

Reconstructing Intangible Cultural Heritage in the Era of Artificial Intelligence: From the “Loss of Aura” to the “Co-Creation of Aura”

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Abstract. With the advancement of globalization and modernization, Intangible Cultural Heritage (ICH) faces a crisis of transmission. As an emerging technology, Artificial Intelligence (AI) has been widely applied to the digitization and dissemination of ICH, aiming to alleviate this issue. However, whether AI can effectively preserve or reconstruct the "Aura"—a core characteristic of intangible cultural heritage—remains widely debated. Based on Benjamin's theory of "Aura," this study explores the challenges and potential of AI intervention in the transmission process of ICH. By distinguishing between "representational Aura" and "non-representational Aura," the article analyzes AI's limitations in reproducing symbolic cultural content and its impact on embodied experience and emotional resonance. Furthermore, this study proposes the concept of "Aura co-construction," advocating that AI should function as a cultural "participant" rather than a tool in ICH transmission. Through collaborative creation, AI can redefine the generative mechanisms of "Aura." Findings indicate that while AI cannot fully replicate traditional Aura, it can play a significant role in ICH transmission through deep human-technology interaction, opening a new aesthetic pathway termed "semi-spiritual Aura." This research offers novel perspectives and methodologies for future theoretical and practical applications of AI in ICH preservation.

Keywords: Artificial intelligence, Aura, intangible cultural heritage, art

1. Introduction

Intangible Cultural Heritage (ICH) encompasses social practices, expressions, knowledge, skills, and associated tools, objects, artifacts, and cultural spaces that communities, groups, and sometimes individuals recognize as part of their cultural heritage [1]. However, under the dual influence of globalization and modernization, the transmission of ICH faces severe challenges, including the impact of modern lifestyles, changes in transmission mechanisms, weakened cultural contexts, and insufficient numbers of practitioners. Consequently, governments at all levels and industrial policies have increasingly integrated artificial intelligence (AI) with traditional ICH, introducing initiatives such as intelligent teaching systems, digital twins, and immersive experiences. These efforts aim to leverage technological means to address the challenges facing the transmission of traditional ICH. For instance, Zhejiang Province's 2025-2027 action plan proposes developing specialized equipment

that uses digital avatar technology to precisely replicate the movement details and teaching styles of inheritors, thereby achieving "human-machine collaborative teaching" of ICH skills. This is termed the "DIY Smart Integrated Machine for Living Transmission of Intangible Cultural Heritage." AI plays a significant role in the living transmission of ICH, while virtual digital human technology further advances its international dissemination [2]. Technologies like artificial intelligence indeed hold considerable potential for disseminating and inheriting ICH. Yet, can they preserve the cultural essence of "Aura," as described by Walter Benjamin? In *The Work of Art in the Age of Mechanical Reproduction*, Benjamin posited that "Aura" embodies the uniqueness of traditional art, stemming from the work's "here and now" quality [3]. However, with the advancement of mechanical reproduction techniques, Aura gradually dissipates. He contends that the proliferation of mechanical reproduction strips artworks of their innate uniqueness and historical context. While AI possesses capabilities like style matching, motion mimicry, and automated narrative/text generation, the elusive quality of Aura—embedded in emotional atmospheres, cultural temperaments, and subtle resonances of human interaction—risks being reduced by algorithms to symbolic structures or motion parameters. It becomes computable yet imperceptible. Current research predominantly focuses on how AI technology can efficiently simulate intangible cultural heritage (ICH) symbols, enhance dissemination efficiency, and improve image generation quality. Yet few studies deeply explore whether "spirit essence" can be partially preserved, reconstructed, or transformed through AI intervention (AI). Articles specifically addressing the reconstruction of intangible cultural heritage's spiritual essence are virtually absent from Chinese academic platforms. Yet, this concept holds significant research value within contemporary AI discourse. Although ICH possesses distinct cultural, community, and ritualistic contexts, its core transmission issues exhibit high structural similarity to broader "art production and reception" frameworks. Therefore, this study situates ICH within a broader contextual framework.

This study primarily following analyzes: the research questions

1. Is cultural Aura truly dissolved when AI intervenes in ICH inheritance?
2. Can the unique Aura of ICH be transmitted or reconstructed?
3. How are the authenticity and sacredness of ICH deconstructed and reshaped at the technological level?

Based on the above research questions, this study adheres to the PRISMA guidelines to ensure transparency and reproducibility [4]. The research process comprised four stages: 1. Literature search: from the Scopus and Web of Science databases, using the three keyword groups "IHC+ AI," and "Art+AI" to retrieve literature. 2. Screening: Based on titles and abstracts, excluded studies not meeting the theme. Remaining articles underwent full-text evaluation, covering both theoretical and review categories. 3. Research quality was assessed using the CASP tool, selecting articles with high scores. 4. Studies meeting all criteria were ultimately included in the systematic review or meta-analysis.

2. Dissolution of Aura and AI's challenge to intangible cultural heritage

Although ICH possesses specific cultural, community, and ritual contexts, its core transmission issues exhibit high structural similarity to the broader. Therefore, this paper situates ICH within a larger framework. German philosopher Walter Benjamin posited that artistic works possess sacred qualities and cultural allure due to their uniqueness, irreproducibility, and historicity. He noted that as technological reproduction advanced, art's "here-and-now quality " was progressively eroded, transforming sacred objects into mass-market commodities and gradually dissolving their Aura. In today's era of digitalization and AI proliferation, Benjamin's insights appear to be undergoing

renewed validation. AI, as a technological logic centered on the core mechanism of "training-extraction-generation," inherently tends to eliminate chance and unpredictability. Its primary objectives—stability, efficiency, and real-world approximation—create tension with the unpredictability and embodied nature upon which Aura relies. AI While creation can reconstruct visual and linguistic forms, it lacks the ontological dimension of an artist's lived experience and contextual immersion. Consequently, its "Aura" often remains a superficial simulation rather than a profound cultural inspiration.

Embodiment is particularly crucial in ICH transmission. Mauss introduced the concept of "techniques of the body," arguing that traditional crafts, rituals, and behaviors themselves constitute cultural knowledge acquired and transmitted through the body. Take traditional dance, martial arts, and opera as examples: their rhythmic sense, breathing techniques, and bodily intent all belong to "tacit knowledge" that is difficult to convert into visual data [5]. Wong also cautions: "If ICH digitization remains confined to documentation and dissemination without addressing its deep cultural semantics, it risks falling into 'cultural shellification.'" When AI attempts to reproduce these cultural contents through motion capture or verbal commands, it often fails to capture their subtle rhythms and intentions, thereby losing the embodied core of culture." Discussions on Aura abound, and the term has various translations in Chinese. Peng Feng argues that for aesthetics and art criticism, translating "Aura" as "qiyun" seems more conducive to localization. Zhu Liangzhi proposes in his "On the Theory of Vital Rhythm": qiyun is a "non-formal vitality that achieves communion between humanity and the cosmos through bodily and mental perception" [6]. From this perspective, while "qiyun" and Benjamin's "Aura" operate in different contexts, both point to the transcendent, irreplicable cultural authenticity within the "spiritual dimension" of artistic works. Whether termed "Aura" or the more localized "qi yun," this concept constitutes a vital component of intangible cultural heritage. Most AI-involved ICH projects focus on visual, symbolic, and replicable content, overlooking the field spirit, ritual emotions, and collective memory underlying cultural practices. This practice, heavily weighted toward technical logic, actually exacerbates the erosion of Aura.

3. Representation and non-representation of Aura

In Stuart Hall's theory of cultural representation, representation serves as the core mechanism for producing cultural meaning. As a fundamental paradigm of technological operation, representation refers to the process of abstractly referencing cultural practices through symbolic systems [7]. In this process, traditional culture is perceived and experienced through concrete carriers such as canvases or ritual sites. However, with the rise of mechanical reproduction, the uniqueness of these carriers is diminished, and the original cultural depth is eroded. Technological reproduction not only alters the mode of artistic existence but also strips away the essential characteristics of the "representational medium." This serves to operationalize the reconstruction of the theory of Aura and functions as a crucial analytical tool for assessing whether AI intervention in intangible cultural heritage is genuinely effective.

3.1. Special representational Aura

Representational spiritual essence refers to cultural characteristics that can be externalized, encoded, and transmitted through technological means. These typically manifest as symbols, patterns, or other forms that can be processed into visual, audio, or linguistic representations. Typical examples include paper-cutting motifs, embroidery patterns, and recorded explanations of intangible cultural

heritage. This type of Aura essence is relatively easy to "recreate" or "simulate" using AI and constitutes the primary focus of most current AI-driven intangible cultural heritage projects. AI technologies such as image generation models (e.g., Stable Diffusion), speech synthesis systems, and style transfer algorithms demonstrate strong capabilities in this dimension. For instance, in Ding's research on Shanghai paper-cutting, AI successfully converted textual prompts into draft patterns consistent with traditional styles [8].

3.2. Special non-representational Aura

Non-representational Aura refers to cultural experiences that cannot be fully symbolized by technology, typically involving embodiedness, situational awareness, atmospheric fields, and tacit knowledge. The Aura in this dimension relies on deep resonance between humans and culture, such as the tactile memory of inherited craftsmanship, the sacred atmosphere of temple fair rituals, and oral traditions within ethnic groups. This dimension directly addresses Gumbrecht's concept of "cultural presence": it is not semantic representation but immediate perceptual evocation—the "felt" existence of culture [9]. Within Barad's theory of "material-meaning inseparability," such cultural characteristics are not passively described but generated through the interaction of "object-person-field." Consequently, AI struggles to accurately simulate this non-representational cultural force [10]. Marcel Mauss's theory of "body skills" offers a cross-cultural pathway of support. He argues that culture is transmitted not only through language but also through learned "bodily actions" like walking, breathing, and labor, which are practiced and preserved. Intangible cultural heritage practices like paper-cutting, opera, weaving, and martial arts all rely on bodily rhythms, breath control, and tacitly understood techniques. This dimension of knowledge is extremely difficult for digital technology to replicate. Even if AI can simulate visual patterns or sound structures, it struggles to mimic the "mind-body unity" of human perceptual experience during transmission [11].

4. Potential pathways from "loss of Aura" to "co-construction of Aura"

4.1. Technology as a "cultural participant" rather than merely a medium

The difficulty of simulating "non-representational particularity" in AI constitutes the primary reason for the fading of Aura in ICH transmission, as it is compressed into flat "recognizable features" under algorithmic logic. However, this paper does not stop at a critical examination of AI but attempts to propose: within new media contexts, can the generative mechanisms of Aura undergo a shift toward Aura co-construction (co-construction of Aura). Barad's theory of "material agency" offers a new starting point beyond "instrumental AI" [11]. Within her "embodied co-construction" (agential realism), all cognition arises not through a subject-object dichotomy, but through "interactions between things and persons." When AI ceases to be a static re-presenter and becomes a dynamic participant, it can also function as a "collaborator" in the construction of cultural Aura. For instance, in AI-assisted dance design, algorithms no longer merely capture dancers' movements but can co-create rhythms and atmospheres through real-time feedback and adaptive motion variations. In AI accompaniment systems for traditional Chinese music, AI dynamically adjusts volume and tempo based on performers' facial expressions and breath patterns, generating aesthetically resonant "dynamic synergy." Such technological processes do not exclude human embodied experience but integrate it into a multisensory interactive medium. What restores the Aura to AI-generated art is human experience—the sensations, emotions, and understanding within it—which manifest

humanity. Peng Feng argues that AI-generated artworks only acquire Aura when they engage in interactive relationships with humans and are activated through human consumption [12].

4.2. The theory of medium equivalence

Reeves and Nass proposed in *Media Equivalence: How People Use Computers as People* that individuals unconsciously equate interactive media with real people, real spaces, and real emotional interaction partners when engaging with them [13]. For instance, experiments show that astronauts viewing Earth from space through VR media experience nearly identical sensations to those viewing Earth from an actual spacecraft. This cognitive bias arises not from deception but because human information processing systems inherently treat all systems exhibiting "feedback, context, spatiality, and perceptual intentionality" through social mechanisms. AI is fundamentally non-human, yet whenever it demonstrates rhythm, emotional intonation, delayed interaction, and feedback, users naturally "socialize" it, generating genuine perceptual emotional responses within this framework. Subsequent studies on VR, voice interaction, and AI text generation further validate this theory's extensibility. Users encountering AI content with emotional intonation, immersive structure, and spatiotemporal presence exhibit physiological responses like sweat gland activation, breathing changes, and skin conductance fluctuations [14]. This demonstrates that even when users know "what they perceive is not a real person," their bodies and perceptions enter an "embodied coordination mode." Under this mechanism, researchers reinterpret the "non-representational specificity" activated by AI not as traditional form, but as an Aura-substitution mechanism triggered through simulacra, contextualized pragmatics, and sensory rhythms. For instance, in AI-assisted traditional ritual experiences, immersive soundscapes synchronized with rhythmic beats can induce heart rate and breathing changes, creating a cultural sense of solemnity at the EEG level. AI-generated characters with audible breathing, subtle details, and micro-movements can evoke listeners' emotional resonance—all observable as "medium-triggered bodily illusions." Thus, even if AI cannot ontologically possess "non-representational particularity," it can still be mistaken by users as an animate entity through mechanisms of "social illusion" and "perceptual mimicry." This does not constitute a departure from the essence of intangible cultural heritage but rather a natural transformation of the mechanism for reproducing Aura in the era of media psychology. The instability of human perception, the ambiguity of ontological boundaries, and the adjustability of perceptual psychology collectively form the possible psychological pathways for "co-constructing Aura."

4.3. Narrating Aura through a "return to auditory perception"

Marshall McLuhan proposed the concept of "returning to auditory" in *Understanding Media: The Extensions of Man*. The "tribal era" favored oral communication, relying heavily on auditory transmission; the "post-tribal era" favored written communication, relying heavily on visual transmission; the "return to the tribal era" is the electronic communication era, also termed by McLuhan as the era of "returning to auditory." Human oral communication history is divided into two phases: the primary oral culture era and the secondary oral culture era. With the advancement of AI technology, exploring auditory return and media sensory balance has gained new opportunities and perspectives [15]. Simply reproducing symbols is insufficient to convey Aura. Technological creation must be "situated within the field of cultural narratives and collective memory," preserving the embodied participation of creators or inheritors to establish authentic connections between works and cultural contexts. By leveraging digital media's "discursive" mechanisms to sustain

emotional resonance, he argues that Aura largely depends on human spiritual perception and the emotionality of language. AI-generated speech, facial expression capture, and rhythm control can evoke simulated emotional responses. The multimodal integration (sound, image, motion) of digital-intelligent media allows the "warmth of spoken language" to be reproduced within technological environments, thereby mitigating the fading of Aura at the level of emotional transmission.

4.4. The receptivity mechanism of "Semi-Aura" as an intermediate state

The concept of "semi-Aura" was proposed by David Salas Espasa & Mar Camacho exploring the mechanism of "residual Aura" in AI-generated artworks. This theory builds upon the inheritance and reconstruction of the Aura as defined by Benjamin [16]. Salas Espasa, D. and Camacho, M propose that while traditional Aura cannot be reproduced, viewers may still "perceive a vague Aura" during aesthetic engagement with AI-generated works through style learning and cultural pattern simulation. This is not a genuine rebirth of Aura, but rather an "aesthetic perceptibility" triggered by its absence. They term this intermediary state "semi-Aura," defining it as: "Semi-Aura represents the sensibility margin where the Aura does not exist, but its lack is aesthetically felt." [16]. In short, "semi-Aura" is not an inheritance of the Aura itself, but a phantom-like perception of Aura—the result of active viewer projection and cultural resonance. It shifts the Aura from the artwork itself to the aesthetic experience, thereby opening a potential channel between "technologically generated" and "spiritual experience." Within the context of intangible cultural heritage, artistic works transcend mere aesthetic objects, embodying multiple cultural dimensions including collective memory, ritual structures, and embodied skills. The traditional generation of Aura relies heavily on the embodied participation and spatio-temporal presence of human creators. While AI can mimic formal styles, it cannot directly reconstruct the physicality and emotional pathways of the creative subject, often being regarded as emblematic of Aura's absence. However, the concept of "semi-Aura" opens an intermediary pathway for understanding AI's intervention in intangible cultural heritage: when AI-generated images, voices, or dynamic structures resonate with viewers' cultural experiences, they may activate a perceptual experience of "Aura-like presence" even without the physical presence of a real creator. Though incomplete, this experience possesses cultural efficacy through symbolic residue and emotional resonance.

5. Conclusion

Despite AI's immense potential in digitally reproducing, interactively creating, and disseminating intangible cultural heritage, current theoretical discourse remains insufficiently focused on "Aura" and "human aesthetic perception." This paper attempts to break the binary paradox of "spiritual essence being irreproducible by technology" versus "AI inevitably dissolving the spiritual dimension." It proposes "semi-spiritual essence" as an intermediary mechanism and reevaluates the collaborative potential between AI and culture through the lens of "non-representational specificity." Amidst the digital tide, ICH's embrace of AI and new media has become an irreversible process. While critiquing technology's dissolution of Aura, we must acknowledge that technology has become a vital ecological condition for ICH's survival. Under these conditions, more researchers must focus on the non-representational spiritual resonance hidden beneath representation. This paper theoretically explores the possibility of "reproducing Aura," though systematic technical experimentation and additional sample analysis remain lacking. Moving forward, AI's role in ICH transmission should transcend mere formal mimicry to delve into the recreation of cultural emotions and ritualistic spirit. Technologies like affective computing and biosensing can transform embodied

experiences into scalable digital encounters. Leveraging the mediating qualities of "semi-Aura" can generate AI-driven serendipity, allowing Aura to echo even in absence. The future challenge lies in striking a balance between critique and creation, ensuring technology becomes a co-creator of cultural spirit rather than a predator.

References

- [1] Ba, M.B.M. (2023) Special issue commemorating the 20th anniversary of the adoption of the Convention for the Safeguarding of the Intangible Cultural Heritage: Editor's note. *National Arts*, (6), 43.
- [2] Chang, H. (2024) Application of virtual digital humans in the inheritance and development of intangible cultural heritage. *People's Forum*, (2), 103–105.
- [3] Benjamin, W. (1968) The work of art in the age of mechanical reproduction (H. Zohn, Trans.). In Arendt, H. (ed.) *Illuminations*. Schocken Books, New York. (Original work published 1935), 217–252.
- [4] Bar-Gil, O. (2025) The transformation of artistic creation: From Benjamin's reproduction to AI generation. *AI & Society*, 1–15.
- [5] Wong, A. (2009) The disappearing "Aura": Cultural heritage and digital reproduction. *Leonardo*, 42(1), 36–40.
- [6] Zhu, L. (2006) *On the vitality of spirit resonance*. Peking University Press, Beijing.
- [7] Hall, S. (1997) *Representation: Cultural representations and signifying practices*. Sage Publications, London.
- [8] Gao, Q.Y. (2023) Application of Shanghai paper-cutting in visual communication design. *Art Education Research*, (18), 103–105.
- [9] Gumbrecht, H.U. (2004) *Production of presence: What meaning cannot convey*. Stanford University Press, Stanford.
- [10] Barad, K. (2007) *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press, Durham.
- [11] Mauss, M. (1935) Techniques of the body (*Les techniques du corps*). *Economy and Society*, 7(1), 70–88.
- [12] Peng, F. (2024) Artificial intelligence and the re-enactment of spiritual resonance. *Film Art*, (5), 12–18.
- [13] Reeves, B. and Nass, C. (1996) *The media equation: How people treat computers, television, and new media like real people and places*. Cambridge University Press, Cambridge.
- [14] Fox, J. and Bailenson, J.N. (2009) The influence of embodied experiences on self-representation and cognitive, affective, and behavioral outcomes in virtual environments. *Human Communication Research*, 35(3), 396–422.
- [15] Li, J. (2024) Technology and art: The disappearance of spiritual resonance in the era of digital intelligence. *Chinese Journal of Host Communication Studies*, (1), 159–170.
- [16] Salas Espasa, D. and Camacho, M. (2025) From Aura to semi-Aura: Reframing authenticity in AI-generated art—A systematic literature review. *AI & Society*, 1–33.