Application of Cultural Gene Theory in the Regenerative Design of Traditional Crafts: A Case Study of Song Dynasty Hutiang Kiln Qingbai Porcelain

Ruan Huixiang, Ahmadreshidi Bin Hasan
Faculty of Creative Industries, City University, Kuala Lumpur, Malaysia
Email: 546856011@qq.com

Abstract
This paper responds to the paradigm shift in intangible cultural heritage preservation from static conservation to living transmission, proposing that the revival of traditional crafts requires establishing a systematic connection between cultural authenticity and contemporary creativity. To this end, the study introduces cultural gene theory to construct a three-stage regeneration design model—"decoding-translation-evaluation"—and conducts empirical research using Song Dynasty Huitian Kiln Qingbai porcelain as a case study. Through mixed methods, it systematically analyzes the material, symbolic, and spiritual layers of cultural genes embedded in this craft, conducting design translation experiments across form, function, and narrative dimensions. Findings reveal that narrative translation grounded in spiritual-layer genes most effectively fosters consumer cultural identification and willingness to pay. This study demonstrates that cultural gene theory provides both theoretical grounding and practical pathways for the contemporary transformation of traditional crafts. It not only offers strategies for specific craft revitalization but also contributes a transferable theoretical framework for the living transmission of intangible cultural heritage.
Keywords: Cultural Gene, Traditional Craftsmanship, Regenerative Design, Design Translation, Hutian Kiln

Introduction
As the paradigm of intangible cultural heritage shifts from static preservation toward living transmission, the regeneration of traditional crafts has emerged as a shared concern across design research and the social sciences. In heritage studies and cultural sociology, scholars have long debated how cultural authenticity can be maintained while allowing traditional practices to adapt to contemporary social, economic, and cultural conditions, noting that excessive fixation on form or technique often leads to museumification rather than sustained cultural life. At the same time, empirical research in cultural sustainability and cultural

economics suggests that the contemporary value of heritage-based products is not determined solely by visual continuity or technical fidelity, but by how cultural meanings are interpreted, narrated, and recognised by multiple actors, including artisans, designers, and consumers. Despite this growing consensus, a critical gap remains at the methodological level: existing studies tend to treat "culture" as an undifferentiated variable, offering limited guidance on how complex cultural content can be systematically analysed and translated into concrete design decisions. This limitation is particularly evident in the contemporary revival of highly knowledge-intensive crafts such as Song-dynasty Hutian Qingbai porcelain, whose regeneration is frequently reduced to stylistic imitation of glaze colour or vessel form, while its deeper material logic, symbolic system, and philosophical worldview remain underexplored. To address this gap, this study introduces cultural gene theory as an operational framework for traditional craft regeneration, conceptualising craftsmanship as a system of transferable cultural genes operating across material, symbolic, and spiritual layers. Building on this perspective, the paper proposes a Decoding–Transcoding–Assessment (DTA) model that systematically links cultural analysis, design experimentation, and empirical evaluation. Through a mixed-methods case study of Hutian Qingbai porcelain, the research compares formal, functional, and narrative design transcoding strategies and demonstrates that approaches grounded in spiritual-layer cultural genes generate higher levels of aesthetic engagement, cultural identification, and willingness to pay. By reframing craft regeneration as a process of structured cultural decoding and selective reinterpretation, this study contributes a transferable design methodology while also engaging broader social-scientific debates on cultural sustainability, authenticity, and living heritage.

Problem Statement

Despite growing interest in the regeneration of traditional crafts, contemporary design interventions continue to face a persistent structural problem: the absence of a systematic framework capable of connecting cultural understanding with concrete design decision-making. In practice, the revival of traditional crafts is often caught between two extremes—on the one hand, strict technical replication that prioritises material fidelity but struggles to adapt to contemporary modes of production and use; on the other hand, superficial design reinterpretations that extract visual symbols while detaching them from their underlying cultural logic. Both approaches risk undermining the cultural integrity and long-term viability of traditional craftsmanship.

This problem is particularly evident in the contemporary regeneration of Hutian Qingbai porcelain from the Song dynasty. While its distinctive glaze colour and vessel forms are frequently referenced in modern designs, such interventions tend to focus on recognisable visual features rather than on the deeper integration of material practice, symbolic meaning, and philosophical values that historically defined the craft. As a result, many regenerated products demonstrate formal resemblance but limited cultural depth, leading to weak differentiation in the market and fragile cultural recognition among users.

At the research level, recent empirical and practice-based studies have provided valuable historical, technical, and aesthetic insights into traditional crafts and their contemporary transformation. However, these studies rarely offer operational tools for guiding design processes. Cultural factors are often discussed descriptively or treated as holistic variables, leaving unresolved the fundamental design questions of what cultural elements should be

transmitted, how transformation should be structured, and how the effectiveness of such transformations can be assessed. This methodological limitation constrains both researchers and designers, resulting in design interventions that rely heavily on intuition or ad hoc decision-making.

In response to this gap, this study argues that the regeneration of traditional crafts requires a structured approach capable of decoding cultural complexity and translating it into actionable design strategies that are both culturally grounded and socially viable. By introducing cultural gene theory and developing a Decoding–Transcoding–Assessment (DTA) framework, supported by a mixed-methods research design, this research seeks to provide a systematic pathway for the sustainable regeneration of traditional craftsmanship.

Literature Review

1. The Evolution of Cultural Gene Theory and Its Application in Creative Fields

The theory of cultural genes (memes) was first proposed by Dawkins (1976) in The Selfish Gene, which analogies the basic unit of cultural transmission to biological genes, positing that it replicates, mutates, and undergoes selection through imitation.Blackmore (1999) further advanced memetics by emphasising memes' pivotal role in driving cultural evolution. This theory offers a dynamic evolutionary perspective for understanding the stability and variability of cultural phenomena (Distin, 2005). Within design studies and cultural heritage fields, memetics has been applied to analyse the transmission and innovation logic of traditional forms (Yuan Li & Gu Jun, 2009).Domestic scholars such as Xu Hengchun (2006) deconstructed products within design semiotics into multiple meaning systems encompassing function, symbolism, and emotion, laying theoretical foundations for decoding hierarchical cultural genes. Recent research attempts to operationalise cultural genes as concrete design resources, categorising them into types such as technical, morphological, and connotative genes, while exploring their extraction and recombination mechanisms in cultural and creative product design (Zhang, 2021). However, existing applications predominantly focus on analysing explicit genes such as visual symbols, with insufficient exploration of implicit genes embedded in materials, craft practices, and philosophical concepts. Moreover, there is a general lack of systematic methodology spanning gene identification to design implementation (Hao, 2025).

2. Diverse Pathways for Contemporary Design Transformation of Traditional Craftsmanship

Academic and practical circles have primarily explored three paradigms for modern innovation in traditional craftsmanship. The first is the formal imitation and symbolic translation paradigm, which focuses on extracting and redesigning traditional visual elements to maintain visual continuity. However, this approach risks devolving into superficial symbol collage, leading to the hollowing out of cultural connotations (Shao Jianwei, 2013).The second is the functional reconfiguration and contextual adaptation paradigm, advocating the integration of traditional craft's core characteristics (such as materials and structures) with modern lifestyle demands. Through functional innovation, it seeks to restore practical value, for instance by applying traditional techniques to contemporary household goods (Norman, 2013). However, this approach is frequently criticised for potentially weakening the craft's cultural identity through "excessive functionalism" (Kikuchi, 2019).The third paradigm involves cultural narrative and meaning regeneration, dedicated to excavating and translating the historical context, philosophical ideas, and lifestyles embedded within craftsmanship. This

approach seeks to establish deep emotional connections and cultural identity through design (Moalosi et al., 2010). However, it demands exceptionally high cultural interpretative skills from designers, and narratives may become overly obscure, alienating the mass market (Lee, 2018).Despite these diverse approaches, existing research often operates in isolation, lacking an integrated theoretical framework capable of synthesising form, function, and meaning while providing flexible guidance for strategic choices within specific contexts (Lin, 2020).

3. Hutian Kiln Qingbai Porcelain: Academic Legacy and Contemporary Innovation

Research on Hutian Kiln Qingbai porcelain has yielded substantial academic achievements. Historical and archaeological studies have meticulously traced its developmental trajectory from its inception during the Five Dynasties period to its zenith in the Song and Yuan dynasties, revealing technological innovations such as the "dual-component formula" and its integration into the global trade network via the Maritime Silk Road (Qin Dashu, 2012; Chinese Society of Ceramics, 2010).The application of scientific archaeology techniques (such as EDXRF) has precisely determined the chemical composition of its body and glaze, providing scientific evidence for its material "hardcore" characteristics (Wu Jun et al., 2009).Art-historical research has further elucidated the intrinsic connection between its "jade-like" aesthetic and the Song Neo-Confucian principle of "investigating things to attain knowledge" alongside Zen Buddhist concepts of "emptiness and stillness" (Xie Mingliang, 2012). However, the aforementioned studies predominantly constitute historical narratives.Regarding contemporary transformations, numerous practices integrating Qingbai porcelain elements have emerged in Jingdezhen and elsewhere. Examples include simplifying the "half-knife mud" technique in cultural and creative design or adapting the conical bowl motif for modern tea ware (Yang, 2021). Yet systematic academic research on these contemporary practices—particularly analyses of transformative pathways grounded in deep cultural deconstruction and assessments of their efficacy—remains scarce (Hu, 2022).

4. Research Gaps and the Positioning of This Study

A review of the literature reveals three primary research gaps: Firstly, insufficient depth in integrating theoretical tools with craft characteristics. The application of cultural gene theory within traditional craftdom remains nascent. How to deeply integrate this theory with craft-specific materials, techniques, and embodied knowledge to establish a detailed, layered analytical model requires urgent advancement (Zhou, 2023).Second, a lack of systematic and closed-loop process research. The journey from cultural analysis to design creation and market feedback constitutes a complete value chain. However, existing studies predominantly focus on isolated segments, lacking a comprehensive closed-loop framework spanning the entire process (Wang & Liu, 2021).Thirdly, empirical evidence across multiple stakeholders remains weak. Many strategies remain at the level of conceptual advocacy, lacking diverse data support from practitioners, designers, and consumers, as well as rigorous evaluation of the cultural efficacy and market utility of design outcomes (Chen et al., 2023).This study aims to address these gaps by developing a three-tier decoding model for cultural genes and a multi-dimensional translation pathway. Through mixed-methods research on Huitian Kiln's Qingbai porcelain, it collects empirical data from multiple stakeholders to validate the framework's efficacy, thereby establishing a comprehensive system that integrates theoretical innovation with practical guidance.

Compared with existing studies, the innovation of this paper does not lie in re-verifying the significance of cultural factors for intangible cultural heritage consumption. Instead, it concretizes and structures this influence mechanism through the hierarchical decoding of cultural genes, and verifies the differentiated effectiveness of different cultural levels in regenerative design via designed experiments and quantitative evaluation. In so doing, this paper supplements and deepens the current empirical research approach dominated by macro variables.

Methodology

This study employs a mixed-methods approach, combining quantitative and qualitative research to systematically explore the application pathways and efficacy of cultural gene theory in the regenerative design of Hutian Kiln's Qingbai porcelain techniques. The implementation process comprises three core stages: cultural gene decoding, design translation experiments, and comprehensive efficacy assessment, forming a multidimensional, mutually corroborative data support system.

1. Cultural Gene Decoding

Surveys of 24 representative inheritors revealed an ageing inheritor cohort, with craftsmanship predominantly transmitted through apprenticeship systems (87.5%). Most inheritors focused on material-level techniques, while 37.5% could articulate spiritual-level concepts such as "harmony between heaven and humanity," providing humanistic foundations for gene identification. Integrating artefact analysis, literature review, and grounded theory, a three-tier structural model of Huitian Kiln's Qingbai porcelain cultural genes was constructed(Table 1).

Table 1

Decoded Three-Tier Structure of Huitian Kiln Qingbai Porcelain Cultural Genes

Gene Level	Core Essence	Key Gene Units (Examples)	Data Sources and Representation
Material Layer Genes	The materials and core technical parameters that constitute ceramics.	1. Binary body formulation (porcelain stone: kaolin ≈ 7:3) 2. High-calcium lime glaze (CaO content ~14.8%) 3. Thin-walled hand-formed body (wall thickness 1–2 mm) 4. Wood-fired reduction firing (1280±20°C)	Scientific archaeological data, oral traditions from practitioners, and measured craft techniques.
Symbolic Layer Gene	A visual and tactile symbolic system	1. "Green-white fusion" glaze colour (Lab values: L87, a-1.5, b*2.5) 2. Classic vessel forms (conical bowls, plum vases, etc.)	Physical surveying, colour analysis, iconography, sensory description.

Gene Level	Core Essence	Key Gene Units (Examples)	Data Sources and Representation
	conveying meaning.	3. "Half-knife mud" incised patterns (lotus motifs, twin fish designs, etc.) 4. Jade-like texture	
Philosophical Foundations	Philosophical concepts and value pursuits guiding creation.	1. The "unity of heaven and humanity" perspective on creation 2. The Aesthetic Perspective of "Simplicity as the Source of Splendour" 3. The ethical perspective of "comparing virtue to jade" 4. The Song Dynasty Perspective on Refined and Elegant Living	Textual interpretation, interviews with practitioners, historical context analysis.

2. Design Translation and Prototype Experimentation

Based on the three-tiered gene structure, three categories of translation experiments were conducted: formal (emphasising the symbolic layer), functional (emphasising the material layer), and narrative (emphasising the spiritual layer). This yielded nine series of prototypes, with significant variations in the emphasis and degree of modification applied to the genes across different pathways (Table 2).

Table 2
Comparative Experimental Parameters and Outcomes Across Three Design Translation Pathways

Translation Path	Core Operational Logic	Representative Prototype	Key Process Parameter Adjustments	Preservation Degree of Proto-Genes*
Formal Translation	Extraction and reorganisation of genes in the symbolic layer.	"Shadow-Green·Trace" Tea Set (Simplified Lotus Pattern)	Glaze colour Lab values: L86.5, a-1.2, b*2.8; Strict adherence to traditional firing protocols.	Symbolic layer: High (90%) Material layer: High (85%) Spiritual layer: Medium (60%)

Translation Path	Core Operational Logic	Representative Prototype	Key Process Parameter Adjustments	Preservation Degree of Proto-Genes*
Functional Translation	Developing new functions based on material layer characteristics.	"Translucent·Rest" luminaire (utilising thin-walled translucency)	Thickness increased to 2.2mm to ensure structural integrity; glaze brightness (L*) enhanced to 90.5 for optimised light transmission.	Material Layer: Medium (70%) Functional Adaptation: High (85%) Spiritual Layer: Low (40%)
Narrative Translation	Interpreting and re-enacting the spiritual layer's essence.	"Listening to Snow · Questioning Zen" Tea Ware (expressing "emptiness and stillness")	Adjust glaze expansion coefficients to control crackle patterns; employ specialised cooling techniques to achieve a warm, mellow feel; adopt radically simplified forms.	Mental Layer: High (88%) Symbolic Layer: Medium (65%) Material Layer: Medium (75%)

*Retention rate calculated as the average of assessments by three intangible cultural heritage experts and two senior designers, who evaluated the degree of alignment between prototypes and genetic units on a 100-point scale.

3. Comprehensive Efficacy Assessment
A questionnaire survey was conducted among 438 consumers, employing a 7-point Likert scale to evaluate the efficacy of the three prototypes. Single-factor ANOVA revealed significant differences across dimensions (Table 3).

Table 3

Consumer Evaluation of Three Design Prototype Efficacy (N=438)

Evaluation Dimension	Form Translation Prototype (Mean)	Functional Translation Prototype (Mean)	Narrative Translation Prototype (Mean)	Significance of Difference (p-value)	Post-hoc Test (Tukey HSD)
Cultural Distinctiveness	6.5	4.9	5.8	<0.001	Form > Narrative > Function
Aesthetic appeal	5.7	5.6	6.2	0.008	Narrative > Form ≈ Function
Perceived utility	5.0	6.4	4.5	<0.001	Function > Form > Narrative
Willingness to Pay	5.1	5.7	5.9	0.002	Narrative ≈ Function > Form

Data processing from 10 interdisciplinary experts was evaluated using the Analytic Hierarchy Process (AHP) to determine the weighting of elements in the digital heritage model (Table 4). Technical adaptability and cultural fidelity emerged as core elements, aligning closely with this study's "decoding-translation" logic and validating the framework's rationality.

Table 4

Weight Analysis of Digital Preservation Model Elements (AHP)

Evaluation Dimension	Weight	Key Indicators	Priority
Technical Suitability	0.287	Process Fidelity, Natural Interaction	1
Cultural fidelity	0.265	Aesthetic communication, historical context presentation	2
Educational Effectiveness	0.198	Knowledge retention rate, skill transferability	3
Market Sustainability	0.143	User willingness to pay, derivative product development	4
Technical Scalability	0.107	Multi-platform compatibility, data interoperability	5

(Consistency ratio CR=0.038<0.1, passed verification)

Findings

Employing a hybrid research framework grounded in "decoding-translation-evaluation," this empirical analysis yielded a series of interrelated findings. These systematically elucidate the structural composition of Huitian Kiln's Qingbai porcelain cultural genes, the differentiated realisation of distinct design translation pathways, and their combined efficacy across market and cultural dimensions.

1. Cultural Gene Decoding: Establishing a Three-Tier Core Structure and Explicitising Tacit Knowledge

Analysis of interviews with inheritors, artefacts, and historical records not only validated the rationality of the three-tier cultural gene model but also concretised the core components of each tier. Findings indicate that material-level genes heavily rely on experiential tacit knowledge—such as judging the "richness or thinness of glaze" and mastering "firing temperatures"—which precisely represent the challenges and focal points in knowledge transformation during digital inheritance.Symbolic-layer genes (e.g., the "green-white" glaze hue, conical bowl forms) serve as the most direct basis for public cultural recognition. Spiritual-layer genes, such as the "unity of heaven and humanity" philosophy in creation, though seldom explicitly articulated by practitioners, are profoundly embodied in their reverential approach to materials and craftsmanship, constituting the very "soul" of the art. The decoding process itself represents a vital undertaking of knowledge preservation and systematic organisation.

2. Design Translation Experiment: Three Pathways of Craft Realisation and Data-Driven Comparison

Data from design experiments guided by this three-tiered genetic structure reveals: the

formal translation pathway most closely aligns with traditional craft parameters, aiming to establish cultural resonance through visual symbol continuity; the functional translation pathway adapts material genetics (such as body thickness) to modern usage through maximum adaptive modification;while the narrative translation pathway prioritises interpreting spiritual essence through process control (e.g., glaze formulation adjustments) and formal language, with craft choices serving semantic expression.

3.Comprehensive Efficacy Assessment: Market Preference, Cultural Identity and Pathway Efficacy Differentiation

Surveys of 438 consumers and AHP assessments by 10 experts revealed divergent efficacy among translation pathways (Figure 1). Consumer data indicates significantly differentiated cognitive profiles across four dimensions: cultural distinctiveness, aesthetic appeal, perceived utility, and willingness to pay.Among these, the narrative translation prototype achieved the highest scores in both aesthetic appeal and willingness to pay, demonstrating strong potential for cultural premium pricing, particularly favoured by young, highly educated groups. Formal translation excelled in cultural distinctiveness, while functional translation held an indisputable lead in practicality.
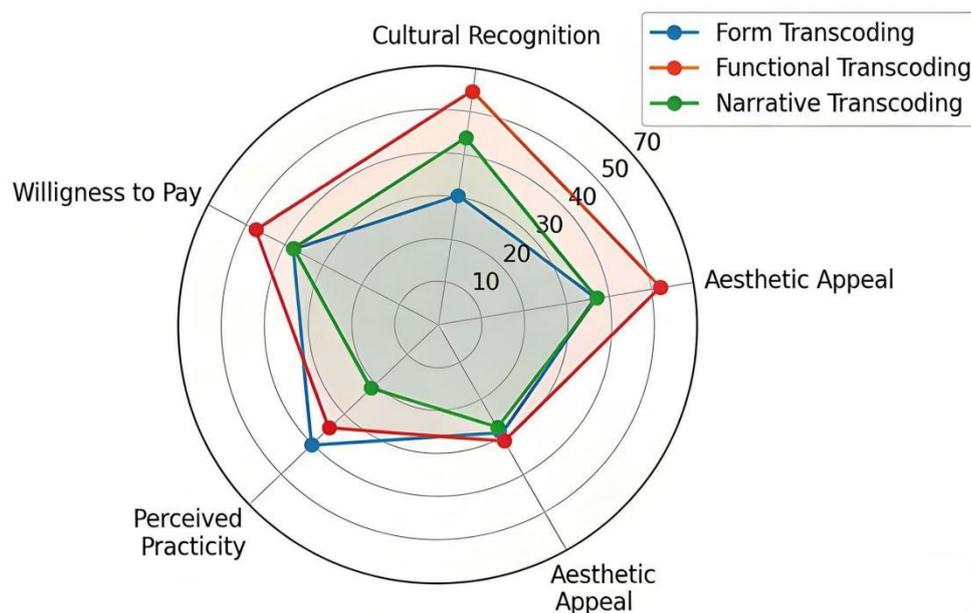

Figure 1: Four-Dimensional Radar Chart of Consumer Evaluations Across Three Design Translation Pathways

The AHP weighting analysis by experts (Technical Adaptability 0.287, Cultural Fidelity 0.265) theoretically validates this research framework: effective regenerative design must commence with accurate cultural decoding (fidelity) and identify appropriate technologies and design languages for transformation (adaptation).The "user willingness to pay" metric within market sustainability proved highly sensitive, directly resonating with the consumer assessment finding that "narrative translation elicits higher payment willingness." Together, these point to the contemporary transformation of spiritual and cultural value as pivotal to achieving commercial sustainability.

4.Model Construction: The Regenerative Design Closed-Loop Model of "Cultural Gene Decoding-Translation-Evaluation"

Based on mixed-method research into Hutian Kiln's Qingbai porcelain, this study constructs and validates a closed-loop regenerative design model centred on cultural genes. This model comprises "three-tier cultural gene decoding (Decoding) – triple design language transcoding (Transcoding) – multidimensional market value assessment (Assessment)", termed the DTA model (Figure 2).This model first deconstructs craft heritage into material, symbolic, and spiritual genetic layers, establishing a structured "cultural database" for innovation. Secondly, it experiments with three translation pathways—form, function, and narrative—for different genetic layers, forming a "design strategy matrix" that allows targeted selection or combination.Thirdly, it validates the market and cultural efficacy of designs through a dual system of consumer quantitative assessment and expert AHP analysis. Feedback from this system enables reverse optimisation of strategies, forming a "practice-feedback-iteration" closed loop.This case study comprehensively validated the model's feasibility: the decoding phase successfully extracted core gene units; the translation phase produced differentiated prototypes; and the evaluation phase objectively demonstrated the efficacy and complementary relationships of different pathways. Consequently, the DTA model transcends specific cases, providing a complete methodological toolchain for the contemporary living inheritance of traditional crafts – spanning cultural analysis, innovative practice, and impact verification.

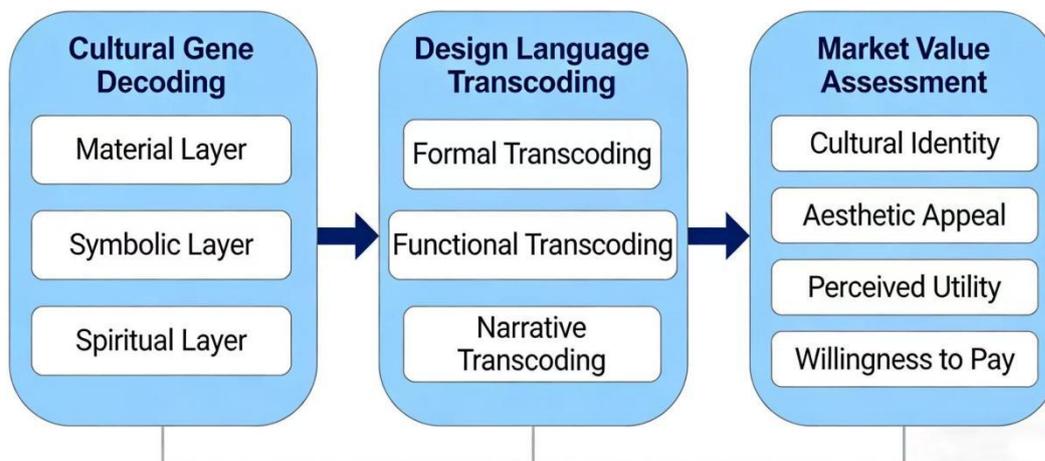

Figure 2: Cultural Gene-Driven Regenerative Design Model for Traditional Craftsmanship

Summary of Core Findings

The core findings of this study may be summarised in three points: Firstly, the craftsmanship of Huitian Kiln's Qingbai porcelain can be effectively decoded and structured through a three-tiered model of "material-symbolic-spiritual", wherein the spiritual-level genes constitute the core activator of contemporary value. Secondly, design translation pathways emphasising different gene levels yield outcomes that diverge markedly in terms of craft realisation, product form, and cultural attributes.Third, both market and expert evaluations indicate that the "narrative translation" approach, which deeply translates the spiritual-level gene, though

less dominant in direct cultural recognition, creates higher aesthetic experiences and consumer willingness. This represents the key pathway for traditional craftsmanship to achieve a high-level value leap.

Discussion
1. Paradigm Shift: Evolution of Design Philosophy from "Form-Based" Replication to "Essence-Based" Regeneration
Narrative translation achieving the highest market recognition signifies a paradigm shift in traditional craft regeneration—from "form-like" replication to "spirit-like" rebirth. "Spirit-like" denotes the contemporary creative expression and emotional resonance of spiritual-level genes. This transition reconfigures the evaluation criteria for regenerative design—the core focus shifts from "replication similarity" to "effective transmission of spiritual value and contemporary relevance," providing theoretical legitimacy for designer innovation.

2. Strategic Framework: Targeted-Combination Design Strategy Based on Cultural Gene Maps
A three-tiered gene structure and three translation pathways form a "design strategy matrix." Designers may target selections based on product positioning: mass markets and cultural dissemination prioritise formal translation; modern homewares emphasise functional translation; premium brands and cultural IPs deepen narrative translation. Successful regenerative designs predominantly employ combined strategies, ensuring innovation decisions are grounded in profound cultural understanding.

3. Theoretical Contribution: From Analytical Framework to Operational Model—Cultural Gene Theory as a Bridge Between Heritage Research and Design Practice
A key theoretical contribution of this research lies in evolving cultural gene theory from an analytical framework into the comprehensive regenerative design "DTE Model" with operational procedures. This model successfully bridges the longstanding divide between "authenticity" in heritage conservation and "creativity" in design innovation: through systematic "decoding," it concretises abstract authenticity into actionable gene units;strategically "translating" it to establish culturally grounded boundaries for creativity; and multidimensionally "evaluating" to scientifically assess the transmission of cultural value and market reception. Thus, the model serves as an academic bridge and practical compass connecting history with the future, preservation with innovation.

4. Practical Implications and Future Directions
Revitalising intangible cultural heritage projects like Hutian Kiln's Qingbai porcelain
requires initiating a systematic 'cultural gene audit', followed by flexible selection of translation pathways via a strategic matrix. Priority should be given to narrative development of spiritual-level genes to overcome homogenised competition. Future directions include cross-craft case studies to validate conclusions' universality, longitudinal research tracking long-term cultural identity, and exploring AI-assisted cultural gene translation alongside database construction.

Conclusion
This study successfully translates cultural gene theory into an operational framework for traditional craft regeneration design. By deconstructing the three-tiered cultural genes of Hutian Kiln Qingbai porcelain, it proposes three design translation pathways and constructs a

comprehensive "decoding-translation-evaluation" system. Empirical research validates the framework's efficacy, revealing the core value of the narrative translation pathway.This research advances the concept of authenticity in intangible cultural heritage from static preservation towards dynamic gene continuity, resolving the dichotomy between conservation and innovation. The strategic matrix and evaluation methodology provided offer transferable practical solutions for the living transmission of Hutian Kiln Qingbai porcelain and similar intangible cultural heritage. The vitality of traditional craftsmanship lies in the contemporary creative continuation of its cultural genes.

Acknowledgments

References

Blackmore, S. (1999). *The meme machine*. Oxford University Press.

Chen, X., Li, Y., & Zhang, H. (2023). Evaluation of cultural sustainability in intangible cultural heritage product design. Sustainability, 15(5), 4201.

Chinese Silicate Society (Ed.). (2010). History of Chinese ceramics (J. Wang, Trans.). Cultural Relics Press, Beijing, China.

Dawkins, R. (1976). *The selfish gene.* Oxford University Press.

Distin, K. (2005). The selfish meme: A critical reassessment. Cambridge University Press.

Hu, J. (2022). From preservation to creation: Contemporary design transformation of Jingdezhen blue-and-white porcelain. Journal of Design History, 35(2), 156–173.

Kikuchi, Y. (2019). Transnational modern design histories in East Asia: An introduction. Journal of Design History, 32(1), 1–8.

Lee, Y. K. (2018). Storytelling in cultural heritage tourism: Creating meaningful experiences. Journal of Heritage Tourism, 13(6), 507–520.

Hao, G. N. (2025). Cultural decoding research on button knot pattern design. Tiangong (Tianjin Polytechnic University Journal), 21(21), 8–11. (In Chinese)

Lin, C. L. (2020). Integrating cultural elements into product design: A systematic review. International Journal of Design, 14(3), 1–16.

Moalosi, R., Popovic, V., & Hickling-Hudson, A. (2010). Culture-orientated product design. International Journal of Technology and Design Education, 20(2), 175–190.

Norman, D. A. (2013). *The design of everyday things* (Rev. ed.). Basic Books.

Qin, D. (2012). *Archaeology of the Song, Yuan, and Ming dynasties.* Cultural Relics Press, Beijing, China. (In Chinese)

Shao, J. W. (2013). Symbols and meanings in design: A case study of Hong Kong cultural products. Zhuangshi (Decoration), 258(8), 74–76. (In Chinese)

Xie, M. L. (2012). Ceramic notes: Trajectories of thought and practice in ceramic history. Shanghai Calligraphy and Painting Publishing House, Shanghai, China. (In Chinese)

Wang, F., & Liu, Y. (2021). A closed-loop framework for intangible cultural heritage innovation design. Journal of Cultural Heritage Management and Sustainable Development, 11(3), 329–344.

Wu, J., Li, J., & Luo, H. (2009). Analysis of body and glaze composition of Song Dynasty Qingbai porcelain from Hutian Kiln, Jingdezhen. Journal of the Chinese Ceramic Society, 37(7), 1186–1191. (In Chinese)

Xu, H. C. (2006). *Design semiotics. Tsinghua University Press,* Beijing, China. (In Chinese)

Yang, L. (2021). Innovation and tradition in contemporary Jingdezhen porcelain design. Craft Research, 12(2), 179–198.

Yuan, L., & Gu, J. (2009). *The study of intangible cultural heritage.* Higher Education Press, Beijing, China. (In Chinese)

Zhang, W. (2021). Cultural gene extraction and application in cultural creative product design. Design Studies, 74, 101016.

Zhou, Q. (2023). Integrating memetics and material culture studies: A new approach to traditional craft innovation. Journal of Material Culture, 28(1), 78–96.