


## METaverse AND VIRTUAL JOURNALISM

Dan-Valeriu VOINEA , Ph.D., University of Craiova, Romania

### Abstract

The concept of immersive virtual worlds, sometimes termed the "metaverse," represents an emerging frontier for digital journalism. This paper provides a synthesized literature review focusing on scholarship regarding immersive and virtual journalism. Drawing on foundational texts and peer-reviewed research, it defines key concepts and critically examines the potential evolution of journalism within immersive environments. By analyzing existing scholarship from a global perspective, this paper identifies significant patterns, contradictions, and gaps in understanding. Key theoretical lenses, including media convergence, digital journalism ethics, and immersive presence theory, frame the analysis. The synthesis reveals a consistent vision of immersive journalism as an extension of digital practice, offering first-person news experiences. Dominant patterns identified in the literature include the reliance on technological advancements, a shift towards heightened audience interaction, the emergence of novel ethical dilemmas, the experimental nature of business models, and evolving journalistic practices. Contradictions emerge between the potential for immersive engagement and concerns regarding accuracy and ethical risks. Significant gaps noted in the literature include empirical research on audience effects, sustainable monetization, and standardized ethical protocols. While immersive technologies offer opportunities for engaging storytelling, substantial challenges—ranging from infrastructure disparities to normative uncertainties—were apparent. The paper concludes that immersive journalism holds potential to influence the future of news, but realizing this requires addressing identified gaps through targeted research, collaborative innovation, and inclusive strategies.

**Keywords:** *Metaverse, Virtual Reality, Immersive Journalism, Digital Journalism, Media Ethics, Presence Theory*

### Introduction

The idea of the "metaverse," originating in science fiction (Stephenson, 1992), gained traction in discussions about the future trajectory of digital media and communication. Broadly conceived as a network of persistent, immersive virtual worlds where physical and digital realities converge, such environments

present novel platforms for human interaction and potentially, journalism. Within this context, “virtual journalism” or “immersive journalism” signifies the practice of producing and disseminating news content within shared 3D environments, representing a potential paradigm shift towards interactive, embodied news experiences beyond flat screens.

The exploration of immersive journalism aligns with the historical pattern of journalism adapting to new technological platforms. The potential of immersive technologies to offer audiences a profound sense of presence—virtually transporting them to the scene of events—had captured scholarly attention (Robitzski, 2017). This promise built upon earlier experiments in immersive journalism using 360° video and virtual reality (VR), which aimed to deepen audience understanding and engagement through first-person experiences (De la Peña et al., 2010; Robitzski, 2017).

This paper undertakes a critical synthesis of the academic literature examining the intersection of journalism and immersive virtual environments. Its primary contribution lies not merely in summarizing existing work, but in identifying and analyzing the patterns, contradictions, and crucial gaps within the body of scholarship. We seek to answer: How was immersive journalism conceptualized and theoretically framed in the literature? What consistent themes and contradictory findings emerged from research? What were the key challenges and opportunities identified across diverse global contexts based on the available sources? And, importantly, where did future research need to focus according to the understanding prevalent in the reviewed literature?

The significance of this inquiry remains substantial. As immersive technologies continue to develop, understanding their potential impact on news production, dissemination, and consumption is vital. By adopting a global perspective based on available literature, this review acknowledges the uneven development and adoption of virtual journalism, influenced by varying levels of infrastructure and audience readiness. Synthesizing insights across diverse contexts provides a more holistic understanding than studies limited to specific regions.

The following sections will delve into the literature, employ relevant theoretical frameworks (media convergence, immersive journalism/presence theory, digital ethics) to structure the synthesis, outline the review methodology, and present a thematic analysis focusing on technology, audience interaction, ethics, business models, and journalistic practices. The paper culminates in a discussion of identified challenges and future directions grounded in the research gaps apparent from the literature, and a conclusion summarizing the synthesized state of knowledge.

### **Literature Review**

The scholarly landscape surrounding immersive and virtual journalism was characterized by pioneering conceptual work, documentation of early

experiments, and a growing body of research examining practices and challenges. Synthesizing this literature reveals distinct phases and recurring themes.

The roots lie in the concept of "immersive journalism," introduced by De la Peña et al. (2010), emphasizing VR for first-person news experiences. This foundational work posited that VR's enhanced sense of presence could foster deeper emotional engagement and understanding (De la Peña et al., 2010). While the potential for empathy was a key motivator (Milk, 2015), a pattern of caution emerged in scholarship, suggesting empathy is not automatic and depends on narrative and individual factors (Aitamurto, 2019), representing a nuanced evolution from initial optimism.

The mid-to-late 2010s saw experimentation by major news organizations (e.g., The New York Times, BBC, Associated Press) with 360° video and VR documentaries (Robitzski, 2017). Academic studies documented these efforts, consistently highlighting a pattern of perceived advantages (engagement, novel storytelling) juxtaposed with significant challenges (high costs, technical hurdles, uncertain audience uptake) (Stubbs, 2018). Parallel, less sustained experiments occurred within virtual worlds like Second Life, representing historical precedents for journalistic interest in inhabiting virtual spaces.

Contemporary academic focus increasingly explored how core journalistic values and practices translate, or require adaptation, within immersive spaces (Aitamurto, 2019; Stubbs, 2018). The theoretical exploration of adapting journalistic norms to these environments was a noticeable pattern. Synthesizing reviews and expert perspectives consolidated findings on immersive journalism's benefits and drawbacks, confirming the persistent pattern of technical/financial barriers and the lack of established storytelling conventions (Stubbs, 2018). This highlighted a potential contradiction: while technological capabilities were advancing, the practical and normative frameworks for journalistic application seemed to lag.

Regarding global perspectives and gaps, while much documented experimentation originated in North America and Europe, the literature hinted at significant variations globally, underscoring a gap in understanding how cultural and infrastructural differences shape adoption patterns. Scholarship often pointed to digitally native younger generations as potential early adopters, but broad empirical data on audience acceptance across demographics and regions remained a significant gap.

A consistent pattern in the literature was the recognition of profound emerging ethical debates. Scholars grappled with the tension between immersive storytelling and factual accuracy (Aitamurto, 2019), the ethics of reconstructing events (Robitzski, 2017), and potential psychological harm from intense experiences (Aitamurto, 2019). While industry bodies and researchers had begun formulating guidelines (Aronson-Rath & Lahr, 2018), a gap existed in widely accepted, specific ethical codes for immersive journalism.

In synthesis, the literature charted a path from conceptual origins and early experiments towards explorations of immersive virtual environments for news. Key patterns included the perceived potential for enhanced engagement via immersion, persistent technical and economic challenges, and growing ethical scrutiny. Contradictions arose between technological potential and practical implementation, and between the drive for immersion and the demands of journalistic accuracy. Significant gaps remained in understanding global adoption dynamics, long-term audience effects, sustainable business models, and established ethical frameworks.

### **Theoretical Framework**

Analyzing the phenomenon of immersive journalism necessitates drawing upon established theoretical frameworks from media and communication studies. This review employs three key lenses to synthesize the literature and interpret observed patterns and contradictions.

First, Henry Jenkins' (2006) theory of Media Convergence and Participatory Culture provides a powerful framework for understanding immersive platforms as an amalgamation of existing media and a catalyst for cultural shifts in media consumption. Immersive environments exemplify technological convergence by integrating multiple content formats within a single experiential space. More profoundly, they embody cultural convergence by fostering participatory culture, potentially transforming audiences from passive recipients into active participants (Jenkins, 2006). This lens helps interpret the observed pattern of increased audience agency discussed in the literature and highlights potential power shifts when journalism operates within interactive environments.

Second, theories explaining the effects of immersive media, particularly Immersive Journalism and Presence Theory, were crucial in the literature. Central is the concept of presence—the psychological feeling of "being there" in a mediated environment (Slater, 2009). Immersive journalism leverages technologies like VR to maximize presence, theoretically leading to greater engagement, emotional response, and understanding (De la Peña et al., 2010). The related, though debated, concept of VR as an "empathy machine" (Milk, 2015) informed many early immersive projects. While empirical validation of consistent empathy effects remained a noted gap, presence theory helps explain the underlying mechanism driving the perceived experiential power of immersive journalism. Furthermore, this framework encompasses the challenge of developing a unique "grammar" for immersive storytelling (Stubbs, 2018), distinct from traditional media, which connects directly to the ethical considerations of balancing immersion with accuracy (Aitamurto, 2019).

Third, established principles of Digital Journalism Ethics—truthfulness, accuracy, minimizing harm, independence, accountability—provided a normative baseline in discussions. Immersive environments introduce novel

contexts testing these principles. Applying ethical theory often involved analogical reasoning, extending existing norms to virtual scenarios (e.g., transparency about reconstructions). This framework illuminates the ethical challenges identified as a recurring pattern in the literature, such as verifying information, mitigating potential psychological harm from intense immersion (Aitamurto, 2019), and ensuring privacy. The call for new, specific ethical guidelines (Stubbs, 2018; Aitamurto, 2019; Aronson-Rath & Lahr, 2018) reflected the recognition that while core values persist, their application requires adaptation, highlighting a gap between traditional frameworks and the unique affordances and risks of immersive platforms.

By integrating these theoretical perspectives, this paper moves beyond description towards a synthesized analysis, interpreting the developments in immersive journalism within broader scholarly contexts of media change, user experience, and ethical responsibility, based on the reviewed literature.

### **Methodology**

This study utilizes a qualitative, synthesizing literature review methodology, focusing on the selected sources. The objective is the systematic analysis and integration of scholarly knowledge on immersive and virtual journalism available within that corpus. The approach focuses on identifying overarching patterns, points of contradiction or tension, and significant gaps within that specific body of research drawn from academic databases, institutional repositories, scholarly books, and credible industry/research center reports included in the review.

The search and selection process employed keywords like “virtual reality journalism,” “immersive journalism,” “XR journalism,” and related terms, prioritizing peer-reviewed sources, while including foundational earlier works where relevant. A deliberate effort was made to incorporate sources reflecting diverse global perspectives, although limitations in published research from some regions were apparent in the available literature. Selection criteria favored scholarly rigor, but illustrative examples from reputable industry sources were included cautiously.

The analytical approach involved thematic analysis to categorize findings according to recurring themes aligned with the research objectives: technological factors, audience dynamics, ethical issues, business models, practice evolution, and challenges/future directions, as discussed in the literature. The analysis was guided by the theoretical frameworks (convergence, presence, ethics) to ensure interpretation remained grounded in established concepts. The core analytical task involved moving beyond summarization to actively synthesize findings from the reviewed literature—comparing and contrasting results across studies, explicitly identifying convergent patterns, highlighting divergent findings or contradictions, and pinpointing areas where evidence was thin or absent (gaps).

Limitations of this review include its basis on the selected body of literature. The nascent nature of the field means the review draws heavily from VR/AR journalism literature. The availability of published research was uneven globally. As a literature synthesis, conclusions are based on reported evidence and interpretations available in the reviewed sources. Despite these constraints, this methodology is appropriate for achieving the paper's aim: to provide a critically synthesized overview of the state of scholarship based on the included literature, clearly identifying patterns, contradictions, and gaps.

### **Analysis and Discussion: Synthesizing Patterns, Contradictions, and Gaps**

This section synthesizes the findings from the reviewed literature across key thematic areas, explicitly highlighting the identified patterns, contradictions, and research gaps, interpreted through the theoretical lenses outlined previously.

Regarding Technological Advancements and Barriers, a consistent pattern in the literature is the acknowledgment that technological advancements (improving VR/AR hardware, game engines, capture techniques) were enabling more sophisticated immersive journalism experiences (De la Peña et al., 2010). However, this was juxtaposed with the persistent pattern of significant barriers: high production costs, the need for specialized skills and equipment, lack of device ubiquity, and platform fragmentation issues (Stubbs, 2018). This created a contradiction between the potential afforded by technology and the practical limitations hindering widespread adoption and accessibility. A critical gap identified in the literature was the disparity in infrastructure and access globally, raising concerns about immersive technologies potentially exacerbating the digital divide.

Concerning Audience Interaction and Participatory Culture, the literature identified a shift towards heightened audience interaction as a defining characteristic of immersive journalism, aligning with Jenkins' (2006) concept of participatory culture. Users were envisioned as active participants who could navigate and explore news experiences. This interactivity was seen as a potential strategy for engaging audiences. However, a contradiction emerged between the ideal of user agency and the journalistic imperative to ensure accuracy, context, and narrative coherence. Giving users complete freedom might lead them to miss crucial information, posing a challenge requiring sophisticated interaction design (Hardee & McMahan, 2017). Furthermore, a gap existed in empirical research understanding diverse audience responses: How did interaction affect comprehension and trust across different demographics?

Ethical Considerations revealed amplified dilemmas and normative gaps. Ethical concerns formed a dominant and recurring pattern in the literature. Issues of accuracy and potential deception in virtual reconstructions (Aitamurto, 2019; Robitzski, 2017), verification of information, minimizing psychological harm from visceral experiences (Aitamurto, 2019), ensuring user privacy, and

maintaining editorial independence were consistently raised. This reflected the application of traditional journalistic ethics to new scenarios. A significant contradiction or tension highlighted by Aitamurto (2019) was the "normative paradox" where the drive for compelling immersion could conflict with the principles of accuracy and minimizing harm. While calls for transparency and new guidelines were frequent (Stubbs, 2018; Aronson-Rath & Lahr, 2018), a major gap remained in the form of established, universally accepted ethical protocols specifically tailored for immersive journalism.

Analysis of Business Models showed experimentation and uncertainty. The literature revealed a clear pattern of uncertainty and experimentation regarding sustainable business models for immersive journalism. Approaches often relied on adapting existing models (sponsorships, subscriptions) or depended heavily on external funding (grants, institutional budgets), particularly in public service media contexts. This reliance highlighted a potential contradiction with the long-term goal of commercial viability. The primary gap was the lack of proven, scalable monetization strategies. Demonstrating clear return on investment was challenging, hindering broader industry commitment beyond experimental phases.

Finally, the Evolution of Journalistic Practices indicated new skills, workflows, and gaps. A discernible pattern involved the evolution of journalistic practices, demanding new skills and workflows. Storytelling shifted towards designing explorable experiences, requiring collaboration between journalists, designers, and developers (Hardee & McMahan, 2017). News gathering might incorporate virtual observation, while verification extended to spatial details. This necessitated new competencies and potentially new newsroom roles. However, a contradiction existed between the need for these specialized skills and the capacity of many newsrooms to acquire them. This pointed to a gap in accessible training and the development of cost-effective tools or collaborative models to democratize adoption.

In synthesis, based on the reviewed literature, while the vision of engaging, interactive immersive journalism was a consistent pattern, its realization was fraught with contradictions related to accessibility, ethics, economics, and practical implementation. Addressing the identified gaps in empirical audience research, global adoption studies, business models, standardized ethics, and accessible training was crucial.

### **Challenges and Future Directions: Addressing the Gaps**

The synthesis of scholarship clearly delineated significant challenges confronting immersive journalism, simultaneously pointing towards critical directions for future research and development aimed at filling the identified gaps.

One major challenge involves Bridging the Technical and Access Divide, stemming from the gap in global disparities and platform standards. Addressing

this requires effort towards advocating for open standards and exploring low-bandwidth, accessible forms of immersive journalism. Research tracking device adoption and audience readiness globally was needed.

Another area is Understanding and Building Audiences, addressing the gap in empirical audience research. Moving beyond anecdotal evidence requires robust empirical research. Future studies needed to investigate audience responses across demographics, compare immersive versus traditional formats, and explore optimal integration strategies.

Developing ethical frameworks and best practices is crucial due to the gap in standardized ethics. The lack of established ethical guidelines necessitated proactive development. Future directions involved collaborative efforts to create specific, actionable ethical codes. Research needed to focus on testing approaches to transparency, mitigating harm, and verifying content (Aitamurto, 2019; Stubbs, 2018), while finding sustainable economic models remains a challenge linked to the gap in proven business models. Addressing the economic uncertainty required innovation and evidence. Future research needed to involve case studies analyzing financial performance and explore audience willingness-to-pay. Collaborative funding models also warranted investigation. Lastly, cultivating skills and inclusive practices must address the gap in accessible training and global practices. Closing the skills gap required scalable training solutions. Future directions included developing open-source tools, creating accessible courses, and fostering partnerships. Research documenting best practices from diverse global contexts was needed.

Addressing these challenges and pursuing these research directions was vital for moving immersive journalism from speculative potential to evidence-based practice, grounded in ethical integrity, economic sustainability, and global inclusivity.

### **Conclusion**

This paper has synthesized the scholarly literature on immersive and virtual journalism, revealing a field rich with potential yet navigating significant complexities. The analysis identifies clear patterns: a consistent vision of immersive, interactive news experiences driven by technological advancements; a shift towards participatory audience roles aligning with convergence culture; the persistent emergence of novel ethical dilemmas demanding new frameworks; widespread experimentation with uncertain business models; and an ongoing evolution of journalistic skills and practices.

However, the synthesis also illuminates critical contradictions and gaps. Tensions existed between the potential for deep immersion and the imperatives of accuracy and minimizing harm; between the promise of global reach and the reality of digital divides; between the need for specialized resources and the capacities of diverse newsrooms. Crucial gaps remained in empirical



understanding of audience effects, global adoption dynamics, economic sustainability, and widely accepted ethical standards.

By employing theories of media convergence, presence, and digital ethics, this review provides a structured understanding of these dynamics based on the reviewed literature. It argues that while the technological allure of immersive platforms was strong, successful integration into journalism depended fundamentally on addressing the challenges and research gaps identified. The future of immersive journalism required moving towards rigorous, ethical, and inclusive implementation.

The contribution of this paper lies in its focused synthesis of the reviewed literature, explicitly highlighting the patterns, contradictions, and gaps characterizing the state of knowledge. It underscores the need for future research that is empirical, globally conscious, ethically grounded, and practically oriented. If the journalism community could navigate this frontier thoughtfully—harnessing the unique affordances of immersive media while upholding core journalistic values and addressing accessibility—immersive journalism held the potential to significantly enrich public understanding and engagement. Neglecting these challenges risked creating new forms of exclusion and undermining trust.

## References

Aronson-Rath, R., & Lahr, J. (2018). An Ethical Reality Check for Virtual Reality Journalism. Online News Association.

Aitamurto, T. (2019). Normative paradoxes in 360° journalism: Contested accuracy and objectivity. *Digital Journalism*, 7(2), 187–205. <https://doi.org/10.1080/21670811.2018.1503060>

De la Peña, N., Weil, P., Llobera, J., Spanlang, B., Friedman, D., Sánchez-Vives, M. V., & Slater, M. (2010). Immersive journalism: Immersive virtual reality for the first-person experience of news. *Presence: Teleoperators and Virtual Environments*, 19(4), 291–301. [https://doi.org/10.1162/PRES\\_a\\_00005](https://doi.org/10.1162/PRES_a_00005)

Hardee, G. M., & McMahan, R. P. (2017). FIJI: A framework for the immersion of journalism. *Journal of Media Practice*, 18(2-3), 171–185. <https://doi.org/10.1080/14682753.2017.1388764>

Jenkins, H. (2006). *Convergence Culture: Where Old and New Media Collide*. New York University Press.

Milk, C. (2015, March). How virtual reality can create the ultimate empathy machine [Video]. TED Conferences. [https://www.ted.com/talks/chris\\_milk\\_how\\_virtual\\_reality\\_can\\_create\\_the\\_ultimate\\_empathy\\_machine](https://www.ted.com/talks/chris_milk_how_virtual_reality_can_create_the_ultimate_empathy_machine)

Robitzski, D. (2017, September 27). Virtual reality and journalistic ethics: Where are the lines? Undark. <https://undark.org/2017/09/27/virtual-reality-journalistic-ethics/>

Slater, M. (2009). Place illusion and plausibility can lead to realistic behaviour in immersive virtual environments. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1535), 3549–3557. <https://doi.org/10.1098/rstb.2009.0138>

Stephenson, N. (1992). *Snow Crash*. Bantam Spectra.

Stubbs, B. (2018). Virtual reality journalism: Ethics, grammar and the state of play. *Australian Journalism Review*, 40(1), 81–94.