



NEW MEDIA AND ARTIFICIAL INTELLIGENCE: A SOCIOLOGICAL ANALYSIS

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Abstract: Artificial Intelligence (AI) is revolutionising the way we interact with and consume media. The convergence of new media and AI has ushered in a transformative era in our society. From personalized content recommendations to the creation of entirely new forms of media, AI has become a driving force in the world of new media. This article explores the profound impact of AI on new media, shedding light on how it is reshaping content creation, distribution, and consumption. The paper analyses the contributions of several sociological theorists to the study of new media in the context of AI technology.

Index Terms: New media, Artificial Intelligence, Technology, Society, Sociology

I. INTRODUCTION

New media is a broad and evolving term that refers to various forms of digital communication and information technologies that have emerged in the latter part of the 20th century and continue to develop in the 21st century. It refers to “those digital media that are interactive, incorporate two-way communication and involve some form of computing,” (Logan, 2010). The term ‘media’, which is the plural of ‘medium’, has been used as a singular collective noun since about 1960s (Williams, 1977). Marshall McLuhan, a Canadian communication theorist, is perhaps one of the most influential thinkers in the field of media studies. He coined the famous phrase ‘the medium is the message’ (1994), emphasizing the importance of the medium itself in shaping human perception and behaviour. McLuhan’s work laid the foundation for understanding how new media technologies transform communication and culture.

‘New media’, is a relative term which has been used since the 1990s to set apart computing-based interactive media technologies from ‘old media’ forms, i.e., conventional media platforms particularly print media like newspapers, radio, and television, which historically consisted of one-way transmissions to large audiences. Thus, new media are the media forms that make use of digital technology such as social media and internet. A variety of web-related communication tools, such as blogs, wikis, online social networking, virtual worlds, and other social media platforms, are included in the new media technologies, also referred to as Web 2.0. (Friedman & Friedman, 2008). The most well-known specific examples of new media are undoubtedly social media platforms like Facebook, Google, Wikipedia, and Amazon. According to Professor Lev Manovich (2002), examples of new media include websites, virtual worlds and virtual reality, multimedia, computer games. On the contrary, Karl Thompson (2018) expressed, “The distinction between old and new media is somewhat artificial, as ‘old media’ technologies have today reinvented themselves so they are now also forms of ‘new media: newspapers are online and allow comments; radio and T.V. are similarly online and allow for greater levels of interactivity with the audience”. However, Lister et. al., (2008) claim that the main terms in discourses about new media are digital, interactive, hypertextual, virtual, networked, and simulated which are the six key characteristics that distinguish new media from old media.

Thus, it is concluded that the two key processes that mark the emergence of new media are the evolution of existing media delivery systems and the development of new communication technologies. For example, there is dramatic change in the way media content is delivered since past 30 years or so, as recently as the 2000s, when most people received television visuals through aerials, and there were only few terrestrial television channels available. Now, high-definition, flat-screen digital televisions and access to hundreds of digital satellite and cable TV channels are common. Neil Postman (2005) examined how the visual and entertainment-oriented nature of television was changing the way people processed information and engaged in public discourse. On the other hand, new forms of technology have enabled different modes of communication in daily life. Along with personal computers and mobile phones as relatively new technologies, the most innovative technology that has appeared is 'internet'. These new media technologies, particularly the internet, have led to the rise of networked forms of organization and communication, profoundly impacting social structures and identities. (Castells, 2004).

II. SIGNIFICANCE OF ARTIFICIAL INTELLIGENCE IN NEW MEDIA

Artificial Intelligence (AI) has emerged as a key player in the field of new media, influencing everything from personalised content recommendations to the invention of completely new kinds of media. Therefore, it can be affirmed that AI has facilitated evolution of more intelligent new media in the realm of networking and communication.

AI algorithms in content recommendation

The distribution of personalised content is one of the most obvious ways AI has changed new media. The time when everyone saw the same news reports, commercials, or entertainment suggestions has long since passed. To create content that is suited to each person's preferences, AI algorithms combine through enormous volumes of data, including user preferences, behaviour, and demographics. Streaming platforms like Netflix and Spotify are pioneers in this domain (Matuszewska, 2023). They use AI to suggest movies, TV shows, songs, and playlists that match users' interests, thereby enhancing the overall user experience. These algorithms continuously learn and adapt, making recommendations more accurate over time.

AI-driven Content Creation and Automation

Automated content generation powered by AI can produce articles, reports, and even creative writing. For instance, news organizations employ AI to write sports summaries, financial reports, and weather updates, freeing up human journalists to focus on more complex and investigative stories. Additionally, the creative sectors are not being ignored. AI-powered technologies are capable of creating video games, music, and other works of art. The development of AI-generated compositions in the music industry has been seen, and artists are using AI to help them create visual content, pushing the limits of creativity. Gans (2008) in his work on media and culture, offers a lens to examine how AI-driven media influence cultural production and consumption which resultantly can offer an exploration how AI can both automate content creation and personalize content delivery.

Enhanced Media Production

In the realm of media production, AI is streamlining processes and reducing costs. Companies that produce videos and movies use AI to perform jobs like video editing, colour grading, and special effects. In order to improve the overall quality of production, AI-driven software may analyse scripts and recommend the best camera positions. Deepfake technology, a controversial application of AI, is also transforming the way movies and television shows are made. It allows filmmakers to seamlessly replace actors or manipulate scenes, offering new creative possibilities while raising ethical concerns about misinformation and consent.

Augmented and Virtual Reality

AI plays a crucial role in the development of augmented reality (AR) and virtual reality (VR) experiences. AI algorithms enhance the immersion of AR and VR by recognizing and adapting to users' surroundings in real time. These technologies are revolutionizing gaming, education, and marketing by creating immersive, interactive worlds.

AI in Journalism

AI-powered chatbots and virtual news anchors are being used in the news industry to provide real-time updates and answer user questions. These technologies enable news outlets to deliver news efficiently and promptly, especially during breaking news events. This growing number of AI anchors is powered by machine-learning algorithms, which analyse data from news articles to videos. As the Indian government website INDIAai describes them, an AI anchor "collects, tracks and categorizes what is said and who said it, and then converts that data into usable and actionable information" (Lal, 2023).

III. CHALLENGES AND ETHICAL CONSIDERATIONS

While AI has opened up exciting possibilities in new media, it also raises important challenges and ethical considerations. Ethical concern in AI is not only of equal importance as in the other distinguished sciences but an endeavour of utmost priority to be dealt in autonomous technology like artificial intelligence.

Bias and Fairness: AI algorithms can inherit biases from their training data, leading to biased content recommendations and automated content with unintended prejudices. One well-known example of bias in AI is gender bias in Natural Language Processing (NLP) models. Many AI language models, such as GPT-2 and BERT, have been found to exhibit gender stereotypes and biases in their outputs. Biased AI algorithms can perpetuate discrimination by showing content or making decisions that favor or disfavor certain racial, gender, or demographic groups. For instance, when prompted with sentences like 'He is a doctor, she is a nurse', these models might generate responses like 'He is busy, and she is caring', reinforcing gender stereotypes that associate males with careers like doctoring and females with nurturing roles.

Privacy Concerns: AI systems that analyze user data to personalize content raise privacy concerns. AI-driven platforms may gather more data than necessary, potentially infringing on users' privacy by collecting sensitive information without consent. AI algorithms analyze user behavior to create detailed profiles, which lead to intrusive targeted advertising and manipulation of users' preferences. Striking a balance between personalization and privacy is an ongoing challenge.

Job Displacement: The automation of content creation and media production may lead to job displacement in the creative industries, necessitating retraining and adaptation. As a result of current technical advancements in artificial intelligence and allied technology, new challenges and opportunities relating to the organisation and structure of work are constantly arising.

Misinformation: On desktops and mobile devices, artificial intelligence is increasingly integrating into our social media landscape. With the use of new generative AI tools, anyone can now more easily create text, images, music, and video. The ease with which AI can generate convincing fake content, such as deepfake videos or manipulated news articles, poses a significant threat to media integrity. It's increasingly tougher to identify what is true and what has been modified as AI-generated content is used more widely.

Regulation and Accountability: The rapid development of AI in new media demands effective regulation to ensure responsible use and accountability for harmful outcomes. For example, some of the fundamental ideas that underpin the European approach released by European Commission (2021); AI systems must enable human autonomy and decision-making, be technically sound and risk-averse, ensure that privacy is protected, and be open and transparent. Additionally, they must assure accountability, fairness, non-discrimination, and diversity. Thus, it has become serious area of academic study within AI. Researchers have discovered it is not always possible to define 'fairness' in a way that satisfies all stakeholders (Russell & Norvig, 2021). In order to maintain public faith and trust in the technology, the Global Partnership on Artificial Intelligence, which was established in June 2020, emphasised the importance of developing AI in accordance with democratic principles and human rights (UNESCO, 2021). Also, Leaders of OpenAI released guidelines for 'superintelligence governance' in 2023, anticipating its arrival in less than 10 years (Altman et. al., 2023).

IV. REDEFINING SOCIOLOGICAL PERSPECTIVES ON NEW MEDIA INTERSECTING ARTIFICIAL INTELLIGENCE

Sociological perspectives provide valuable insights into how these technologies affect individuals, communities, and society as a whole. The integration of AI into new media is a dynamic and evolving field of study, offering opportunities for sociologists to analyze the profound social changes and challenges brought about by AI technology in the digital age. This section presents an analysis of how different sociological perspectives can be used to the study of new media in the context of AI revolution.

CAUSAL FLOW BETWEEN TECHNOLOGY AND SOCIETY

Nancy K. Baym (2015) offers categorisation of four major perspectives that study causal flow, i.e., the complex interplay between technology and society as discussed in this section. AI, as a rapidly advancing and influential technology, has profound implications for various aspects of society, and these perspectives can shed light on how AI shapes and is shaped by social forces.

Technological Determinism: There is a strong tendency, when technologies are new; to view them as causal agents entering societies as active forces of change that humans have little power to resist (Baym, 2015). In other words, technology determines the way society evolves, and human agency has limited influence. It often assumes a unidirectional relationship from technology to society, where changes in technology lead to inevitable changes in social structures and behaviors. In the context of AI, technological determinism might suggest that AI technologies have inherent qualities that will inevitably drive certain societal changes. For example, automation of jobs through AI and the use of AI in decision-making processes might inevitably lead to shifts in employment patterns and power dynamics.

Social Construction of technology: Social constructivism or determinism takes the opposite stance, emphasizing that societal values, norms, and structures determine the development and use of technology. In this perspective, technology is seen as a product of social forces and cultural factors. It argues that society shapes technology to align with its needs and values, and technology is a reflection of the social context in which it emerges. It argues that people are primary sources of change in both technology and society. Social constructivism regarding AI posits that societal values, norms, and structures significantly influence the development and deployment of AI systems. This perspective emphasizes that AI technologies are not neutral but reflect the biases and interests of those who create and use them. For example, discussions about AI ethics and fairness highlight how societal values impact AI design and implementation.

Social shaping of technology: This perspective sees technology and society as continually influencing each other. This mutual shaping perspective posits that technology and society are mutually constitutive and influence each other in an ongoing, bidirectional manner. It acknowledges that technology can impact society, and society can impact technology in a dynamic feedback loop. It emphasizes the co-evolution of technology and social practices, with neither being the sole driver of change. The mutual shaping perspective is particularly relevant to AI because it acknowledges the reciprocal relationship between technology and society. AI technologies are developed in response to societal needs, and their use can, in turn, transform social practices and institutions. The role of AI in healthcare, for instance, is shaped by both technological advancements and changing healthcare needs and policies.

Domestication of technology or technological instrumentalism: It views technology as a neutral tool that can be used in various ways depending on human choices and intentions. It asserts that technology itself does not determine outcomes; rather, the impact of technology on society is contingent on how it is employed by individuals and institutions. Human agency is central in this perspective, and people have the power to shape the consequences of technology through their decisions and actions. Ultimately, people stop questioning individual technologies. Through the process of domestication, they become taken-for-granted parts of everyday life, no longer seen as agents of change. Technological instrumentalism in the context of AI underscores the idea that AI is a tool whose impact on society is determined by human choices and actions. It emphasizes the role of individuals and organizations in shaping how AI is used and governed. Debates over AI regulation, privacy, and transparency align with this perspective, as they focus on how people can make deliberate choices to harness benefits of AI while mitigating potential harms.

SIGNIFICANT INSIGHTS ON MEDIA AND AI USING SOCIOLOGICAL THEORIES

The social thinkers have offered valuable insights into the complex relationships between new media technologies and society. Their research and writings have shaped the field of media studies and continue to inform our understanding of the ever-evolving landscape of digital communication and its societal implications. The emergence of artificial intelligence (AI) technology has significantly influenced the field of new media, and these theories add valuable contributions in understanding the complex interplay of new media and AI.

Baym (2015) conducted research on online communities and social interactions in digital spaces. Her work sheds light on how people form relationships, share information, and build communities in online environment. Her work helps us understand how AI algorithms and recommendations may shape online social dynamics, such as the formation of echo chambers and filter bubbles.

Turkle (2011) focuses on the psychology of human-computer interaction. Her book 'Alone Together' (2011) delves into how technology, including social media and smartphones, affects our relationships and sense of self. She explores how people interact with AI-driven chatbots, virtual assistants, and social robots, and how these interactions affect their emotional and social lives.

Castells (2004) introduced the concept of the 'network society', emphasizing the role of digital communication technologies, including AI-driven platforms, in reshaping social structures. He highlighted how new media and AI contribute to the formation of networked social relationships, economic systems, and cultural dynamics.

Bauman (2013) wrote about the concept of 'liquid modernity', suggesting that in the age of new media and globalization, social structures have become more fluid and less stable. His work addresses the changing nature of identity, community, and social bonds in the digital era. Bauman's concept of 'liquid modernity' is applicable to the evolving nature of social relationships in the digital age. This importantly gives insight on how AI-mediated communication, including social media and dating apps, can create a sense of fluidity and instability in social connections.

Postman's critique of the impact of technology on culture, as seen in 'Amusing Ourselves to Death (2005)', is relevant to the discussion of AI in new media. He argued that individuals are amusing themselves to death by becoming passive consumers of entertainment rather than engaged citizens (Giddens & Griffiths, 2006). His insights are applicable to the role of AI in shaping content consumption and its implications for public discourse.

Bourdieu's concepts of cultural capital and habitus (1967) are very relevant to analyze how AI algorithms influence the distribution of cultural content in new media. Habitus is intended to transcend a series of deep-seated dichotomies that shape ways of thinking about the social world (Maton, 2012). The theory is preferable to the role of AI in recommending and curating content affects the cultural preferences and practices of individuals.

Jenkins (2008) explored the convergence of media and the spread of participatory culture in the digital age. He examined fan communities, transmedia storytelling, and the ways in which media audiences actively engage with content. He emphasised transmedia storytelling as "the art of creating a world" stated that "a story can be introduced in a movie, expanded with television, novels and comic books and the world of it can be discovered and experienced with games." His research has relevance in understanding how AI-driven content generation and transmedia storytelling influence user engagement and creative participation.

Boyd's (2009) research on youth culture and online social networks sheds light on how young people engage with social media which is omnipresent. Similarly, her work is relatable to draw insights on young people's engagement with AI-driven technologies, such as chat bots and virtual influencers, and how these technologies impact their social and cultural experiences.

Baudrillard's writings on 'hyperreality' (1983) and the blurring of the boundaries between the real and the simulated have been influential in discussions about the impact of digital media and virtual reality on contemporary culture. His concept of 'hyperreality' is relevant to understanding the blending of reality and simulation in the age of AI. He defined 'hyperreality' as 'the generation by models of a real without origin or reality'. He provocatively questioned the authenticity of experiences in an AI-driven world, where simulations and virtual realities become integral to new media.

V. CONCLUSION

With the advent of artificial intelligence (AI), the landscape of new media is reshaping in profound ways. From personalized content recommendations to automated content creation, AI is at the forefront of transforming the media industry. However, as we continue to integrate AI into new media, it is crucial to address the ethical concerns and challenges to ensure that AI serves as a force for positive change in the way we create, distribute, and consume information and entertainment. The future of new media is undeniably intertwined with the capabilities of artificial intelligence, and it promises to be an exciting and transformative process.

The intersection of AI technology with new media influences various aspects of society, including culture, identity, relationships, and social structures. Sociological studies of new media are essential for understanding the complex interplay between technology and society. They help us grasp the social implications of digital communication technologies and how these technologies both reflect and shape our social world. The significant contributions of sociological theorists in understanding new media and communication technology is valuable in studying the complex dynamics of the digital age and the role of AI in shaping the landscape of new media and social interaction. Additionally, the researches in this aspect can inform policymakers, industry stakeholders, and the public about the challenges and opportunities presented by new media.

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