From Tools to Actants: An Affordance-Based Framework for AI's Triple Impact in Deeply Mediatized Societies

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Abstract: With the increasingly widespread application of artificial intelligence (AI) technology in the media industry, it has brought about fundamental changes in production, distribution and consumption patterns. This study uses the concept of deep mediatization and affordance theory to create a three-part framework for analyzing the technological, social, and ecological effects of AI on the media. Research shows that algorithmic automation makes operations more efficient, but it also brings problems, like moral dilemmas and changes in the balance of power in the sector. The proposed model helps media agencies better understand how media systems are changing in a sociotechnical way and gives journalists helpful ideas for dealing with the new problems that arise when professional media values and technological possibilities clash.

1. Introduction

The media industry has changed in ways that have never happened before in the last few years, due to the rise of generative AI tools like ChatGPT, DeepSeek-R1, and Midjourney. Market research reveals that the global AI-in-media market will be worth USD 99.48 billion in 2030, with a compound annual growth rate (CAGR) of 24.2% from 2025 to 2030 [1]. These new AI tools have changed the way news is made and the way people get information. By automatically editing videos and writing simple articles, they help improve new production efficiency. At the same time, the systems show people things they might like, by using algorithms to recommend personalized content that users might want to read next. However, this integration of technology has brought about a number of difficult problems, such as less accurate news, more biased algorithms, and the gradual replacement of professional jobs in journalism [2].

These have led to a clear tension between media efficiency gains and value deterioration in public service. This paper looks at how AI is changing the media industry area. It focuses on three main aspects:

·How AI is changing media production, social interaction, and mobility affordances.

·The shifting relationship between human, technology, and society in digital spaces

·Ways to balance innovation with public needs in media.

This study goes beyond the usual argument between technological determinism and social constructivism by combining Gibson's affordance theory (how technology enables or limits human actions) and Hepp's deep mediatization concept (how digital technologies become a part of everyday life). This synthesis may provide a new perspective to probe into "AI-media affordance."

2. Theoretical and Analytical Framework

2.1. Deep Mediatization

Deep mediatization is a more advanced stage of mediatization in the digital age. In this stage, AI, algorithms, and data systems are now basic building blocks that change how our society works in real time, from being simple "information transmission tools" to being basic structures that change the way the political, economic, and cultural spheres work. According to Hepp, the hallmark of deep mediatization is its "de-intermediation" effect, which means that media are now deeply

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ingrained in the social fabric and act as "operating systems" that influence social relations rather than just acting as "bridges" linking social elements [3]. AI-driven recommendation algorithms, for example, change how news is distributed and how people think about information, and they can even have an impact on political agenda-setting (e.g., social media opinion polarization) [4]. There are three main trends that define this process:

Permeation of technology: AI and big data technologies automate and intellectualize media practices, like using generative AI (AIGC) to produce news instantly.

Social convergence: Short-video platforms that concurrently promote social interaction, consumption, and political engagement demonstrate how the lines separating media logic from everyday life are blurring.

Power reconfiguration: Platform giants (e.g., Meta, ByteDance) emerge as new power centers through data monopolies, eroding the authority of traditional media.

By emphasizing the "recursive" reshaping of social structures through media materiality (such as algorithms and data centers), deep mediatization theory goes beyond the institutionalist approach of traditional mediatization studies [5]. This viewpoint emphasizes how technology has two distinct dynamics: it shapes society and transforms it.

2.2. Affordance

Affordance theory, which is based on ecological psychology, first looked at how environments give actors the chance to act [6]. Later, Latour built on this framework to stress how people, technologies, and environments interact with each other in a dynamic way [7]. Thus, when thinking about how AI can be used in the media industries, it can be seen as having three important dimensions of affordance:

Firstly, technological affordances include AI's ability to change how things are made. For example, automated content generation, like ChatGPT writing news articles, makes production more efficient. Secondly, social affordances affect how people and machines interact with each other. Virtual influencers like A-SOUL create parasocial relationships that change the way real creators and audiences interact with each other. Finally, ecological affordances change the balance of power in the industry. Big companies like Meta use AI tools to control the advertising market, which makes it harder for smaller media companies to compete.

The structure of this essay finds a middle ground between two opposing theoretical paradigms that have long existed in communication and technology philosophy, technological determinism and social constructivism. Instead of viewing AI as either all-powerful or just a tool, it sees AI as an active "actant" that shapes - and gets shaped by - the human and systems it interacts with.

2.3. Analytical Framework

This study is based on the idea of deep mediatization and mediatization. It suggests a model for how AI can be used in the media, focusing on three main effects that AI has on the media industry. The model has three parts that work together. The technological part discusses how AI will change how media is made. The social aspect delves into how AI will change the way people and machines interact with each other and the morals that govern those interactions. The ecological factor sheds light on how AI changes the way media systems work, especially the fight for platform monopoly and data ownership. This three-dimensional model scrutinizes the effects of AI on "techno-social-ecological systems," which includes all three elements, instead of just analyzing technology in a one-dimensional way. The model takes into account both the positive and negative effects of technology on society, making it a good starting point for future real-world media studies.

3. The Triple Impact of AI on Media Affordances

3.1. Production Affordance: From "Labor-Intensive" to "Algorithm-Intensive"

The media industry is changing greatly from the perspective of news production. For example, the Xinhua News Agency's Media Brain System uses AI technologies like DeepSeek-R1 to

intelligently change the whole news production process. Besides, these changes are most clear when it comes to high-volume information like financial reports, sports coverage, and weather forecasts, where it is important to process and share large amounts of data quickly. For instance, studies show that the Associated Press uses AI to write thousands of financial articles every three months. This shows that technology can handle a lot of digital information and make content that is consistent and up-to-date [8]. This trend is not only making news production run more smoothly, but it's also changing how businesses think about making content. Automated processes that use algorithms are slowly taking the place of traditional ways that reporters and editors work together in newsrooms [9]. AI-powered canned journalism has been shown to make newsrooms more productive, but this efficiency comes at the cost of more standardization and fewer chances for professional editorial judgment. This efficiency means that there are fewer chances for professional editorial judgment and more standardization.

Apart from that, AI's growth is changing the basic logic of how content is made. Tools like ChatGPT have made it much easier for people with basic skills to write text that looks like it was written by a professional. This increased "editability" has two effects: it democratizes the process of creating content, but it also increases the dangers of homogenization. AI systems can also automatically make thousands of different pieces of content from a single event, which is even more important. This kind of "scalability" meets platforms' need for enormous volumes of content, but it slowly takes away the unique quality that traditional media is known for. AI-generated content (AIGC) technologies make it possible to make a lot of user-generated content at once on short-video sites like TikTok. This change lowers production costs, but it also makes the content look more like templates. All of these changes point to the fact that AI applications are changing the standards for quality and value in media production.

3.2. Social Affordances: The Reconstruction of Human-Machine Interaction and Emotional Bonds

From a media sociology perspective, AI technologies are fundamentally altering the paradigms of social interaction within the media industry. Goffman's theory of dramaturgy provides fundamental insights, which view social life as a performative act divided into "front stage" and "back stage" activities [10]. Virtual idols like A-SOUL are not merely technological spectacles, but rather carefully crafted "digital front stages." Through algorithmically produced expressions, linguistic styles, and modes of interaction, these digital personas manage to create "parasocial relationships" that successfully elicit actual affective investment on the users' part. This emergent modality of social interaction challenges conventional theories of interpersonal communication, compelling us to rethink the very notion of "authenticity" in the age of digitality.

Social emotion theory is of the opinion that human emotional bonds are established upon reciprocal empathy and communal experience [11]. However, affective performances of AI models remain in effect imitative actions via pattern recognition. When news applications boast having "AI editors" that mimic worry, this emotional aspect is in reality a semiotic exchange enabled by natural language processing technologies. From this point, Baudrillardian theory of simulation gives particularly strong explanatory power to areas of authenticity [12]. The proliferation of AI-manufactured content (such as Deepfake news) accelerates the arrival of a "hyperreal" world where boundaries between simulation and the real become increasingly blurred. This presents audiences with previously unheard-of difficulties in sustaining critical reception capacities as AI produces ever-more-accurate replicas of human emotional expression.

Furthermore, the evolution of AI's social affordances raises pressing normative questions. Treating people as ends rather than means is emphasized by Kantian ethics, a principle that encounters major obstacles in social applications mediated by AI. Does this fit the definition of "emotional exploitation," which is when users' emotions are systematically directed and used for profit by carefully planned algorithmic behavior? And does the fact that AI systems don't really mean to show emotions make people worry about the "hollowing out" of social interaction? Due to the change of technology, these theoretical questions are critically pressing.

3.3. Mobile Affordances: Contextualized Communication and Power Redistribution

3.3.1. Contextual Affordances: AI's Reshaping of Temporal-Spatial

The rise of AI technologies has completely changed how media communication works in terms of space and time, turning it from a simple transfer of information into a system that takes context into account [13]. The recommendation systems on websites like Jinri Toutiao (literally Today's Headlines), ByteDance's news aggregation platform, are a good example of this change. It uses multi-layered user profiles, which include behavioral biometric data, geographic information, and temporal patterns, to make content better in real time.

The system prefers content that has already been consumed in the feedback loop that follows. This often leads to a self-reinforcing cycle of homogenization that creates what Pariser calls a "filter bubble" that further reduces cognitive diversity [14]. The rise of AI agent ecosystems that use predictive behavioral targeting, like Mindray Technologies' Cognitive Ranking platform, makes these problems even worse. Zuboff calls this "instrumental power," and these systems use geographic analysis and real-time social media activity to get it. This makes it possible to turn user actions (like how long they spend on a site or how fast they scroll) into behavioral redundancies that make predictive models more accurate [15]. These kinds of contextual needs models make marketing more effective, but they also make users worry that people are losing their ability to make their own decisions when they are online.

3.3.2. Power Affordances: Platform Monopolies and Data Control

At the macro-structural level, the use of AI has completely changed how power works in media ecosystems, creating what van Dijck calls the "platform society" [16]. Big companies like ByteDance and Tencent have made "data-traffic-capital" cycles that keep going through their own recommendation systems. The way TikTok's algorithm works is a good example of this. It uses a three-tiered filtering system that: 1) puts content that fits with the platform's engagement metrics at the top; 2) gives visibility to creators based on opaque creator capital weighting; and 3) systematically pushes non-commercial cultural production to the edges. This is what Couldry and Mejias call "data colonialism" [17], where the rules for running a platform take over the role of traditional media as gatekeepers.

Ecosystems that seem open on the surface, like ByteDance's "Douzi" and Tencent's "Yuanqi," show deeper imbalances. They allow third-party AI development through APIs, but they also enforce strict protocol compliance and charge for access to distribution channels. Market research shows that independent developers say that algorithms are blocking content that goes against platform preferences. Smyrnaios calls this "platform imperialism," where centralized technological and financial resources make it impossible for new businesses to get in [18]. Because of this concentration of infrastructural power, it needs to rethink media pluralism in terms of algorithms and new ways of governing that balance technical efficiency with democratic accountability.

4. Challenges and Countermeasures

4.1. The Change from "Media Logic" to "AI Logic": Value Rebuilding and Profound Challenges

AI technologies are speeding up the shift from traditional "media logic" to new "AI logic," which is causing the media industry to fundamentally change its standards of value. Traditional journalism based its values on truthfulness, objectivity, and serving the public. However, the rise of AI has brought in new standards that put immediacy, personalization, and traffic orientation at the top of the list. This has caused a lot of conflict in the field. This "speed-first" approach meets the market's need for real-time information, but it also dangerously distorts value judgments. For instance, during the Yunnan AI rumor incident, fake videos of a "major Dali traffic accident" made by AI and algorithmically sent to people who liked "accident news" got 500,000 views in two hours, which caused panic in the area. Another well-known case involved a fake video of Matthew Miller,

the U.S. State Department's spokesperson, talking about the war. This video was widely shared on Russian Telegram channels and state media.

Most importantly, personalized distribution weakens the media's ability to set the agenda. As customized information streams take the place of shared news experiences, the very ways that society builds consensus are in danger like never before. These changes make it necessary to quickly redefine journalistic values for the AI era, which needs careful balancing between quickness and depth, individualization and public importance, as well as editorial judgment and the efficiency of algorithms.

4.2. The Emerging Human-AI Collaborative Production Ecosystem: Operational Frameworks and Competency Reconstruction

The deep integration of AI technologies in media has led to a new type of production model called "human creativity & AI execution." This model fundamentally changes professional roles instead of just replacing them. *The Wall Street Journal's* report about "NVIDIA's Blackwell Architecture Chip Delivery Delays" is a typical example of this. Investigative journalists led strategic planning (looking at how geopolitical factors affect supply chains) and core interviews (with TSMC executives and supply chain experts), while AI systems handled data aggregation (scraping 100,000 financial reports), contextual research (looking at how interest rate cycles have affected stock performance over the past five years), and draft writing (writing 800-word articles with data comparisons and expert commentary). This division of labor freed journalists from doing the same things over and over, which allowed them to do more in-depth research. The Pulitzer-nominated piece eventually revealed the technological embargoes and market dynamics that were causing AI computing bottlenecks. The BBC's Climate Crisis series showed even more synergies. AI used data from 200 weather stations around the world to make visualizations and trend projections, while journalists wrote about how climate change affects people and how policies have failed, creating work that was both scientifically sound and deeply human.

This partnership, however, brings with it new professional responsibilities. Now, journalism education needs to teach students how to be "AI literate," which means knowing how to train AI systems, fix algorithmic biases, and check the accuracy of data. The UK's National Council for the Training of Journalists is changing its curriculum for 2024 [19]. The amount of AI-related coursework will increased significantly, and it will include "algorithmic ethics," "data verification," and "human-AI collaboration methodologies." Reuters' hiring criteria for 2025 clearly state that candidates must know how to "verify news with AI" and "evaluate the credibility of AI-generated content."

These changes show that there is a growing need for hybrid professionals who have both journalistic skills and technical skills. This is the most important thing for long-term human-AI collaboration in the next generation of news ecosystems.

4.3. Ethical Dilemmas: Escalating Contradictions and Governance Pathways

The widespread use of AI in media has led to serious ethical problems, with algorithmic bias, privacy violations, and unclear copyright issues reaching dangerous levels. Studies show that there is systemic discrimination in how content is distributed. Stories about minorities get much less attention than stories about the majority [20]. This is also true in sports media, where female athletes are often left out of algorithmic promotions.

The ProPublica investigation showed that there is systemic discrimination in content distribution. Stories about minorities got 37% less exposure, and reports about "police brutality" in African American neighborhoods got only one-fifth the exposure of similar reports in white neighborhoods [21]. This algorithmic bias not only violates the rights of minorities, but it also makes information less fair. For example, during the Paris Olympics, despite being the first gender-equal Games, algorithms gave female athletes only 43% of the promotional visibility, whereas male athletes were the focus of 57% of all stories [22].

In addition, the application of AI in media has also brought privacy breaches and copyright quagmires, showing significant gaps between technological capabilities and regulatory oversight.

For instance, Meta's news recommendation models were trained on the browsing data of its users, which was hit with 11 complaints over proposed changes that would see it use personal data to train its artificial intelligence models without asking for consent, which breaches European Union privacy rules [23]. Even worse, news organizations collected geolocation and consumption patterns without permission to power "personalized news" algorithms. In 2023, Science magazine turned down AI-generated abstracts because they weren't clear about who wrote them. Reuters, on the other hand, caused a stir by giving credit for an AI-generated Fed Rate Hike Analysis to its editorial staff, which led to a backlash from the union. All these contradictions can show how the gap between technological progress and regulatory frameworks is getting bigger.

Multilayered governance is necessary for effective solutions. First, there should be cross-disciplinary ethics boards made up of media scholars, technologists, jurists, and civil society representatives that come up with rules that everyone must follow. Also, there are algorithmic auditing tools like MIT's "AI News Bias Detector" that can automatically check for bias. The California AI news act (*Safe and Secure Innovation for Frontier Artificial Intelligence Models Act*), which has sparked multiple discussions in Silicon Valley and local areas, is an example of legislative innovation because it requires preventive measures must be implemented before training complex basic models.

5. Conclusion

This study's "AI-Media Affordance" framework goes beyond traditional one-dimensional technology studies and provides a theoretical framework for looking at how media changes in the age of AI. For media agencies, it is now necessary to create new organizational structures that are suitable for the AI era. The creation of "AI Ethics Officer" positions is just the beginning. What is much more important is that institutions need to create ways for humans and AI to work together throughout the entire content production process. For example, *The New York Times* is testing a "human-augmented AI" production workflow. To help journalists develop their skills, it's important to improve their algorithmic literacy and critical thinking skills so they can deal with technological changes instead of just accepting them. These steps make sure that using AI responsibly in the media requires not only technical skills but also a strong commitment to democratic values and social responsibility. The way forward is not to deny AI or blindly copy it, but to build moral fences that protect journalism's public purpose while still allowing AI to be powerful.

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