Illustrating the Intangible Cultural Heritage of Santhals and Kuki: Pushing the Boundaries of Knowledge Sharing in the Era of Technology

Shrila Soren[1] , Mercy Kipgen[1]

[1]Department of Anthropology, University of Delhi, New Delhi-110007, - shrila30anthro@gmail.com ;mkipgen@anthro.du.ac.in

KEYWORDS: Santhal, Kuki, Intangible, Heritage, Technology, Sharing

ABSTRACT

By focusing on both Kuki and Santhal's intangible heritage, the paper offers holistic insights into how these communities navigate the transfer of their cultural knowledge, which further ensures that these traditions remain a dynamic force bridging all spheres of life. Through an anthropological perspective, the paper highlights the contextual understanding of the meaning-making process, a framework rooted in decolonization, and captures intangible practices with case studies related to festivals documented during the fieldwork among the Santhals and the Kukis. It attempts to reflect how cultural identity is constructed and reinforced through multisensory, performative expressions and how heritage, when intertwined with the digital revolution, offers immense possibilities to preserve heritage. As the body becomes dynamic, the focus shifts from the body as it intersects with the machine, substituting the role. Further, it discusses how digital tools from smartphones to virtual and augmented reality, GIS, and 3D Scanning facilitate both preservation and transformation of cultural knowledge, foregrounding community-led efforts to reclaim narrative agency and identity. The paper ultimately argues that effective knowledge sharing today necessitates a negotiated continuum between continuity and change where the body and the digital converge, that is ethically grounded and culturally situated. Ethical concerns surrounding digital representation and participation are addressed, alongside a call for immersive technology, culturally responsive approaches to preservation, including VR-based oral histories and blockchain-enabled tribal archives, and many more. It calls for an interdisciplinary and situated approach to digital heritage and anthropological knowledge production.

1. Introduction

Cultural heritage encompasses the everyday life of humans regardless of the culture they are part of. Human bodies perceive the world through their senses, and these senses are constructed in accordance with the specific cultures they belong to (Classen, 1997; Howes & Classen, 2014; Stoller, 1989). What makes certain sounds, visuals, touch, tastes, and smells culturally significant and encoded with cultural meanings? Why do humans feel nostalgic about the past, and why does it ever so often construct their worldview? The collective memory of a society, embedded in the tangible and intangible aspects of culture, is reshaped, retained, relived, and revived through the cultural heritage (Classen, 1993, 1997; Connerton, 1989; Seremetakis, 1994; Stoller, 1989).

In societies like the Santhal and Kuki, where the majority of traditional knowledge has been sustained and conveyed through word of mouth from generations, the preservation of the intangible heritage is of utmost importance. Heritage is not static; it is a multifaceted, multisensory phenomenon that goes beyond textual documentation. The digital revolution and intervention offer unprecedented opportunities for cultural heritage preservation. The proliferation of technology, whether digital, virtual, or artificial intelligence (AI), has facilitated the immersive experiences of individuals and thereby forged more inclusive cultural experiences while safeguarding the shared heritage for generations to come (Wagner & Clippele, 2023).

This paper attempts to illustrate how the Santhal and Kuki worldview is shaped by the intangible cultural heritage and embodied by the members in their everyday lives. Through the songs, dances, legends, festivals, food, beliefs and practices, a glimpse of these cultures may be documented and safeguarded for future generations. The study examines both the virtual and physical spaces to understand the sharing of intangible heritage, which comprises face-to-face interaction on-site involving a physical presence of bodies and exploration of the digital ecosystem enhanced by technology. The present paper also aims to understand the shifts in knowledge sharing among the Santhals and the Kuki and discusses how these communities are navigating their intangible heritage in the current scenario. Furthermore, the paper discusses the effects of technology in shaping the discourse of heritage conservation through sensory engagement and phenomenological reflection, and seeks to understand how individuals and communities experience and negotiate intangible heritage in an increasingly digitised and globalised world.

2. Methodology

The ethnographic fieldwork among the Santhals was conducted in the years 2019 to 2020, and 2021 in three villages, viz. Tembaghutu (Odisha), Jhingasole (West Bengal), and Gandanata (Jharkhand) of India. For the Kukis, the fieldwork was carried out in 2020 & 2021 in Haflong & Karbianglong district in Assam, Kangpokpi & Churachandpur districts of

Manipur, and Medziphema in Nagaland, India, where the Kuki are predominant.

The data discussed in this paper have been compiled after obtaining the informed consent of the participants of the study. Along with participant observation facilitated by sensory immersion, smartphones and audio recorders have been used for audio-visual recordings. Interviews of the key participants have been conducted to gain an in-depth understanding of the rituals, and case studies have been collected. Collaborative digital storytelling enabled a nuanced ethnographic filmmaking, leading to a deeper understanding of the memoryscapes of the participants of the communities. In the Santhal villages, the elders, women, children, and adolescents were more forthcoming. The village council members or *More Hor* were also supportive of the research work and provided valuable insights. Among the Kuki, each village has teachers and elders who are commonly known as *Ojapu* and *Pu-le-Pa thu Le La a chihna nei Pute*/*Pite,* who are always willing to share their knowledge and understanding of Kuki heritage and traditions. Among them, whoever was available and more knowledgeable was introduced to the researchers by the village chief/council, or by the custodians of knowledge. Therefore, for both communities, snowball and convenience sampling were used for selecting participants.

3. Unfolding the Immersive Experience

In this paper, we have focused on the case studies related to festivals documented during the fieldwork among the Santhals and the Kukis, wherein the emphasis has been put on phenomenology, embodiment, memory, identity, and senses. The festivals provide a nuanced understanding of the people and how they navigate their identities and memories despite the forces of migration, religious conversion, socio-economic constraints, and technological infiltrations occurring within these societies. The bodies of the Santhal and Kuki experience these changes in a multifaceted manner. It has, in the present time, established a rather enmeshed and dependent relationship with machines and technology.

3.1 Case Study: Baha Festival

Among the Santhals, the *Baha* festival is celebrated to welcome the spring season. *Baha* in Santhali means flower. The day of celebration is not fixed but observed around February-March and is celebrated collectively by everyone in the village in the *Jaher than* or the sacred grove. The village priest or *Naike,* foresees the rituals and performs most of the rites. However, people also worship at their homes once the rituals at *Jaher* are performed. One is prohibited from eating the fruit or flower of *sarjom* (*Shorea robusta*), *matkom (Madhuca longifolia*), mango (*Mangifera indica*), and neem (*Azadirachta indica*) before the rituals are performed on the day of *Baha*. Henceforth, this festival portrays the interdependence of Santhals on their ecosystem, thereby revering nature, particularly new growth and fertility. This case study was documented in March 2020 in the village of Gandanata (22°21'54.1"N 86°44'52.2"E) in East Singhbhum district, Jharkhand.

Before the rituals are observed and while the materials required are being compiled, people from the village gather at the *Jaher*. Dressed in a red-bordered white sari, women dance the *Baha* dance along the rhythms of *tamaak* and *tumdak*’ (the percussion instruments) played by men. The women stand in lines, one after the other, while dancing. They put their right feet first, then left and again right feet, and simultaneously make a cusp with their palms, bring it close to their faces (gesture as if drinking something out of their hands) and nod. They move to the sounds of the instruments around the *Jaher* in an anti-clockwise direction. Their moves remain swift, precise, and to the beat of the instruments. Meanwhile, *Naike* cleans the place where he would perform *bonga* or offerings to the deities. As Women start singing the *Baha* songs, the ones playing the instruments wait to play. After a pause, the instruments are played, followed by more singing. Once again, the rhythms from the instruments lead the way for the dance. This time, the movements are slightly different. It is like walking, but the women subtly move their right feet first, followed by their left. The moves are rapid and to the beat. By now, *Naike* is finished with organizing the place of worship and waits for the deities *Marangburu, Jaher Ayo, Moreko-Turuiko*, and *Gosae Era* to possess the mortal bodies and let everyone know of their presence. The first person enters a trance as the singing and dancing progress and gain momentum. He starts clapping his hands and makes a loud noise, almost screaming. The movement of dance changes once again. This time, women hold each other's hands while moving their hands (slight up and down motion). They also take a right step followed by a left step (as if walking quickly), and their bodies likewise move to the rhythm of *tamaak* and *tumdak’*. Two more people enter a trance, and the presence of deities is acknowledged by bowing to them. The two men keep clapping their hands and waving their arms over their heads, also slightly jumping. Their whole body shakes. The beats of the instrument gradually slow, which also slows down the dancing pace. A fourth person enters a trance and starts moving his body aggressively while shouting at the sound of the instruments. As the spirits of the deities eventually possess each of these individuals, they take the instruments of their respective *Bongas* and leave to fetch flowers for the offering. One person carries a broom and bamboo basket; one holds a bow and arrow; one has a *Kapi* (the sacred tool used for sacrificing animals during festivals); and the remaining carries an object that jingles as they move around. They roam around the vicinity of the *Jaher*, their bodies still shaking and moving, and they collect the leaves and flowers of *Sajom* and *Matkom*. The dancing, singing, and playing of the instruments continue alongside. After a while, the men return with the ingredients. Two of them climb the tree to collect the *Sarjom* flowers. The deities collect the flowers from whichever tree they like for themselves. The designated place of the offering is at the centre of *Jaher*, and centring around this, the men possessed by the *Bongas* take three anti-clockwise turns. Under the supervision of the deities who had possessed the men, the village chief performs the *bonga* or ritual. They guide the process of worshipping. All the instruments except *Kapi* are put away carefully. *Naike* offers the deities *adwa chawle*, or white rice and *sarjom* flowers while chanting a prayer. Then he takes a hen and put it near the rice, letting it eat it. After the hen eats it three times, it is sacrificed to the *Bongas*. For each *Bonga*, there is a designated place for veneration (within the *Jaher than*), and a separate hen is offered. Every household makes an offering to the *Bongas*. After the deities are satisfied with the offerings made to them, they leave the bodies of these men, who then come out of the trance. With this, the ritual at the *Jaher than* ends.

Baha brings together people, celebrates the human-nature relationship, and reveres the spirits inhabiting the nature, while reinforcing the wisdom of the ancestors, from one generation to the next. The celebration of the rituals and practices, the verbal and non-verbal, the aural and the oral, interweaves the collective memory and collective identity, time after time, and constructs the worldview.

3.2 Case Study: Chavang Kut

In the following, we discuss *Chavang Kut* and the shift in the celebration, which began during colonial times and accelerated with the rise of Christianity among the Kukis after the Anglo-Kuki War of 1917–1919. From the fieldwork and existing literature, we came to understand that, as traditional belief systems weakened, the festival lost its religious significance in some circles, especially among Christian converts who initially opposed its observance (Sitlhou, 2018). However, by 1979, leaders within the community revived *Chavang Kut* as a secular cultural festival, recognizing its potential to unify the fragmented ethnic and religious identities of the Kuki-Chin-Mizo people. Since then, *Chavang Kut* has been celebrated annually on November 1 as a state-level event in Kuki-dominated states. The modern version includes Christian prayers, cultural dances, traditional sports, speeches by political leaders, and even beauty pageants such as Miss Kut. While this transformation has introduced elements of entertainment and spectacle, it also reflects an ongoing negotiation between tradition and modernity. The significance of *Chavang Kut* and its history and origin are now taking over the internet and social media, where virtual contests on the knowledge of traditional beliefs, folk song, instruments, and other aspects are undertaken. The case study was documented in *Songpijang village in Assam and Kanpokpi District in Manipur in 2021.*

Chavang kut, which translates to "autumn festival" in the Thadou dialect, is a post-harvest celebration observed by the Kuki-Chin-Mizo communities, primarily in Manipur, India. Traditionally rooted in agrarian life, this festival was an occasion for rest after months of hard labour in the fields, a time for expressing gratitude to the divine for the bounty of the harvest, and a moment of communal intercession with the supernatural for continued welfare and protection. Historically, *Chavang Kut* was celebrated at the village level, guided by customary practices under the leadership of the village priest, or *Thempu,* who performed rituals dedicated to land, water, and spirits believed to inhabit the forests and mountains (Sitlhou, 2018). These rituals reflected a worldview that saw humans as co-inhabitants of a sacred natural order, rather than dominators of it. Practices like the *Lou-Mun-Vet* ritual for selecting jhum fields, or the *Vam-Nit,* a symbolic day of mourning for animals killed in forest fires, show a complex and respectful relationship between the people and their environment. The celebration of *Chavang Kut* was deeply embedded in the religious consciousness of the *Thadou* people. It was believed that to maintain balance and avoid calamities, rituals had to be performed with care and intention. Central to these celebrations were folk performances such as the *Sa-Ai and Chang-Ai rituals. Sa-Ai*, performed by men who hunted large wild animals, was a symbolic subjugation of animal spirits to prevent misfortune. *Chang-Ai,* performed by women, marked a surplus harvest and affirmed their role in food security. These rituals were not merely performances but acts of merit believed to guarantee safe passage into the afterlife, to a place called *Mithikhuo*. Additional dances like *Lom-Lam* (Corps dance), *Khulkon Lam* (Origin from Khul: a cave, lam translated as the dance from darkness to Light). *Sagol-Kengkhai*, which mimics the movement of a wild boar, and *Jou-Lei-Kon,* which narrates the stages of agricultural life, further showcase the deep integration of ecology, livelihood, and spirituality within the Kuki cultural expression. The acclaimed *Siel Kal/Chop (Sial/Siel=Mithun, Kal=Jump beyond*), the Traditional High Jump of the Kukis, is one of the most popular Traditional Sports. A competition to showcase one's strength and vigour is held on this day every year.

Despite criticisms that the staging of *Chavang Kut* today lacks the ritual efficacy of its village-based origins, the festival continues to carry cultural and political weight. For many, it is an occasion to reconnect with ancestral customs and assert ethnic identity in a rapidly changing world. The performances, though adapted, retain symbolic importance and act as a living memory of a time when every aspect of life was ritually and spiritually grounded. According to Sitlhou (2018), *Chavang Kut* is not merely a reenactment of the past but a creative reinterpretation of tradition that makes space for new meanings and possibilities. It serves as a celebration of the harvest and a cultural platform where history, identity, and political expression converge.

4. Negotiating Knowledge Sharing: Continuity, Shifts, and Amalgamations

For Santhals and Kukis, the body becomes a dynamic site wherein the lived experiences, social interactions, and personal meaning converge (Csordas, 1999b: 178-179; Farquhar and Lock, 2007: 4-5; Lock, 1993: 134). However, the focus is slowly shifting from the body being the "only site" of experiencing, conveying, containing, remembering, teaching, and learning to machines gradually becoming a part of this knowledge sharing.

As Pierre Nora proposed, there is an ongoing transition from living memory to a recorded (or archived) memory, which he called "prosthesis memory" (Nora, 1989: 14). The festivals involve a series of rituals occurring simultaneously as the bodies of the participants perform through verbal and non-verbal media. The chants by the village priest, the possession of the men by the spirits of the *Bongas* (deities), the women dancing to the rhythms of the instrument played by men, and the mimicking of the movement of animals through dances, all construct a multisensory experience for the participants. The body, then, is both the perceiver and being perceived at the same time, resulting in a mutual interdependence which Merleau-Ponty has called intertwining or *chiasm,* and this reversibility between the positions generates meaning (Merleau-Ponty, 1968: 137; Morris, 2010; Schmidt, 1985:92).

Similarly, embodiment acts as an archive, where we notice that rituals and dances are corporeal enactments of cultural memory, tacit, experiential, and non-verbal (Giese & Keightley, 2022). While we also get to acknowledge the aspect of sensory knowledge, as tactile, auditory, and kinesthetic dimensions of celebration, through drumbeats, chants, and bodily movement, the identity of the anchor can be understood as an abstract ideology. These sensorial aspects foster a visceral connection to both the land and the community's cosmology (Fırat, 2021; Parker et al., 2024), reinforcing a shared identity grounded in communal rhythms and seasonal cycles (Merino, 2021; Romaguera, 2018; Thompson, 2024).

The survival of cultural heritage, dependent on the act of remembering, relies heavily on the individuals who ensure the sharing of knowledge. The village council members, the community elders, and the grandparents, who are the custodians of traditional knowledge, serve as the primary keepers and transmitters of cultural heritage. Among the Kuki, the traditional institution of *lawn* (labour organization) and *sawn* (dormitory) plays a vital role, a space where youngsters are taught everything about their roots, culture, and identity under the moral system *Khankho.* Even after the advent of Christianity, the guiding principle of *Khankho* has continued to shape the moral fabric of the society (Akagawa, 2015). These institutions ensure that youth (village youth clubs & church

youth) are encouraged to understand their ancestral traditions and beliefs in ways that are respectful and socially responsible. Santhal elders, on the other hand, often express their displeasure at the present generation’s lack of willingness to learn the elements of traditional knowledge. The intergenerational transfer has declined significantly compared to the olden times, where the mode of imparting knowledge was reliant strictly on a physical space with face-to-face interaction in real-time.

Contrary to this, at the current time, machines and technologies have contributed to the generation of “digital network memory” (Hoskins, 2009), leading to individualized access to knowledge as well as to the construction of a digital archive. With this, the body is no longer the sole repository of knowledge but rather an active part of digital conservation. The digital platform also facilitates decolonizing the narratives of the members of the society and provides agency to control the lens, as we observe the community increasingly using technology to document cultural events, marking what can be called a virtual resurgence of indigenous knowledge. The proliferation of digital content aids in transforming, bridging, and intertwining the modern with the traditional. Social media acts as a crowdsourced repository and interactive archive, enabling broader cultural participation. The younger generation is capturing their rituals and practices through gadgets like smartphones and uploading the images and videos on the internet, especially the social media sites and applications such as YouTube, Instagram, and Facebook, through reels, shorts, and pictures. Hence, these technologies allow diasporic communities and younger populations to reconnect with ancestral heritage, overcoming geographical distance and generational gaps (Ali, et al. 2021; Thomas, 2005:252; Corntassel, et al, 2009). The access to and the availability of the machines and technology have therefore constructed digital spaces via which individuals connect, despite the spatio-temporal constraints.

However, amid the fast-evolving digital technologies and the growing capacities of AI-generated art and archives, the actual engagement with indigenous knowledge systems remains minimal. Today’s generation often seeks hyper-modern experiences, which inadvertently marginalize traditional forms of cultural expression. To address this gap, there is a pressing need to envision immersive, VR-based oral history experiences and to integrate tribal museums' collections into a blockchain-enabled system, ensuring both authenticity and permanence (Chaudhary et al., 2024; Xhako et al., 2024). After all, oral heritage is not merely anecdotal; it is foundational to who we are. As Hall (2000) reminds us, language is not only spoken word but a fusion of abstract and concrete elements that shape human consciousness and identity. With this, emergency digitization efforts targeting endangered cultures and languages are not just preservation strategies; they are an act of cultural justice.

5. How to Use the Data in the Future

Anthropological fieldwork encapsulates the lived realities of individuals and provides the readers with an intricate and detailed aspect of the cultures. While observation and in-depth interviews may help in collecting the data for a plethora of elements, if they are supplemented by digital technologies simultaneously, it elevates the essence of information and thereby accelerates and contributes to the conservation of knowledge. It is, however, important to emphasize that the researcher must employ “participant sensing” (Pink, 2009) while collaborating with the members of the participant groups. The digital documentation must abide by the ethics of research and respect the boundaries of the culture.

The intangible heritage of the Santhals and the Kuki may benefit tremendously by incorporating digital technologies such as 3D scanning and photogrammetry (Caspani, S, 2017), VR and AR (Virtual and Augmented Reality) (Parker, & Saker, 2020; Wojciechowski, et al., 2004; Keil, et al., 2013; Zhang et al., 2024), Metadata (Doeer, 2003; Baca, et al., 2012), GIS (Liu, et al., 2024; , along with the methods used in the present paper, that is, audio-video recording.

The intangible heritage encapsulated and embedded in the material objects contains cultural codes, which may be archived while documenting the rituals. For instance, the key symbols used during the rituals may be scanned using 3D scanning and photogrammetry to generate a 3D model of the objects to facilitate intergenerational knowledge transfer. Using AR and VR may render an immersive and multisensory teaching of skills that involve bodily movements, for example, weaving or crafting, as well as playing instruments and dancing. For the Kuki who had to migrate from their ancestral land owing to conflict situations, GIS may allow them to monitor the sacred geographical locations by mapping and visualizing the spaces, thereby retaining the memory associated with them. For the many Santhal elders, to whom technological accessories and enhancements are often an unknown territory, audio files and videos may help garner their attention and allow them to experience the events and additionally encourage intergenerational exchange of knowledge, which may now flow both ways.

Knowledge sharing, in the fast-paced and digitised world, has established a dependent relationship between humans, machines and technology. Moreover, utilizing digital technology also accentuates the safeguarding of the intangible knowledge, which poses the risk of disappearance owing to the processes of displacement, migration, and the generation gap, along with the death of speakers of a language. With informed and active participation by the members of the community, the gaps in ‘data collecting’ and ‘data storing’ may be restructured, which will provide the members with more agency and authority over their knowledge. Owing to this, it may also be suggested that technology is significantly affecting how humans perceive their world, and in the case of the Santhals and the Kuki, their bodies are now enmeshed with technologies. Yet, the “body” is still watching the “body” through their eyes and being watched through the eyes of another body, albeit through a digital screen. So, digital technologies must supplement the knowledge sharing and documentation without entirely replacing the role of humans as the repositories of intangible cultural heritage.

6. Conclusion

Doerr (2003) demonstrated that ontological and epistemological arguments are equally important for an effective design, in particular when dealing with knowledge from the past in any domain. As Seaver (2018) discusses, algorithms are not merely mathematical functions but cultural artifacts shaped by human biases and institutional logic, and also as entities that require diverse voices for their development and application. Anthropology and its methodologies contribute fundamentally to digital heritage conversations by ensuring contextual richness through ethnographic and visual methods, emphasizing critical awareness of power in narrative-building, archival processes, documenting digital-natives cultures, and promoting ethical digitization. It is essential to move beyond these

stereotypical narratives to fully understand the nuances of human-AI interactions, which presents a substantial challenge for modern anthropology (van Voors and Ahlin, 2024). Building on this challenge, several scholars have emphasized the importance of studying AI not as a detached or abstract force, but as something that is deeply embedded in social contexts and everyday practices (Boellstorff, 2013; Mackenzie, 2017). Integrating data science with ethnography in a mixed-methods approach is to harnesses both strengths (e.g., Munk et al., 2022). Govia (2020) emphasizes that an anthropological perspective on AI is essential for sociotechnical analysis and understanding cultural situatedness. This perspective underlines the dynamic and emergent nature of phenomena, wherein negotiation plays a key role. Govia also observes that while accurately forecasting people's preferences can simplify system design, achieving such predictions necessitates "cultural work" (2020: 48). Ethnographic description can effectively comprehend relationships in AI systems. McCarty (2019) articulates that artificial intelligence anthropology should prioritize an insider perspective of understanding, emphasizing the importance of human-machine resonance rather than solely symbolic representation (2019: 156). As humans adapt to increasingly sophisticated machines that aim to mimic rational decision-making, they must acknowledge that these tools do not possess inherent thought processes but facilitate learning.

Traditional dances, folksongs, beliefs, and practices are taught by the elders and performers to the youth, and most children learn about folk stories from their grandparents through bedtime stories and family gatherings. Remembrance is also carried out extensively through digital media and communal archives; there is a digital shift from intergenerational storytelling to visual digital pedagogies.

Much of the essence of these festivals resides in non-linguistic, symbolic, and performative expressions, such as gestures, rhythms, choreographies, and spatial arrangements. Archiving these requires multimodal documentation, i.e., audiovisual recordings, immersive media, oral testimonies, and collaborative storytelling. This method helps preserve embodied knowledge, allowing future generations to experience the emotive, affective, and relational dimensions of cultural heritage, not just its textual narratives.

References

Akagawa, N., 2015. Intangible heritage and embodiment. In W. Logan, M. N. Craith, & U. Kockel (Eds.), *A Companion to Heritage Studies* (pp. 69–86). Wiley Blackwell. https://doi.org/10.1002/9781118486634.ch5

Appadurai, A., 1996. *Modernity at Large: Cultural Dimensions of Globalization*. University of Minnesota Press.

Asad, T., 1993. *Genealogies of Religion*: *Discipline and Reasons of Power in Christianity and Islam*. Baltimore: Johns Hopkins University Press. https://dx.doi.org/10.1353/book.16014

Baca, M., Coburn, E., & Hubbard, S. 2012. Metadata and museum information. In P.F. Marty and K.B. Jones (Eds.), *Museum Informatics: People, Information, and Technology in Museums* (pp. 107-127). Routledge.

Boellstorff, T., 2013. “Making big data, in theory”, *First Monday*, 18(10). doi: 10.5210/fm.v18i10.4869.

Calvo-Merino, Beatriz., 2019. Aesthetics of Dance. In Marcos Nadal, and Oshin Vartanian (eds), *The Oxford Handbook of Empirical Aesthetic* (pp. 623-637). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780198824350.013.28

Caspani, S., Brumana, R., Oreni, D., & Previtali, M. 2017. Virtual Museums as Digital Storytellers for Dissemination of the Built Environment: Possible Narratives and Outlooks for appealing and rich encounters with the past. *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences, XLII-2/W5,* 113-119. https://doi.org/10.5194/isprs-archives-XLII-2-W5-113-2017

Chaudhary, N., Raj, M., Bhattacharjee, R., Srivastava, A., Sah, R., & Badoni, P., 2024. *AipanVR: A virtual reality experience for preserving Uttarakhand’s traditional art form* [Preprint]. https://doi.org/10.48550/arXiv.2402.08577

Classen, C., 1993. *Worlds of Sense: Exploring the senses in history and across cultures*. Routledge. https://doi.org/10.4324/9781003369769

Classen, C., 1997. Foundations for an anthropology of the senses. *International Social Science Journal*, *49*(153), 401-412. https://doi.org/10.1111/j.1468-2451.1997.tb00032.x

Connerton, P., 1989. *How societies remember*. Cambridge Univ. Press, Cambridge. https://doi.org/10.1017/CBO9780511628061

Corntassel, J., Chaw-win-is, & T’lakwadzi. 2009. Indigenous storytelling, truth-telling, and community approaches to reconciliation. *ESC: English Studies in Canada, 35(1)*, 137-159. https://dx.doi.org/10.1353/esc.0.0163

Csordas, T. J., 1999a. Embodiment and Cultural Phenomenology. In G. Weiss & H. F. Haber (Eds.), *Perspectives on Embodiment: The Intersections of Nature and Culture* (pp. 143–162). Routledge.

Csordas, T. J., 1999b. The Body’s career in Anthropology. In H. L. Moore (Ed.), *Anthropological Theory Today* (pp. 172–205). Wiley-Blackwell.

Doerr, M., 2003. The CIDOC Conceptual Reference Module: An Ontological Approach to Semantic Interoperability of Metadata. *AI Magazine*, *24(3),* 75. https://doi.org/10.1609/aimag.v24i3.1720

Farquhar, J., & Lock, M., 2007. Introduction. In M. M. Lock & J. Farquhar (Eds.), *Beyond the Body Proper: Reading the Anthropology of Material life* (pp. 1–22). Duke University Press.

Fırat, H., 2021. Acoustics as Tangible Heritage: Re-embodying the Sensory Heritage in the Boundless Reign of Sight. *Preservation, Digital Technology & Culture, 50(1)*, 3-14. https://doi.org/10.1515/pdtc-2020-0028

Gangte, T. S., 1993. *The Kukis of Manipur: A historical analysis*. Gyan Publishing House.

Giese, J., & Keightley, E., 2022. Dancing through time: A methodological exploration of embodied memories. *Memory Studies, 17*(2), 444–457. https://doi.org/10.1177/17506980221126611

Govia, Leah., 2020. Coproduction, Ethics, and Artificial Intelligence: A Perspective From Cultural Anthropology. *Journal of Digital Social Research. 2 (3)*, 42-64.

Geertz, C., 1973. *The interpretation of cultures*. Basic Books.

Hafstein, V. Tr., 2009. Intangible Heritage as a list: From masterpieces to representation. In L. Smith & N. Akagawa (Eds.), *Intangible Heritage* (pp. 93–111). Routledge.

Hall, Stuart., 2000. Representation. London: Sage Publication

Hoskins, A., 2009. Digital Network Memory. In A. Erll & A. Rigney (Eds.), Mediation, Re-mediation, and the Dynamics of Cultural Memory (pp. 91–106). Walter de Gruyter.

Howes, D., and Classen, C., 2014. *Ways of Sensing: Understanding the senses in society*. Routledge. https://doi.org/10.4324/9781315856032

Ingold, Tim., 2000. *The Perception of The Environment: Essays on livelihood, dwelling and skill.* London, UK: Routledge.

Ingold, Tim., 2013. *Knowing from the inside. Making: Anthropology, archaeology, art, and architecture.* 1: 1-15.

Jin, P., & Liu, Y., 2022. Fluid space: Digitisation of cultural heritage and its media dissemination. *Telematics and Informatics Reports, 5*, 100022. https://doi.org/10.1016/j.teler.2022.100022

Kanuck, S., 2019. "Humor, Ethics, and Dignity: Being Human in the Age of Artificial Intelligence." *Ethics and International Affairs.* Vol. 33(1). 1-12.

Kirshenblatt-Gimblett, B., 2004. Intangible heritage as metacultural production. *Museum International*, 56(1–2), 52–65. https://unesdoc.unesco.org/ark:/48223/pf0000135858

Kreps, C., 2003. Liberating Culture: Cross-Cultural Perspectives on Museums, Curation and Heritage Preservation (1st ed.). Routledge. https://doi.org/10.4324/9780203389980

Liu, B., Wu, C., Xu, W., Shen, Y., & Tang, F., 2024. Emerging trends in GIS Application on Cultural Heritage Conservation: A review. *Heritage Science*, *12*(1), 1-14. https://doi.org/10.1186/s40494-024-01265-7

Lock, M. M., 1993. Cultivating the body: Anthropology and epistemologies of bodily practice and knowledge. *Annual Review of Anthropology, 22*(1), 133–155. http://dx.doi.org/10.1146/annurev.an.22.100193.001025

Mackenzie, A., 2017. Machine Learners: Archaeology of a Data Practice. MIT Press.

Mastrogiorgio, A., Zaninotto, F., Maggi, F., Ricciardi, E., Lattanzi, N., & Malizia, A. P. 2021. Enhancing organizational memory through virtual memoryscapes: Does it work? *Frontiers in Psychology, 12*. https://doi.org/10.3389/fpsyg.2021.683870

Merleau-Ponty, M., 1962. *Phenomenology of Perception.* Routledge, London.

Merleau-Ponty, M., 1968. *The Visible and the Invisible: Followed by Working Notes* (C. Lefort, Ed.; A. Lingis, Trans.). Northwestern University Press.

Morris, D., 2010. The enigma of reversibility and the genesis of sense in Merleau-Ponty. *Continental Philosophy Review, 43(2)*, 141–165. http://dx.doi.org/10.1007/s11007-010-9144-7

Nora, P., 1989. Between memory and history: Les lieux de mémoire. *Representations, 26*, 7–24. https://doi.org/10.2307/2928520

Parker, E., and Saker, M., 2020. Art museums and the incorporation of virtual reality: Examining the impact of VR on spatial and social norms. *Convergence*, *26*(5-6); 1159-1173.

Parker, M., Spennemann, D.H., and Bond, J., 2024. Sensory perception in cultural studies—A review of sensorial and multisensorial heritage. *The Senses and Society, 19(2), 231-261.* *https://doi.org/10.1080/17458927.2023.2284532*

Pink, S., 2009. *Doing Sensory Ethnography*. SAGE Publications.

Romaguera, L. D., 2018. *Identification Through Movement: Dance as the Embodied Archive of Memory, History, and Cultural Identity* (MA thesis, Florida International University). https://doi.org/10.25148/etd.FIDC004094

Schmidt, J., 1985. *Maurice Merleau-Ponty: Between Phenomenology and Structuralism.* Macmillan.

Selim, G., Jamhawi, M., Abdelmonem, M. G., Ma'abdeh, S., & Holland, A. 2022. The Virtual Living Museum: Integrating the multi-layered histories and cultural practices of Gadara's archaeology in Umm Qais, Jordan. *Sustainability, 14*(11), 6721 https://doi.org/10.3390/su14116721

Seaver, Nick., 2018. What Should an Anthropology of Algorithms Do? *Cultural Anthropology, 33(3), 375–385.*

Shiri, A., Howard, D., & Farnel, S. 2021. Indigenous digital storytelling for cultural heritage access and preservation. *Proceedings of the Annual Conference of CAIS / Actes du congrès annuel de l'ACSI.* https://doi.org/10.1080/10572317.2021.1946748

Sitlhou, H., 2018. The shifting 'stages' of performance: A study of 'Chavang Kut' festival in Manipur. *Asian Ethnicity, 19(4),* 468–488. https://doi.org/10.1080/14631369.2018.1476834

Smith, L., & Akagawa, N., Eds. 2008. Intangible Heritage (1st ed.). Routledge. https://doi.org/10.4324/9780203884973

Stoller, P., (1989). *The Taste of Ethnographic Things: The Senses in Anthropology.* University of Pennsylvania Press.

Taylor, D., 2003. *The Archive and the Repertoire: Performing Cultural Memory in the Americas*. Duke University Press. https://doi.org/10.2307/j.ctv11smz1k

Thomas, R., 2005. Honouring the oral traditions of my ancestors through storytelling. In L. Brown & S. Strega Eds.), *Research as resistance: Critical, Indigenous and anti-oppressive approaches* (pp. 237-254). Toronto: Canadian Scholars Press.

Turner, V., 1969. *The Ritual Process: Structure and Anti-structure*. Aldine Publishing.

Wagner, A., de Clippele, MS., 2023. Safeguarding Cultural Heritage in the Digital Era – A Critical Challenge. *Int J Semiot Law.* 36, 1915–1923. https://doi.org/10.1007/s11196-023-10040-z

Wojciechowski, R., Walczak, K., White, M. and Cellary, W., 2004, April. Building virtual and augmented reality museum

exhibitions. In *Proceedings of the ninth international conference on 3D Web technology, 135-144.* https://doi.org/10.1145/985040.98506

Xhako, A., Katzourakis, A., Evdaimon, T., Zidianakis, E., Partarakis, N., & Zabulis, X. 2024. Reviving antiquity in the digital era: Digitization, semantic curation, and VR exhibition of contemporary dresses. *Digital Applications in Archaeology and Cultural Heritage, 33*, e00252. https://doi.org/10.1016/j.daach.2024.e00252

Yang, C., & Han, F. 2020. A digital information system for cultural landscapes: The case of Slender West Lake scenic area in Yangzhou, China. *Built Heritage, 4*(3).

Zhang, H., Andrade, B., Wang, X., Aburabee, I., & Yuan, S. (2024). A study of spatial cognition in rural heritage based on VR 3D eye-tracking experiments. *Heritage Science, 12*, Article 141. https://doi.org/10.1186/s40494-024-01264-8