can also be used to generate new content. While artificial intelligence takes a data-driven approach to media planning, target audience analysis, and campaign processes, generative AI helps create ad visuals, videos, ad copy, and other creative content related to advertising. For this reason, generative AI can play an active role in all the processes that lead to the creation of an advertisement, thereby taking a central place in uniquely human creative processes.

2.1. Generative AI Tools Used in Advertising

The most popular generative AI tools in the field of advertising are ChatGPT, DALL-E, Grammarly, and Midjourney (Grewal et al., 2025). ChatGBT, which is frequently used in everyday life, is a large language model (LLM) that utilizes deep learning and transformer architecture to draw on publicly available information. In this way, it contributes to the textual aspect of advertising, such as ad copy, product descriptions, social media content, and blog posts. Today, many of the world's leading companies are using generative AI to create relevant and effective advertising copy. For example, Vanguard, one of the world's leading companies, has managed to increase the conversion rates of its LinkedIn ads by 15% thanks to ad copy generated by generative AI (Colburn, 2024). The Unilever brand has also used artificial intelligence to respond to customer messages. The brand didn't stop there; it also developed a generative AI application to analyze the emotions, thoughts, and attitudes underlying customer messages. Alessandro Ventura, Unilever's Chief Information Officer (CIO), stated that the use of generative artificial intelligence has reduced the time it takes for customer service representatives to respond to customers by approximately 90% (Olavsrud, 2023).

One of the most important elements of the advertising industry is visual content, such as photographs and illustrations. The DALL-E app is also one of the generative AI tools frequently used by advertisers. This app focuses on text-based commands to generate original visuals that can be used in advertisements. Grammarly is another AI-powered writing assistant. The app

analyzes text much like an editor, identifies and corrects errors, and helps adjust the tone of content used in advertising campaigns to best suit the ad vertisement.

To ensure that generative AI tools can be used effectively and ethically in advertising, van Berlo et al. (2024) examined currently used generative AI tools and developed a framework called MADE (Mapping-Assembling-Demonstrating-Executing) (p. 736). According to the study, while OpenAI and ChatGPT tools are frequently used for text content, they have been integrated with DALL-E to support image generation. Google Gemini and Microsoft Copilot are AI tools widely used in advertising applications that generate content virtually indistinguishable from that written by humans. The tools most frequently used for visual content are Midjourney, OpenAI DALL-E, Big Image Creator, Artbreeder, and Ideogram. The generative AI tools of choice for editing visuals used in advertisements include Adobe Photoshop, Friefly, DreamStudio.ai, and Clickdrop. Finally, applications such as OpenAI Sora, Google Veo, Gen-2, RunwayML, and Synthesia are also preferred for creating animated visuals and videos in advertisements (pp. 733–744).

The model, called MADE, developed by researchers, provides a roadmap for those who want to use generative AI in advertising. The model's name is formed from the initial letters of four consecutive stages. The first stage is Mapping, the second stage is Assembling, the third stage is Demonstrating, and the final stage is Executing. The first phase is the stage where strategic decisions are made and a plan is developed for the AI-generated ad to be produced. In the second phase, a decision is made regarding which generative AI tools will be used in accordance with the plans developed in the first phase, and production is carried out. During the pilot phase, the ad is tested on a small group to evaluate its realism and ethical considerations, which are important factors for artificial intelligence. In the final stage, the ads that successfully passed the preliminary test are shown to participants. However, what is important at this stage is to clearly state to participants that the content was generated using artificial intelligence. This ensures an ethical and transparent process (van Berlo et al., 2024).

3. How Brands Use Generative AI in Advertising?

Brands have taken notice of the advantages that generative AI offers to advertising and have begun to incorporate this cutting-edge technology into their advertising campaigns. Today, many brands are leveraging AI for the

visual and textual production of their advertising materials, the development of personalized content, and the generation of creative ideas. Thanks to generative AI, brands have not only saved time in their ad production processes but have also gained the ability to establish timely and interactive communication with their consumers. Although this capability has its disadvantages as well as its advantages, many global brands have begun incorporating generative AI into their advertisements.

Although Heinz is a strong, timeless brand, it is perceived as a traditional brand in the eyes of young consumers. To challenge this perception, the brand developed a campaign called "A.I. Ketchup" in collaboration with the Canada-based creative advertising agency Rethink. The AI tool DALL-E 2 was given the command "ketchup," and the images generated by the AI closely resembled a Heinz bottle. This creatively and innovatively demonstrated that Heinz is not just an ordinary ketchup brand, but that the brand has become synonymous with ketchup (Geitz, 2025). In the next phase of the campaign, consumers were also involved in the process; the brand asked consumers to use different prompts—such as "space ketchup" and "Renaissance ketchup"—to generate ketchup images using artificial intelligence. Thus, DALL-E 2 generated images of ketchup in response to many different prompts. What's interesting is that nearly all of the AI-generated images produced in response to these different prompts resemble a Heinz bottle. Heinz incorporated these consumer-generated images into its campaign and showcased these AI-generated images on social media, in outdoor advertisements, in print media, on specially designed Heinz bottles, and in the brand's art gallery in the Metaverse (The Drum, 2023).

Figure 1: Ads of the World, 2023



The slogan for the advertising campaign is simple but quite creative: "Even Artificial Intelligence Knows 'Ketchup' Looks Like Heinz" (Khan, 2025). With this advertising campaign, Heinz generated more than 1.15 billion free impressions globally and achieved a 38% higher engagement rate on social media compared to previous campaigns.

The luxury fashion brand Gucci created promotional images for its 2026 "Primavera" collection using artificial intelligence and shared them with its followers ahead of Milan Fashion Week. Thus, the brand has drawn attention with a series of AI-generated images it shared on social media accounts such as Instagram and X. The content, which at first glance appears to be real, was shared with the tag "Created with AI" to indicate that it was generated by AI. This advertising campaign by Gucci has become one of the most talked-about examples in the luxury fashion industry. The brand has faced intense criticism, particularly regarding issues such as originality, craftsmanship, and authenticity.

Figure 2: Gucci Primavera Collection, 2026



Although Gucci did not showcase its entire collection using AI-generated images, this move has made it the target of criticism. Some users described the images the brand shared on Instagram as simplistic, cheap, and low-quality. A world-renowned luxury fashion brand whose products are sold at high prices chose to use artificial intelligence in its advertising visuals. This move was interpreted by its target audience as an attempt to cut corners. Blanca Zugaza Escribano, a fashion and luxury strategy consultant at Metyis, an international business and strategy consulting firm based in Switzerland, emphasised that Gucci's campaign aims to combine fashion, art and technology (Shahidi, 2026).

Coca-Cola has reconnected with its consumers by having its classic 1995 ad, “Holidays Are Coming,” reimagined by artificial intelligence in 2024. While the music and the red Coca-Cola trucks from the original campaign remain the same in the ad, it also features inclusive and diverse characters (Carroll, 2024). The commercial captures the Christmas spirit, New Year’s trees, snow-covered roads, and moments when Coca-Cola trucks deliver cola to people. As the Coca-Cola trucks travel along dark roads, the roads and trees are illuminated. The use of artificial intelligence in creating the advertisement was explicitly disclosed in the statement, 'Created with Real Magic AI'.

Figure 3: The Coca-Cola Company, 2024



The Coca-Cola Company has described the objective of this advertising campaign, which reunites the brand with its target audience after almost 30 years, as combining human storytelling with AI-powered creativity (The Coca-Cola Company, 2024). The brand did not just use artificial intelligence in its advertising campaign; it also leveraged AI to provide its consumers with an interactive and engaging experience. Thus, Coca-Cola consumers engaged in a real-time, AI-powered conversation with Santa Claus and shared the snow globes they created based on their personal preferences on social media.

The brand has invited consumers to participate in this digital experience by directing them to CreateRealMagic.com or by scanning the QR codes on Coca-Cola packaging. In a statement on its official website, the brand also noted that it partnered with technology companies such as Accenture, Microsoft, Leonardo.ai, Mimic, and OpenAI to bring this digital experience to life (The Coca-Cola Company, 2024). Although Coca-Cola claims that it aims to stay current by integrating digital technologies and artificial intelligence into its advertising efforts, this AI-based advertising campaign has largely failed to resonate with the brand's target audience. The advertisement has faced significant criticism on digital platforms such as X, YouTube, and Reddit. In particular, users have emphasized that the ad lacks emotion and creativity and comes across as soulless and cold. Industry publications such as Forbes and Business Insider have also addressed the critical aspects of the advertising campaign (Di Placido, 2024b; O'Reilly, 2025).

AI-powered advertising and marketing activities are no longer limited to just a few brands; many global brands have begun incorporating AI into their communication strategies. The luxury fashion brand Valentino has posted an AI-generated promotional video on Instagram to advertise its "DeVain" handbag (Sharma, 2025). In 2024, the toy brand Toys "R" Us launched an AI-powered advertising campaign centered on the childhood dream of the brand's founder, Charles Lazarus, to open a toy store. To do so, the brand utilized OpenAI's video-generation tool, the Sora model (Di Placido, 2024a).

As a result, many brands today are leveraging generative AI to support their advertising efforts with technological innovations. However, artificial intelligence in advertising is not merely a technical tool that transforms content production processes; it also stands out as a paradigm that influences creativity, authenticity, transparency, and consumer trust. For this reason, examining the impact of generative AI on the advertising industry solely from a technical and economic perspective would be insufficient. Therefore, the concept must also be evaluated in terms of its ethical implications for the advertising industry.

4.Ethical Debates Regarding Generative Artificial Intelligence in Advertising

The benefits offered by generative AI, such as speed, low cost and time savings, have enabled brands to incorporate this latest technological development into their operations. For this reason, brands have begun to frequently incorporate generative AI into their communication efforts, particularly in advertising campaigns. However, the rapid adoption of this recent development in the advertising world has brought with it not only technical and economic advantages but also significant ethical debates. The transparency, originality, and creativity of AI-generated advertising content, as well as the trust it instills in consumers, are being discussed more and more every day, both in academic circles and in industry practices. For this reason, ethical concerns must also be taken into account when examining the impact of artificial intelligence on the advertising industry.

4.1. Authenticity, Trust, and Transparency

The inclusion of AI-generated advertisements in marketing activities affects not only production processes but also consumption and consumer perception. These advertisements, which convey the brand's message to the target audience, also shape consumers' perceptions. The fact that visual and audio content generated by generative artificial intelligence has become virtually indistinguishable from reality has brought ethical concerns such as

authenticity, consumer trust and transparency to the forefront of advertising literature.

Consumers' expectations of brand advertisements are based on genuine and sincere communication. The authenticity of an advertisement is directly related to the message it conveys leaving an accurate, original, sincere, and trustworthy impression on the consumer. Authentic advertisements are in harmony with and consistent with the brand's values and should not create a deceptive or misleading impression in the consumer's mind. However, advertisements created using generative AI may be perceived by consumers as artificial, untrustworthy, and insincere due to factors such as the dominance of technology and the increasing uncertainty surrounding human labor.

Since the era of traditional advertising, the perception of real people and authentic experiences, rooted in human labor and creativity, has long been one of the fundamental drivers of trust that fosters consumer brand loyalty. However, the growing prevalence of advertisements created using generative AI tools is increasing uncertainty about the source and authenticity of the ads, thereby influencing how consumers perceive them. The clearest evidence of this is the user comments on AI-generated ads. Gucci's AI-generated advertisements have been described by most social media users as artificial, insincere, and unrealistic. Many users have criticized the brand for not choosing real models, emphasizing that this could also lead to real models losing their jobs. t's not just Gucci many brands are facing negative perceptions and comments from consumers regarding their AI-generated advertising content. This criticism indicates that consumers have not yet fully embraced AI-generated advertising content.

Although brands explicitly state that they use artificial intelligence in their advertising production processes to demonstrate that they have adopted an ethical and transparent approach to communication and to earn the trust of their target audience, this is often not perceived as trustworthy by the target audience. Koning and Voorveld (2025) came across an interesting finding while investigating the effects of using generative artificial intelligence in advertising on consumer trust. The study shows that statements in advertisements such as "created using artificial intelligence" do not build trust among consumers; on the contrary, consumers find such advertisements more manipulative and lose trust in them (p. 250). While an advertisement's authenticity and transparency are meant to build trust with consumers, a sense of distrust often comes to the fore in ads generated by

artificial intelligence. The fact that brands do not explicitly state that their advertising campaigns were created using artificial intelligence also creates another issue regarding trust and transparency. Therefore, brands must take into account the potential risks that may arise when utilizing generative artificial intelligence in their advertisements.

Beak et al., (2024) examined the effects on consumers of explaining the use of artificial intelligence in donation-focused advertisements. Consistent with the findings of a previous study, the researchers concluded that clearly stating that an advertisement was created using artificial intelligence reduces both the advertisement's credibility and individuals' willingness to donate. While this statement aims to promote transparency in advertising, it leads to an increase in the complexity of advertising strategies. Furthermore, it has been observed that consumers tend to avoid algorithmic advertising due to a lack of understanding of how artificial intelligence algorithms work and concerns about the transparency of the process (p. 175). At this point, to promote transparency in AI applications used in advertising, it is not enough to rely solely on content warnings; it is also necessary to support consumers' perspectives through AI literacy training.

It is believed that in commercials featuring real actors, filmed in real locations, and produced by human creative teams, emotions can be conveyed in a more natural and authentic way; therefore, it may be easier for consumers to form an emotional connection with the advertising message and develop empathy. Conversely, the extent to which emotions in advertisements created using generative AI are perceived as genuine and sincere has become a topic of debate. Indeed, in the Coca-Cola example discussed in the previous section, a significant portion of the criticism directed by consumers focused on the fact that the advertisement was emotionally lacking, artificial, and lacking in authenticity.

The use of artificial intelligence tools in the field of advertising should be examined not only as a technical advancement that affects ad production processes, but also as an ethical transformation that requires a reassessment of concepts such as authenticity, trust, and transparency. A review of the existing literature reveals that the impact of artificial intelligence in the field of advertising is not limited to advertising content processes but also relates to how consumers perceive advertising from an ethical perspective. For this reason, it is evident that the sustainable and successful application of artificial intelligence in the field of advertising depends not only on the speed and

efficiency offered by the technology, but also on meeting consumers' expectations for transparency, maintaining trust in advertising, and supporting the brand's authentic identity.

Conclusion

Generative AI has begun to be used in the field of advertising in many different ways, such as content development, production processes, copywriting, and campaign design. This innovation is transforming the advertising industry with advantages such as speed, efficiency, and cost savings. On a global scale, many brands are integrating generative AI into their advertising strategies both to take advantage of the benefits it offers and to adapt to the latest developments. However, it would not be accurate to evaluate this recent development solely in terms of production processes and brand strategies. Given that consumption and consumer processes constitute another branch of marketing activities, the effects of AI-driven advertising on consumer perception are just as important as those on production processes. For this reason, it is necessary to simultaneously evaluate and improve the production and consumption processes of advertisements created using generative artificial intelligence.

Generative AI has significantly transformed the advertising industry. Data released by brands that have integrated this technological advancement into their advertising campaigns indicates that productivity and speed have increased while costs have decreased. However, recent research in the field of advertising suggests that it may be misleading to view artificial intelligence merely as a technical advancement that enhances efficiency. The ultimate goal of brands is to establish an emotional connection with consumers, convey their brand messages to the target audience as effectively as possible, and foster brand loyalty. The most effective way to convey brand messages to the target audience is through advertising. However, research shows that advertising content generated by artificial intelligence is often perceived by consumers as neither trustworthy nor authentic. The many negative user comments on AI-generated ads also support this finding.

When conducting AI-driven advertising campaigns, brands should take ethical principles into account and prioritize developing strategies that foster consumer trust by maintaining authenticity and transparency. Although many brands claim to be keeping up with the times by incorporating this technological advancement into their marketing strategies, initiatives that consumers do not find trustworthy will not benefit manufacturers. For this

reason, it is essential to manage consumer perception in a positive way and prevent artificial intelligence from creating an image that is devoid of emotion, excludes human labor, and is perceived as unreliable. At this point, marketing professionals, industry practitioners, and academics must collaborate to guide the applications of generative artificial intelligence in the field of advertising in accordance with ethical principles and establish a sustainable framework. This is because, in the future, the key factor determining the success of generative AI in advertising will be not the technology itself, but rather its use in accordance with ethical principles and within a responsible communication framework that takes consumer expectations into account.

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SCIENCE COMMUNICATION IN THE AGE OF ARTIFICIAL INTELLIGENCE: ACTING, MEDIA, AND POLITICS

Esra AKARSU*

Introduction

Science, derived from the Latin term *Scientia*, is an activity that provides explanations about the external world and is based on inquiry. It is a thought process that includes both verification and falsification, examines the connection between fact and theory, and replies the question "How?". In developing scientific concepts, the path of explanation, theory, and testing is followed, and the circumstances under which novel theories can be adopted are evaluated (Güzel, 2010). Thanks to science, a system of knowledge production, it is eligible to make assumptions about the world with the accumulated knowledge, to possess a progressive capacity for understanding, and to utilize its techniques and equipment by following its processes. The five norms that scientists adhere to are universality, organized skepticism, impartiality, communalism, and honesty. The assertion that scientific knowledge belongs to everyone and must be shared is quite fundamental in human life (Neuman, 2020: 40, 47-48).

Human beings, as the subjects of production, are able to organize their existence on a rational basis through knowledge and science, to make sense of their daily lives, and to comprehend the biological/physical and cultural structures in which they live. They utilize the liberating power of knowledge to defend their rights and to fulfill their humanity in every field (Dursun and Dursun, 2021: 5). While it is a widespread belief that knowledge liberates people and enhances their quality of life, this phenomenon can be observed in everyday life. Thus, scientific knowledge progresses as a fact that reflects and influences society. In the age of artificial intelligence, the most dominant activity in spreading this influence is science communication. At this point, defining communication and science communication based on the definition of science is notable for discussion. *Communication* refers to the social interaction and human process that makes the world meaningful, based on the exchange of information, ideas, feelings, and attitudes between individuals

* Ph.D., Independent Researcher, Ankara University Institute of Social Sciences, Public Relations and Publicity, akarsuesra1@gmail.com, ORCID ID: 0000-0003-4014-6971

and groups through symbols. Derived from the Latin verb *"communicare"* meaning to share, communication is the transmission of information or messages from a sender to a receiver. While communication was initially focused solely on transmission, its reciprocity aspect is noteworthy today (Mutlu, 1998: 168-169; Chandler and Munday, 2018: 201).

Science communication, on the other hand, is a relatively new concept that began to appear in the literature after the second half of the 1980s and does not have a long history. In the broadest sense, it refers to adopting an interactive, participatory, egalitarian, inclusive, and more democratic approach to public understanding of science, rather than a one-way communication flow. The main actors expected to carry out this activity are scientists, scientific institutions, the media, decision-makers, and citizens (Dursun, Ç. and Dursun, O., 2021: 6). Today, one of the important tools that strengthens the flow of information between scientists, technology developers, and the public is artificial intelligence itself and the tools that support it (Arslan Eskiköy and Hiripsima Haçikoğlu, 2026: 180). Science communication guides societies in an era where multiple literacy skills are worthy in many fields such as technology, popular science, education, psychology, health, and the environment. As a process of communication and interaction, the objective of science communication is to bridge the gap between society and scientists, support the production of rational solutions to problems, and bring society and science closer together. Additionally, it aims to facilitate a communication process conducive to the exchange of views -that is negotiation- rather than a hierarchical structure.

This chapter discusses the concept of science communication in the age of artificial intelligence and its transforming structure, the relationship between media and science communication, the integration of artificial intelligence -as a new actor- into the process, and the extent to which independent science communication is possible, under three main and two sub-headings. In addition to these discussions, science communication policies and activities conducted at the higher education level in Turkey are included in the evaluation. Through the relationships established within the chapter, the goal is to find answers to three fundamental discussion questions. The first of these questions is how artificial intelligence transforms the actors and processes of science communication. The second is to answer whether independent science communication activities are possible in the face of algorithmic construction and relationships in the media. The third is to consider what kind of science communication policy higher education institutions

should develop in the age of artificial intelligence. Methodologically, the chapter conducts a literature-based, conceptual, and critical evaluation. The evaluation is limited to the current state of science communication in Turkey in the age of artificial intelligence.

1. The Transforming Structure of Science Communication

Science communication is a communication activity that establishes a connection between scientific and technological processes and policies, scientists, institutional structures, and ordinary citizens, where various contents are mediated, particularly through the media, and interaction emerges (Dursun, 2010: 2). The transition from analog to digital, and from digital to the age of artificial intelligence, represents a major structural transformation as a paradigm shift. Examining the development process of science communication, according to Bauer, the period between 1960-1984 was the era of scientific literacy, the period between 1985-1990 was the public's understanding of science, and from the 1990s to the present, the focus has shifted toward "science within society". These periods, which indicate that science is systematically examined, point to a path where the desired impact on society through science communication, the preservation of public trust in science and scientists, and the engagement with people's opinions, behaviors, and political preferences (Ağca, 2025: 63-65) are explored and gain meaning.

Science, as a transformative process, is research-oriented and requires analytical intelligence, intense concentration, a significant amount of time, and various technical skills. The transformation of ideas, theories, predictions, or questions into a finished product or new knowledge with real value, along with the improvement of the understanding and functioning of the social world, leads to an increase in solutions (Neuman, 2020: 51). In this context, the possibilities offered by technology in our current era are transforming both the ways of accessing and producing information, as well as science communication. This transformation can be observed specifically in human-machine interaction and communication in the context of science communication.

In addition to their mutual interaction, science communication and artificial intelligence technologies also open up a debate on how to proceed in the dissemination, understanding, and application of scientific knowledge. Through a transformative process, it is leading to a new phase in defining, explaining, or conveying complex scientific concepts to the public, and even

in the role distribution of many actors, such as experts and stakeholders. The ability of artificial intelligence tools to summarize scientific knowledge and make it easily understandable grants them a considerable function in science communication. Along with all these role distributions, the fundamental objective of science communication is mainly to establish a scientific culture, enhance scientific literacy, and contribute to scientific understanding and awareness (Arslan Eskiköy and Hiripsima Haçikoğlu, 2026: 173-175). Since societies need to adapt to a rapidly changing world in order to survive, "innovation and reshaping" should be considered as two elements that will accelerate the transition (2026: 176-177).

In terms of innovation and reshaping, each medium is making its own unique innovations in form and content. For example, while Microsoft's search engine Google was seen as a widespread and fast-responding digital resource until recently, a search on the search engine in 2026 will result in the response "AI Overviews". *OpenAI 's* AI tool ChatGPT, Google's Gemini, and Anthropic's Claude now stands out as a place where information is searched and accessed on mobile devices, even before Google. In contrast to Google, AI tools offer users various skills through prompts, such as dialogue creation, data analysis, translation, summarization, presentation preparation, visualization, calculation, and literature review, all of which are considered profitable and appealing. AI's attempt to mimic human skills, and its relative success in this endeavor, positions it as an effective actor, particularly in science communication. Given its frequency of use, AI is becoming a decisive factor and gaining power for all actors in the information access process, dramatically impacting decision-making.

While technology is an element of context, context is the shaper of interaction, where actors interpret the meaning and convenience of a technology and determine their direction accordingly (Bauchspies et al., 2024: 140). In the process operating within the production-circulation-interaction triangle, the proliferation of media platforms is now particularly noteworthy. After a past where access to information and details on a subject relied solely on written sources, today, in addition to written sources, visual, auditory, and even greatly digital sources are utilized. With the integration of artificial intelligence into existing communication and technological tools, not only theory but also practice is undergoing a transformation. Furthermore, the human's trust level in machine intelligence is startling. As a tool that rapidly processes big data and responds swiftly to user demands, artificial intelligence creates a sense of success and admiration in the user.

From another perspective, whether artificial intelligence can be viewed as a natural extension of scientific knowledge is a main question. There is a dialectical connection between human-machine interaction and communication. Whether a machine can fully replicate the capabilities of the human brain depends on time. In this context, it is necessary to acknowledge the ontological differences between the two. Neither should artificial intelligence become humanized, nor should humans completely transfer trust and authority to machines. For scientists, it is considered healthy for artificial intelligence to continue in an assistant role. Another critical perspective points to the fact that "not all scientific knowledge is directed toward the absolute good," highlighting its two poles: destructive and redemptive. The presence of visible and hidden purposes invites humanity to use its reason. As Kant stated, as long as humans "dare to use their reason," they can succeed in overcoming obstacles and reaching the truth (Dursun, Ç. and Dursun, O., 2021: 5-6). In this context, viewing artificial intelligence, a new actor in the process, with complete optimism or complete pessimism can be interpreted as prejudice and preconception. Therefore, to move beyond simply interpreting a technology as good, bad, or neutral, it is necessary to examine its value in terms of intent, meaning, production, convenience, use, and social relations from a short- and long-term impact perspective.

The concept of technological determinism suggests that technology is viewed as a key factor in determining social structure during a given period and is an inevitable driving force (Chandler and Munday, 2018: 392). Technological determinism views technology as the driving force behind other changes, demonstrating that the idea of a technological solution has an impact on people. The media widely reflects the inevitability of technological change through numerous examples. This myth makes the questions of who perpetuates it and who benefits from technology crucial (Bauchspies et al., 2024: 133, 137). Within the transforming structure of science communication, optimistic and/or pessimistic perspectives offer meaningful insights into attitudes and behaviors. Therefore, the positions of the actors also convey notable messages in this context.

Information pollution and information disorder, such as disinformation, misinformation, malinformation, manipulation, or infodemic which spread through the media, are now disseminating and being produced more rapidly in the age of artificial intelligence. As noted in the World Economic Forum's 2026 Global Risks Report, technological risks are viewed as a major threat area in both the short and long term. This risk, which ranks second under

the heading "Disinformation and Misinformation" (Web_1) (17.08.2026), negatively affects not only scientific production processes but also science communication. Despite these diverse risks, humanity must consider critical thinking, fact-checking mechanisms, reasoning skills, and scientific literacy. While addressing the transforming structure of science communication following technology, innovation, media channels, technological determinism, risks, and ontological perspectives, closely examining artificial intelligence, a new actor in the process, in terms of its role and power, holds a great place within the scope of this chapter.

1.1. Artificial Intelligence: The New Actor in Science Communication

Artificial intelligence refers to the design of technology and intelligent systems that imitate cognitive functions such as problem-solving, reasoning, learning, and perception, which require human intelligence. These systems, which have become a major topic of debate in the modern world and for humanity, should be addressed in a multi-dimensional way, evaluating them from social, economic, legal, and ethical perspectives, ensuring responsible, reliable, and beneficial operation for humanity (Ergül, 2026: 13-14). It is substantial to understand how artificial intelligence, as a new actor in science communication, influences and plays a role in this process with its capabilities. In this context, defining the term "actor" is appropriate. *An actor/agent/subject* refers to the active and dominant person who initiates the action, as opposed to someone in a passive and subordinate position (Chandler and Munday, 2018: 318-319). For example, public authorities, scientists, universities, museums, science centers, and libraries are key actors in science communication activities. Universities, in particular, play a substantial role on a global scale as valid and reliable centers of knowledge where science is produced and disseminated. Today, artificial intelligence, along with its tools, is a new and decisive actor in the process. However, it is not the sole manager or pioneer of science communication.

The "learning" nature of artificial intelligence is increasingly enabling it to further develop its capabilities in machine learning and deep learning. For instance, it goes beyond simply following predefined rules and expands decision-making frameworks by identifying patterns within large datasets. In the context of science communication, journalists should adopt an approach that questions the functioning of digital systems and prioritizes the public interest above all else when using artificial intelligence in journalism. Meanwhile, while the journalist must be transparent and accountable, the lack of principled and fair algorithmic systems can pose a threat to the public's right

to information, the functioning of democracy, and news credibility (Uçar and Kamer, 2026: 87, 95-96). Nevertheless, artificial intelligence, as one of the actors in science communication, has the potential to use communication in a multi-dimensional and open-minded way, within the context of pluralism (Maigret, 2019: 357), for better conditions.

Artificial intelligence technologies are not only used in specialized fields, but also reshape the individual's subjectivity through daily routines, forms of social interaction, and decision-making processes. As a kind of assistive technology or facilitating tool, it can provide certain incentives and different options (Durgeç, 2025: 50-51). Since the tools and applications used in everyday life are knowledge-based productions, the influence and determining role of artificial intelligence can be observed here as well. Alongside this, the impact of artificial intelligence on the individual's daily practices carries risks such as automating behavioral patterns and interfering with decision-making processes through algorithms. In this context, it transforms into a guiding and framing authority over the individual's subjectivity. In terms of communication, the use of artificial intelligence has a powerful effect on the presentation, filtering, and visibility levels of content. It can also lead to boundary violations regarding fundamental communication rights such as access to information, freedom of expression, and public discourse (2025: 59-60).

In the context of science communication, how artificial intelligence technologies are designed, used, guided by certain values, reproduced, and who they exclude (Durgeç, 2025: 60-61) must be carefully examined in terms of their role as actors. This is because rapidly changing systems have a very high capacity to transform human life. When focusing on science communication in the age of artificial intelligence, media environments that ensure the visibility of information are highly influential in circulation and meaning creation. Therefore, it is necessary to examine the role of artificial intelligence in science communication from a media perspective as a main topic.

2. Media and Science Communication

Today, media is viewed as an integral part and dominant actor in daily life. As a tool and source for acquiring, producing, and sharing information on a global and local scale, media fulfills many functions, while also acting as a conduit for bringing scientific knowledge to large audiences and disseminating it to society. Furthermore, the proliferation of digital technology and the increase in the number of media platforms make this interaction faster

and more effective (Çolak, 2025: 47). Science communication in the media is no longer conducted solely through mainstream media; it is now carried out in a multi-channel manner through the opportunities offered by digital platforms such as YouTube broadcasting, podcast production, blog posts, and streaming platforms. The internet and social media, as digital public sphere, serve as a forum for discussion on various issues. The interactive nature of new media tools permits every consumer to produce content, while new technologies and mobile applications enable society to participate in the scientific production process and facilitate collective production (Öztunç and Gürü, 2021: 255-256).

Another major point is how the media frames and excludes information in science communication. This choice involves the narration, construction, and representation of reality. For instance, the scientific content presented by the media is not of a nature that individuals can directly benefit from in their daily lives. The media, which presents natural sciences as truth, produces images that are far from valuing other branches of science. Therefore, all sciences are not equally represented in the media. Here, instead of creating social benefit, the media prefers to reinforce inequality and avoids research that reflects universality (Dursun, O. 2021: 199-200). Framing reality in both quantitative and qualitative ways means using information and power as a tool (Maigret, 2019: 265). While responsible broadcasting and the proportional use of this power by the media seems like an ideal model, the accessibility and comprehensibility of science communication are prominent for the accurate presentation, understanding, and application of scientific knowledge.

Deepfake productions, which have emerged with artificial intelligence, are causing a great misconception in the face of truth. In the post-truth era, the trivialization or normalization of truth is not inherent; rather, it is the power of technology and media that has led to this point. The risk of created fake content overshadowing reality is significant in every field. In science communication conducted through media, attention must be paid to the circulation and spread of misinformation in both conventional and new media environments. Maintaining trust in media and information is particularly valuable in conducting science communication on this issue.

Due to the dynamic context of science communication, determining an effective communication strategy requires considering fundamental princi-

ples such as purpose, vision, internal situation, external situation, responsibility, stakeholders, resources, and approach. Planning and evaluation are essential for flexibility along with analysis. Since which communication channel will reach whom depends on many factors, both fundamental principles and communication theories make a communication process more understandable. Theories enable distinctive perspectives and make sound decisions not only theoretically but also practically (Wehrmann and Dijkstra, 2022). To illustrate, agenda-setting theory is among these theories. The media establishes a hierarchy of priorities through "agenda-setting," thus telling us not what to think, but what to consider. Simultaneously, by making these selections, it also tells us what we should not to think about. At this stage, the level of trust citizens have in the media is influential. Citizens' knowledge and values do not always react positively to the impact of the agenda (Maigret, 2019: 255). In terms of science communication, it is crucial to conduct responsible science communication in the media, not only in fields that have become established academic disciplines, but especially during times of crisis and disaster.

In the relationship between media and science communication, specialization is a fundamental requirement for responsible science communication. Science reporting or science journalism requires well-trained individuals with competence in producing scientifically relevant news. Prioritizing specialization for the accurate reporting, handling, and interpretation of scientific content is a supportive approach in science communication (Gelmez Burakgazi, 2017: 253). Having science reporting conducted by experts and basing news on accurate and reliable sources is essential for both scientists and media professionals to conduct responsible communication with society. Being scientifically literate and using the media as a supportive tool for science communication is crucial for conducting logical discussions (Utma, 2021: 224). In science, technology, and innovation news, using language and narrative at a level understandable to the public is a requirement of social responsibility (Becerikli, 2013: 16). The necessary steps for effective science communication include conveying the knowledge produced by scientists to decision-makers and explaining this knowledge in clear and understandable terms, which is especially necessity in the age of artificial intelligence. Establishing trustworthy two-way communication channels, evaluating the process, and improving it, when necessary, notably enhances this impact (Cited in Arslan Eskiköy and Hiripsima Haçikoğlu, 2026: 178). Following the discussion on media and science communication -and understanding of

how this relationship should function- the question arises as to how feasible independent science communication truly is. Therefore, it makes sense to address this question in a subheading.

2.1. To What Extent Is Independent Science Communication Possible?

Following the impact of globalization after 1980, molecular biology, genetics, the pharmaceutical industry, certain medical fields, and communication sciences have been observed to be the scientific disciplines that best meet market demands. This demand leads to the commercialization of related activities. Therefore, it is significant that a theoretical endeavor is applicable, that the application must generate a technique, and that this technique translates into profit. The "relationship" between scientific disciplines and the private sector leads to commercial concerns determining research topics and a departure from the guidance of scientific rationale. At the heart of this debate is the inability to conduct independent scientific activity and establish healthy communication with it. The proposed solution is to re-establish the link between science and philosophy, for scientists to incorporate wisdom into the process, and for governments to implement more humane regulations (Güzel, 2010: 207-208).

From another perspective, in an independent discussion of science communication, it should be remembered that while there cannot be science completely free from politics at the micro and macro levels, research is best conducted independently of powerful individuals and weapons; moreover, without a state power that controls, directs, and intimidates (Bauchspies et al., 2024: 166). In this context, science communication should also be more functional if it operates as autonomously as possible.

It is difficult to conduct science communication independent of ideology, politics, and capital. This is because mastering the power problem in the connection between technology and society is not easy, and the relationship between the individual and the institution, and between technology and the individual (Bauchspies et al., 2024: 146), also makes independent science communication challenging. Science communication experts, stating that science communication "is within the capital-politics dichotomy of capitalism, also known as the political-economic system, but is not entirely subservient to the culture of subservience" (Dursun, Ç. and Dursun, O., 2021: 6-7), demonstrate that the struggle continues. Knowledge should not be the monopoly of anyone. Science, which should not be an activity controlled by privileged groups or individuals, is a systematic structure with democratic,

economic, social, and cultural dimensions (Gelmez Burakgazi, 2017: 233). Only in an environment where ideas can be freely debated and open to criticism will the development of science communication produced in the public sphere make a difference.

Science journalism, as one of the avenues of science communication, creates a contrast in terms of speed between the working style of journalists and scientists. While the media, especially online environments, focus on the rapid production and circulation of news, the logic of scientific knowledge production focuses on the discussion, maturation, and gradual dissemination of knowledge. While the popularization of science with speed seems like an advantage (Dursun, Ç., 2021: 266), it also creates the risk of instrumentalizing scientific knowledge. Therefore, conflicts of interest and disagreements also pose an obstacle to independent science communication.

Another concept that needs to be addressed in this section is the algorithm. Algorithms play a dominant role in manipulation. Algorithmic bias, filter bubbles, echo chambers, shadow banning, confabulation, and algorithmic bias are all relevant concepts. Limitations such as curation appear as negative distinctions in the operation of the algorithm. Algorithms, using the data they collect through digital surveillance, frequently present users with content similar to what they have previously shown interest in, employing recommendation algorithms. It is impossible for algorithms to be unbiased in the current environment. Essentially, they serve ideological purposes by monitoring user behavior (Uçar and Kamer, 2026: 85).

Algorithms, as tools of power that restrict and shape the public sphere, also facilitate access to information in one aspect (Uçar and Kamer, 2026: 94). However, while facilitating access, they also recirculate disinformation and other concepts discussed in the transforming structure of science communication. Furthermore, the algorithmic structure reproduces inequalities, intentional or unintentional messages, and the perceptions that are intended to be created and reinforced. While it has the potential to offer opportunities for the localization of scientific knowledge, it also allows large technology companies to establish a global regulatory framework. Therefore, although algorithms provide a partial advantage for the user in terms of rapid access to information, they primarily empower technology designers and governments.

Accuracy and participation are indispensable meaningful paths for independent communication. The process, involving different actor groups and

the media, cannot be considered independently of resource allocation, political conflicts, and the interests of different social segments; therefore, an analysis of all power relations is necessary. While science and technology are often reported uncritically by media professionals, whether they are adequately reported (Dursun, 2010: 23, 27) raises a debate regarding representation. The size of the space allocated to science communication in the media, in terms of equal representation, is another dimension added to the independence debate. Building independent science communication should be prioritized over the commercialization and instrumentalization of knowledge. Institutionally, there is a new policy framework in Turkey for the localization of scientific knowledge. The "Science Communication Offices" established in universities under the guidance of The Council of Higher Education (YÖK) are a step towards expanding and benefiting science communication. Finally, this chapter addresses these initiatives.

3. Science Communication Policy in Higher Education in the Age of Artificial Intelligence

In the age of artificial intelligence, the exponential growth of big data makes data management even more essential. Because this growing data increases the flow and density of information in every field, a policy needs to be established and the process controlled to manage this interaction. Science communication, targeting large-scale human communities, is one of the areas requiring policy. In Türkiye, higher education plays an educational role in artificial intelligence, and science communication policies include activities that facilitate discussion and interaction.

First, the establishment of the Scientific and Technological Research Council of Turkey (TÜBİTAK) in 1963 marked a significant milestone in Turkey's science and technology policy. The Turkish Science Policy Document, covering the period from 1983 to 2003, holds the distinction of being the first text in this field. Subsequently, the process progressed through four-year strategic plans. The event, which TÜBİTAK first began organizing in 2014 under the name "Science Talks," has been held in various countries since the 1990s as *"Café Scientifique"* continues today (Gelmez Burakgazi, 2017: 246-249). The higher education institution's science communication policy is also an empowerment model that follows these steps and aims to increase scientific literacy. The Council of Higher Education (YÖK) Science Communication Office, which began operating in February 2025, is an example of corporate responsibility. These offices, now operating in over 170 universities, organize various scientific events in different fields throughout

the year. “Science Café” events, a model that localizes scientific knowledge, are held in village cafes, fields, ferries, mining areas, nursing homes, historical markets, conference halls, and schools, facilitates direct communication with the public. With 1200 Science Cafe events organized in 2025, the council aims to encourage scientific production through communication. All activities aim to promote Turkish scientists domestically and internationally, connect the public with science, strengthen the connection between the knowledge produced in universities and society, and represent Turkey's level of development (Web_2). (06.08.2026).

The Productive Artificial Intelligence Guide prepared by TÜBİTAK is another rewarding resource in terms of science communication. It includes aspects such as potential risks, fundamental ethical principles, and the protection of personal data and intellectual and industrial property rights for responsible and reliable use of artificial intelligence. Prepared for individuals and groups applying to TÜBİTAK support programs and participating in the evaluation/monitoring process, the guide protects the processes, stakeholders, and actors (Web_3) (August 17, 2026). As a model of institutional and written science communication, a necessity of the artificial intelligence age, this guide is disseminated through digital platforms. The steps taken by TÜBİTAK since the 2000s are valuable as a state policy. Finally, the Turkey Artificial Intelligence Action Plan published for the 2026-2030 period is the most up-to-date policy step concerning science communication on artificial intelligence. The circular, which is a roadmap that foresees all stakeholders acting in harmony with the goals of artificial intelligence awareness, technological sovereignty, competitiveness, reliable artificial intelligence and sustainable digital transformation, is expected to be implemented under the coordination of the Ministry of Industry and Technology with the basic principles of “Recognize, Utilize, Produce, and Manage” (Web_4). (August 19, 2026).

Ensuring public interest in scientific topics and fostering positive perceptions and attitudes depends on prioritizing communication through the right channels (Yıldırım, 2021: 37). In this context, science communication and its tools have the power to guide societal progress. The resonance of science communication within society is invaluable. Interaction that contributes to social transformation strengthens the ability to generate solutions through collective intelligence, and finding scientific solutions to problems makes universities stronger institutions. In this context, TÜBİTAK, YÖK,

universities, and ministries are regarded as vital and active stakeholders in science communication policy in Türkiye.

Discussion and Conclusion

The phrase "the age of artificial intelligence," which defines our era, demonstrates that despite the opportunities, risks, and threats offered by the rapidly developing tools of AI, it has become humanity's primary source of reference. In the age of AI, science communication guides societies in comprehending, analyzing, and interpreting the technical and profound structure inherent in scientific knowledge. As a communication and interaction process, science communication is substantial in disseminating scientific knowledge produced in universities to a wide audience, acting as a mediator and bridge between society and scientists. Developments in artificial intelligence technologies are leading to transformations that directly affect science. Therefore, conducting discussions on the functioning of actors, policies, and processes is gaining significance. The systematic nature of scientific studies progressing on a global and national scale is carried out with the aim of improving human life. The media and science communication are needed to disseminate the results achieved in these studies.

Written with the aim of contributing to both national and international literature, this chapter seeks to answer three fundamental questions of discussion. The first of these is, *"How is artificial intelligence transforming the actors and processes of science communication?"* Artificial intelligence, as a technology that attempts to mimic the skills and competencies of human intelligence, affects all fields, including science, access to information, its communication, and its actors. It is known that it should be used in a supportive and helpful position, accompanying science communication in providing the information humanity needs. However, as an actor integrated into the process, it transforms the process both structurally and in theory and practice. In science communication, it does not assume a sole role, but by using its power, it increases the struggle for authority among the parties involved.

The second question, "Is it possible to conduct independent science communication activities in the face of algorithmic construction and relationships in the media?", addresses the fact that, in Kant's words, humanity, by daring to use its own reason, can overcome obstacles and reach the truth. At this point, humanity faces a powerful struggle against algorithmic construction and relationships. Independent scientific activity and its communication seem possible both in the public and digital public spheres through

the localization of knowledge without instrumentalization, by understanding artificial intelligence, reviewing relationships, considering societal benefit, and without undermining trust in science and scientists. Thirdly, in the context of "What kind of science communication policy should higher education institutions develop in the age of artificial intelligence?" It is suggested that a widespread, equitable, simple, and up-to-date science communication policy be developed that ensures AI integration, blends past knowledge and experience with present possibilities, and is interactive and participatory. In conclusion, artificial intelligence will carry on to function not merely as a new technology, but as a new actor transforming science communication, the media ecosystem, and higher education policies, demanding dynamic steps from the various scientific disciplines.

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Author Biographies

Elif ŞEŞEN

She obtained her bachelor's and master's degrees from Ankara University, her doctorate from Gazi University in 2015, and her associate professorship in the field of Communication Studies in 2018. She worked in the private sector between 2002 and 2005, and in the corporate communications departments of various public institutions between 2005 and 2015. Since 2015, she has been serving as a faculty member in the Department of Public Relations and Advertising at the Faculty of Communication, Niğde Ömer Halisdemir University. Her academic interests include political communication, new media, and public relations.

Şeyhmus DOĞAN

He completed his undergraduate education at Ege University, Faculty of Communication, Department of Public Relations and Advertising in 2007. He also received his PhD degree in 2015 from the Department of Public Relations and Advertising at the Institute of Social Sciences, Ege University. He worked in the private sector for thirteen years in the field of integrated marketing communications. The author, who attained the title of Associate Professor in February 2021, currently serves as a faculty member in the Department of Public Relations and Advertising at the Faculty of Communication, Niğde Ömer Halisdemir University.

Duygu ÜNALAN

She was born on November 22, 1985 in Eskişehir. She completed her undergraduate education at Anadolu University, Department of Turkish Language and Literature in 2008. In 2013, she completed her Master's degree at Anadolu University, Institute of Social Sciences, Department of Press and Broadcasting with her thesis titled "Change of Discourse Structure of News in Popular Newspapers in 1974, 1984, 1994 and 2004: The Example of Cumhuriyet, Hürriyet and Milliyet". In 2016, she graduated form PhD Degree from Anadolu University Social Sciences Institute, Department of Press and Broadcasting, with her thesis titled "An Analysis of the Novels of Halide Edip Adıvar, Reşat Nuri Güntekin and Yakup Kadri Karaosmanoğlu, who were writers of the National Struggle Period, in the Context of Popular Culture Content Features". In September 2021, she received the title of associate professor in the field of Communication Studies Science. She works on Popular Culture, Intercultural Communication, Journalism in the Digital Age and New Social Movements. She is still working as a lecturer at Niğde Ömer Halisdemir University.

Hülya Anakız ERTÜRK

She was born in Konya. She completed her bachelor's, master's, and doctoral degrees in the Department of Public Relations and Publicity at Selçuk University. Ertürk began her professional career in 2013 and has worked at Selçuk University and Niğde Ömer Halisdemir University.She is currently an Assistant Professor at the Faculty of Communication, Niğde Ömer Halisdemir University. Her research interests include migration, intercultural communication, new media, and artificial intelligence.

Serhat MADSAR

Serhat Madsar was born in Ankara in 1991. He completed his undergraduate studies in Public Relations and Publicity at Ankara University, Faculty of Communication in 2016. In 2019, he completed his Master's degree at Ankara University, Institute of Social Sciences, with his thesis titled "Social Media as a Tool for Political Communication: The Use of Twitter by Candidates in the 2018 Presidential Elections". He started working as a Research Assistant at the Faculty of Communication, Niğde Ömer Halisdemir University in 2019. In 2020, he began his doctoral studies in the Department of Public Relations and Publicity at Ankara University's Faculty of Communication, and in 2024, he earned his doctorate by defending his thesis titled "Reading Post-Truth Through Covid-19: Scientific Debates, Conspiracy Theories, and Individuals' Decision-Making Experiences. "As of 2025, he/she works as an Assistant Professor at Niğde Ömer Halisdemir University; He is interested in and works in the fields of new media, political communication, digitalization, and public relations.

Nur Gözde TAYFUR

Asst. Prof. Nur Gözde Tayfur is a faculty member and Head of the Public Relations and Publicity Program at Istanbul Yeni Yüzyıl University Vocational School. She completed her undergraduate studies in the Department of Archaeology and History of Art at İhsan Doğramacı Bilkent University on a full scholarship. Tayfur earned her master's degree in Marketing Communications from Maltepe University, graduating at the top of her class, and completed her PhD in Public Relations and Advertising with high honors. Following her education in art history, she further strengthened her academic orientation in the field of communication by completing a second bachelor's degree in Public Relations and Advertising at Anadolu University with honors. Her academic research is situated at the intersection of advertising, marketing, communication, and art with a particular focus on advertising, brand

communication, art marketing, and AI-assisted communication practices. As part of her academic activities, she teaches courses in various areas of communication, particularly strategic public relations, advertising, theories of persuasion, and rhetoric.

Esra AKARSU

She completed her undergraduate studies in the Department of Radio, Cinema, and Television at Başkent University. She continued her graduate studies in the Department of Public Relations and Publicity at the Institute of Social Sciences, Ankara University. Her master's thesis is titled "The Impact of Automobile Advertisements on Consumer Purchasing Behavior: The Case of Ankara Province." Her doctoral dissertation is titled "Ecological World Design: A Comparative Analysis of the Representation and Reception of Sustainability in the Media and Advertising Industries." The researcher, who completed her Ph.D. in 2024, specializes in advertising, critical consumer culture studies, new media, interdisciplinary AI debates, and sustainability communication. She currently serves as a Lecturer, Ph.D. at Ankara Medipol University.

Fatmagül SAFALI

Fatmagül SAFALI graduated in 2022 as the second-place student in the Department of Public Relations and Advertising at Necmettin ERBAKAN University and completed her master's degree in the Department of Communication Sciences at the Institute of Social Sciences, Niğde Ömer HALİSDEMİR University, in 2025. She wrote her master's thesis on "The Digital Transformation of Public Relations: Artificial Intelligence Applications." Her academic interests include communication, digital public relations, public relations and artificial intelligence, generative artificial intelligence, and content creation in public relations.

ISBN978-625-8882-17-9