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Digital Representation: Theoretical-Framework Construction for the Digital Inheritance of Yingge Dance

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Abstract

Digital heritage research has long been divided between a Conservation School prioritizing authenticity and a Development School emphasizing vitality, and the tension between them frames the digital practice of Yingge Dance. Sorting out three theoretical threads, namely digital authenticity-integrity theory, sustainable artistic ecology theory and the digital ontology of folk dance, this paper identifies the two schools' divergence in value judgement and in the role assigned to technology, proposes the concept of digital representation of Yingge Dance, and constructs a model of three-dimensional core elements, dual-cycle mechanisms and dual goals. Digital representation is neither archival conservation nor commercial development but a systematic aesthetic-mediation process in which ontological elements are encoded, reconstructed and disseminated on the premise of ontological fidelity. Ethnography supplies the cultural foundation, technology the carrier and educational strategy the guarantee, forming a progressive relationship of foundation, carrier and guarantee that iterates through the nested cycles of conservation-transformation-innovation and element-collaboration-empowerment. The framework offers a transferable analytical tool for research on performance-based intangible heritage.

Keywords

Yingge Dance; Digital Representation; Cultural Authenticity; Digital Ontology; Living Inheritance

Introduction

Yingge Dance is a representative Han folk square dance of the Chaoshan region. Integrating opera, martial arts and folk ritual, it performs functions of clan identity, blessing-seeking and disaster aversion through forceful horse stances, complex formations and stylized masks and sticks. Short-video circulation and overseas tours have raised its visibility, and its digital questions have shifted from technical operations to theory: should technology merely preserve Yingge Dance, or enable it to thrive?

Prior research shows two deficiencies. International digital-heritage theory has not been systematically introduced and critically adapted to local practice, so value criteria are absent and practice swings between excessive conservatism that rigidifies culture and blind innovation that distorts it. Nor are there established ontological criteria for deciding what to digitize: most studies address communication phenomena without identifying which movements, symbols, spatial logics and spiritual elements constitute the non-negotiable identity of the art. Following the path of theoretical debate, concept definition and model construction, this paper builds a coherent and verifiable analytical framework.

1. Three Theoretical Threads and the Core Controversy

Digital authenticity-integrity theory addresses whether technology can preserve or enhance heritage values. Alonzo Addison, representing the Conservation School, roots authenticity in the originality and uniqueness of physical entities and regards digitization as a copy without an original, in which sensory experience and historical context are inevitably lost. For dynamic heritage, liveness lies in onsite performer-audience interaction, impromptu adjustment and emotional resonance, none of which can be fully replicated; digitization therefore remains auxiliary, and conservation should centre on physical scenes and manual skills. Fiona Cameron and Sarah Kenderdine, representing the Development School, counter that digital heritage is not a second-class citizen. Cameron proposes a dual standard of contextual integrity and user participation, holding that digital heritage should retain the historical and social context of production while allowing publics to interpret and reconstruct connotations; her account of Aboriginal rock-art digitization shows collaborative annotation turning static reproduction into a dynamic carrier of meaning and mitigating cultural aphasia. Kenderdine's cyber-archaeology treats technology as constructing new dimensions of interpretation through multi-sensory immersion and time-space reconstruction; her Noh theatre project combined 120-fps motion capture of muscle trajectory, joint angle and breathing with reconstruction of Edo-period staging, enabling audiences to imitate movements and perceive force-application logic at a physical level. Applied to Yingge Dance, motion capture and virtual reconstruction can record stick rhythms, the Kirin Step and formation change, and reconstructing god-worshipping street layouts allows cross-temporal participation. Cameron's later compromise, that authenticity means neither absolute replication nor unrestricted innovation but the integrity of cultural connotations, bridges the two schools.

Sustainable artistic ecology theory treats intangible heritage as a living ecosystem bound to community milieu, natural setting and social structure. Julian Steward's cultural adaptation thesis holds that culture survives by adapting its expressive and inheritance modes when environments change. Yingge Dance's traditional ecosystem of Chaoshan environment, performative technique and clan-festival

structure has been eroded by urbanization: settlements have dispersed, values have shifted, ritual intensity has faded, familial chains have fractured, inheritors have dwindled and audiences have aged. The predicament therefore reflects a disconnection between the traditional ecosystem and contemporary society. Gregory Bateson's view of culture as an interactive communication system implies that development requires building a digital ecosystem in which technology reconnects the art with contemporary communities, especially youth, rather than freezing it as a museum specimen.

Digital ontology of folk dance answers which elements ought to be modelled. Kalay's priority-evaluation framework ranks elements as core essential, secondary supplementary and environment-related, the first being irreplaceable and requiring full retention, and distinguishes material ontology of perceivable form from spiritual ontology of values and identity, which can only be transmitted through material presentation. Champion's interpretability matrix evaluates the digital expression of spiritual ontology along cultural-context adaptability, public comprehensibility and inheritance continuity. Applying both, four core elements constitute the identity of Yingge Dance: kinesic ontology of stick rhythms, Kirin and Dragon footwork and formation logics; semiotic ontology of mask colour codes and Water Margin archetypes tied to loyalty and righteousness; spatial ontology of formation evolution and performer-audience interaction; and ethos ontology of loyalty, courage and righteousness, communal cohesion and blessing beliefs. The divergence between the schools thus concerns roots against vitality, and the task is to balance both by preserving core elements while enabling digital representation.

2. Digital Representation: Concept and Boundaries

This paper defines digital representation of Yingge Dance neither as digital conservation nor as digital development, but as a systematic aesthetic-mediation process in which core ontological elements are encoded, reconstructed and disseminated through digital media on the premise of cultural authenticity. Three dimensions demarcate the concept. Ontological fidelity is its conservation kernel: following the four core elements, connotational and spiritual integrity is guaranteed and authenticity upheld, with arbitrary tampering for commercial gain rejected. Technological mediation is its empowerment: motion capture, VR and AR immersion, three-dimensional modelling and short video break spatiotemporal constraints and build new communicative scenarios, distinguishing representation from archival preservation that seals culture in collections. Aesthetic transmission is its living-inheritance objective: educational strategies cultivate young inheritors and audiences so that aesthetic experience returns to community life and content is perceived, interpreted and continued rather than merely exhibited. The concept thus unites ontological fidelity with aesthetic transmission: conservation pursues archiving, development pursues market transformation, whereas representation

pursues transmission through encoding, reconstruction and living continuity.

3. The Three-Dimensional Dual-Cycle Model

The model links three-dimensional core elements, dual-cycle operation and dual goals in a chain of element support, mechanism operation and goal achievement. The elements form a progressive relation of foundation, carrier and guarantee. Ethnography is the cultural foundation: participant observation, in-depth interviews and community tracking capture living context and spiritual ontology and supply authenticity benchmarks. Digital technology is the technical carrier: motion capture, VR and AR and three-dimensional modelling record elements precisely, translate them visually and articulate connotations innovatively while overcoming spatiotemporal limits. Educational strategy is the inheritance guarantee: campus and online interactive education cultivate young inheritors and rebuild echelons. Any missing link defeats the model, since digitization detached from ethnography becomes technological idleness, ethnography without technology remains recording, and digitization without education yields short-lived popularity.

Two nested sub-cycles drive iteration. The conservation-transformation-innovation cycle transmits connotation accurately and expresses it innovatively in three steps: recording, in which ethnography sets scope and context while technology acquires high-fidelity data; extraction and translation, in which ethnography interprets meaning while technology builds a connotation-form mapping database turning invisible spirituality into presentable labels; and innovative expression, in which technology produces immersive and interactive forms while ethnography verifies cultural accuracy. The element-collaboration-empowerment cycle integrates the strengths of the three elements into a system of authenticity guarantee, technical realization and inheritance continuity, then implements results in education, community and communication. Outputs of the first cycle feed the second, while feedback from empowerment scenarios, such as cognitive barriers among youth, redirects recording, translation and expression. Iteration fulfils the dual goals of conserving core ontology and activating cultural vitality.

The model's adaptability is threefold. To authenticity-integrity theory, accurate recording and connotation extraction satisfy Conservation-School demands, innovative expression realizes Development-School vitality under connotational integrity, and contextual documentation plus community interaction incorporate Cameron's dual standard. To ecological theory, the collaboration of elements and the empowerment cycle construct a contemporary ecosystem of technology, community and education that replaces the clan-festival ecosystem and adapts the art to present society. To ontology theory, the recording step selects the four core elements under Kalay's framework while the translation step optimizes spiritual transmission along Champion's three dimensions. The three theories accordingly supply value criteria, systemic logic and content orientation.

4. Conclusion

This paper performs three tasks: sorting out the three theoretical threads and deepening their application logic in light of Yingge Dance's traits and dilemmas, thereby establishing the orientation of conserving core ontology and activating cultural vitality; defining digital representation and demarcating it from conservation and development, thus breaking the binary opposition prevalent in existing research; and constructing the three-dimensional dual-cycle model with its progressive element relations, iteration logic and theoretical adaptability. The framework answers what ought to be conserved, how conservation and development may be balanced, and how living inheritance may be realized, while its ethnographic pathways, technology-selection criteria and educational directions can support method design, case evaluation and strategy formulation. Being theoretical, it leaves operational indicators and validity testing to further empirical work, and offers transferable reference value for research on analogous performance-based heritage.

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