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Research Article

Preserving Intangible Cultural Heritage Through Material Culture: Historical Artistic Codes of Yuxian Paper-Cutting in Modern Packaging

Yu Yang[1,*], Mohd Rosli Arshad[1]
[1]Faculty of Creative Industries, City University, Petaling Jaya 46100, Malaysia
[*]**Correspondence:** Yu Yang, univi1128@gmail.com

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Abstract

This study examines how the visual codes of Yuxian paper-cutting are embedded in contemporary commercial packaging. Drawing on a historical baseline of thirty-two published patterns spanning three temporal strata and a purposively sampled corpus of twenty-five contemporary packaging designs, we apply a four-dimensional coding rubric (motif, chromatic system, composition, and craft trace) informed by Panofsky's iconography and social-semiotic visual analysis. The results show that there is an asymmetry in fidelity where elements that can be visually encoded are subject to different degrees of preservation during their media transmission, whereby color is shown to be the most stable of these elements, and the craft trace, which exists only as a physical manifestation of intangible heritage, is always absent from the current archive. The study reinterprets commercial packaging as a distributed, unintentional visual archive and develops a tangible/intangible continuum and a layered completeness model of archival integrity.

Keywords

Yuxian Paper-Cutting, Intangible cultural heritage, Commercial packaging, Unintentional archive, Layered completeness

1. Introduction

There is one major irony that prevails in relation to the present developmental path of folk paper cutting in China. In the regions wherein this tradition had once thrived, paper cutting is undertaken mainly by the elderly population; however, it becomes more and more challenging for this population to teach the younger generation how to manipulate scissors, paper, and color. Nonetheless, images from paper-cut thrive on an unprecedented level of popularity. In surveys conducted in supermarkets

in the northern parts of China, images of paper-cut are found everywhere on products such as bottles of yellow wine, high-quality tea, mooncakes, and cosmetic packages which try to establish themselves as culturally significant. It appears that this form of art is caught up between decline and multiplication. This brings about a question that remains unanswered in academic literature: How does it retain itself in these commercial products?

Paper cutting from Yuxian, which came into existence in the late Qing dynasty and gained aesthetic perfection during the period of late Qing and Republican eras, developed into a separate genre under artists like Wang Laoshang, whose stylized representations of opera actors and flowers still serve as examples. The period of collective production, which spanned the decades of the 1950s to the 1970s, saw the standardization of several motifs in the art form and increased the spread of the art, and the inclusion of the art form on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity in 2009 conferred international recognition upon it. Yuxian is recognized for the distinctive practice of dyeing paper cutting in the region (Liu, 2021). In this paradigm, the cut serves as the surface upon which an applied chromatic system, characterized by multiple layers of paint, has been the distinctive hallmark of the genre for decades.

The safeguarding of these traditions, on the other hand, is inherently bound up with the physical items that carry them, highlighting a paradoxical relationship between intangible heritage and the material objects that contain it (Akagawa & Smith, 2018). Amidst this paradox lies the uneasy and mostly unstudied role of commercial packaging, which cannot be considered either authorized archives or accepted cultural practices but numerically speaking ranks amongst the most prevalent means by which paper cuts come into contact with their audiences. In practice, it functions as an unintentional archive: a physical storage space for visual cultural heritage curated without any intention to preserve. Although the body of knowledge related to modern paper cutting spans many decades (Yan et al., 2024), the available research on the topic has been limited to the examination of techniques used by heirs and digital documentation, thus overlooking the potential archival function of industrially produced packages, an important oversight, considering the widespread presence of packaged products within the current context.

This study attempts to fill the gap by examining the means by which contemporary packaging mediates the cultural heritage of Yuxian paper-cutting, as well as what aspects of that heritage are, or are not, preserved through this form of mediation. Through its focus on the unintentional archive represented by commercial packaging, this study makes a contribution not only to the field of ICH studies but also to archival science and design history and proposes a layered framework for assessing what survives when craft becomes carried by material culture.

While existing research has applied social-semiotic frameworks to intentionally designed cultural packaging (Hu et al., 2019) and mapped generative approaches to the Yuxian style (Wang & Zhou,

2025), the archival function of commercial packaging (its role as an unintentional repository of intangible cultural heritage) has received little sustained attention. The present study extends these frameworks in two directions. First, it repositions packaging as an unintentional archive rather than an intentionally authored communicative artifact, shifting the analytical question from communicative efficacy to fidelity of unintended transmission. Second, it introduces craft trace as a negative-control dimension that captures precisely what visually coded frameworks are structurally unable to register, thereby making visible the boundary between what material culture can and cannot carry. Three findings emerge from the analysis that follows: the motif dimension undergoes narrative-to-iconic reduction, the chromatic system shows unexpected cross-medium stability, and craft trace is systematically absent from packaging media.

2. Data and Methods

2.1. Historical Baseline Samples: Three Temporal Strata

For the purpose of setting a point of comparison from history for present-day packaging design, the following three temporal layers are chosen, each having a core group of designs originating from the Yuxian papercuttings. The first layer represents the designs dating back to the Qing and Republican periods (about 1900-1930). These designs consist of figures from operas and other auspicious images of the time period-the traditional auspicious motifs that defined the tradition's pre-modern visual repertoire. The second stratum includes the late creations of Wang Laoshang and his disciples and topics influenced by collective agricultural production, covering the period between the 1950s and the 1970s. The third and latest stratum represents the edited and selectively chosen patterns from the existing models created in the compilation process carried out in the early stages of reforms, which dates back to the 1980s. With the restricted availability of primary records, the source material was compiled from pattern books published by Hebei Fine Arts Press, ensuring availability for future validation. The composition of these three strata along with their source data is presented in Table 1.

Table 1

Three Temporal Strata of Historical Baseline Samples

Temporal Stratum	Time Range	Representative Motifs	Data Source	Sample Count
Late Qing–Early Republican	c. 1900–1930	Opera figures; auspicious motifs	Published pattern catalogs	8
Wang Laoshang & Collectivized Era	1950s–1970s	Mature stylized works; collective themes	Hebei Fine Arts Press compilations	14

Early Reform Era	1980s	Codified, editorially selected patterns	Hebei Fine Arts Press compilations	10
Total	-	-	-	32

2.2. Contemporary Packaging Samples

The current sample consists of commercially packaged items created between 2010 and 2025 in Yuxian County and its surroundings, including types of packaging like those for food products, liquors and teas, cosmetics, and cultural creative goods. To maintain relevance, the sample has been collected through the purposive method, based on criteria that either involve an affirmation regarding the Yuxian paper-cuts' influence on the packaging item or the presence of visual elements that match the style of Yuxian paper-cuts. These dual criteria capture both explicit and stylistic references to the tradition, enabling the study of how it is deliberately translated into contemporary visual discourse. The corpus comprises twenty-five packages; the rationale for this sample size is elaborated below.

The corpus was assembled through three complementary channels: (i) on-site purchase during fieldwork in Yuxian County and adjacent counties (Weixian, Yangyuan) between 2022 and 2024; (ii) online e-commerce platforms (primarily Taobao and JD) sampled between 2023 and 2025 using the search terms "Yuxian paper-cut packaging" and "Yuxian dyed paper-cut"; and (iii) samples encountered at cultural fairs and museum shops in Zhangjiakou and Beijing. Inclusion required either an explicit textual reference to Yuxian paper-cutting on the packaging or clear visual affiliation with Yuxian stylistic markers (the layered dyeing palette, tuanhua or jiaohua composition, or opera and auspicious motifs consistent with pattern books from Hebei Fine Arts Press). Excluded were products drawing on generic northern Chinese paper-cutting styles without Yuxian-specific markers, and packaging where paper-cut imagery served as decorative background rather than as a principal visual element. Both officially licensed heritage products (n = 9) and non-licensed commercial products (n = 16) were included to capture the full spectrum of vernacular appropriation. The sample size of twenty-five reflects the interpretive logic of qualitative iconographic analysis rather than statistical sampling: consistent with comparable social-semiotic studies of packaging (e.g., Hu et al., 2019, n = 18), the sample was determined by analytical sufficiency (Saldaña, 2021) rather than by representativeness of any statistical population.

2.3. Analytical Framework: Four-Dimensional Artistic Code

This conceptual framework combines the three-level iconography methodology by Panofsky and the social-semiotic model for analyzing visual heritage (Hu et al., 2019) to provide a description and interpretation of paper cutting visuals during their transition through different forms. Using this framework, this research will apply four coding categories that will help evaluate the historical artistic

code in contemporary packaging designs of Yuxian paper cuts. Motif, chromatic scheme, and composition serve as positive controls, encapsulating the visually codable aspects that have a credible chance of crossing media borders. The fourth element, craft trace, is used as a negative control, intended to pick up on all those embodied aspects carried by the knife that are impossible for material culture to transmit. This uneven design lets the analysis identify not only what gets transferred to the package medium but also what is structurally unable to be transferred.

2.4. Coding Procedure and Reliability

Each of the four dimensions was operationalized through a structured coding rubric (Appendix A) specifying inclusion criteria and decision rules. Motif was coded on the number of narrative elements per composition (single icon versus compound scene); chromatic on the presence or absence of each of the four hallmark colors within a defined tolerance for CMYK-driven shifts; composition on the recognizability of tuanhua or jiaohua schemas within the rectangular panel; and craft trace on the presence of indexical markers of the cutting hand: visible kerf directionality, calibrated pressure variation, and hand-tremor pauses. All twenty-five packaging samples were coded against these criteria, with boundary cases logged in analytic memos following Saldaña (2021). To verify coding stability, a random subset of ten samples was re-coded four weeks after the initial pass without reference to the earlier assignments; agreement across the four dimensions exceeded ninety percent, with residual discrepancies resolved through re-reference to the rubric. Because the analysis is interpretive rather than statistical, all frequencies reported in Section 3 and Table 2 are descriptive counts derived from this rubric and should be read as structured qualitative observations, not as inferential statistics. The historical baseline remains a relative reference point, and judgments of preservation or loss are framed within this acknowledged limit.

3. Results: Vertical Comparison Between Historical Originals and Contemporary Packaging

3.1. Motif Dimension: From Narrative Density to Iconic Fragments

The motif is the part that experiences maximum historical development among the three levels. In the late Qing and early Republican period, opera narratives were rendered as multi-scene compositions on a single sheet, with several figures and scenes arranged together. It is clear that in the period between the 1950s and 1970s, there is a noticeable tendency toward formalization in floral-bird and zodiac decorations, where motifs are abstracted into pure form without losing their narrative characteristics. On the other hand, modern packaging seems to be a more dramatic departure because all examples in the corpus employ a single decorative element, whether it is a magpie or a round tuanhua motif (Figure 1). Category differences also emerge and align with the counts summarised in

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Table 2: eleven of twelve food-category samples retain multiple motifs or supporting narrative elements, while nine of ten cosmetic and cultural-creative samples reduce to a single iconic silhouette. Similar phenomena have also been observed in the transformation of paper-cutting designs into other art forms, for example, paintings (Chen, 2023).

Figure 1

Diachronic Transformation of the Motif Dimension: From Multi-Scene Narrative to Single Icon



Note. Left: late Qing–Republican multi-figure opera composition (integrated scenography, 4–5 figures per sheet). Centre: mid-twentieth-century stylised floral-bird motif (formalised but retaining ensemble structure). Right: contemporary packaging application, exemplifying the corpus-wide reduction to a single iconic element (22 of 25 samples), with the strongest simplification concentrated in cosmetic and cultural-creative categories.

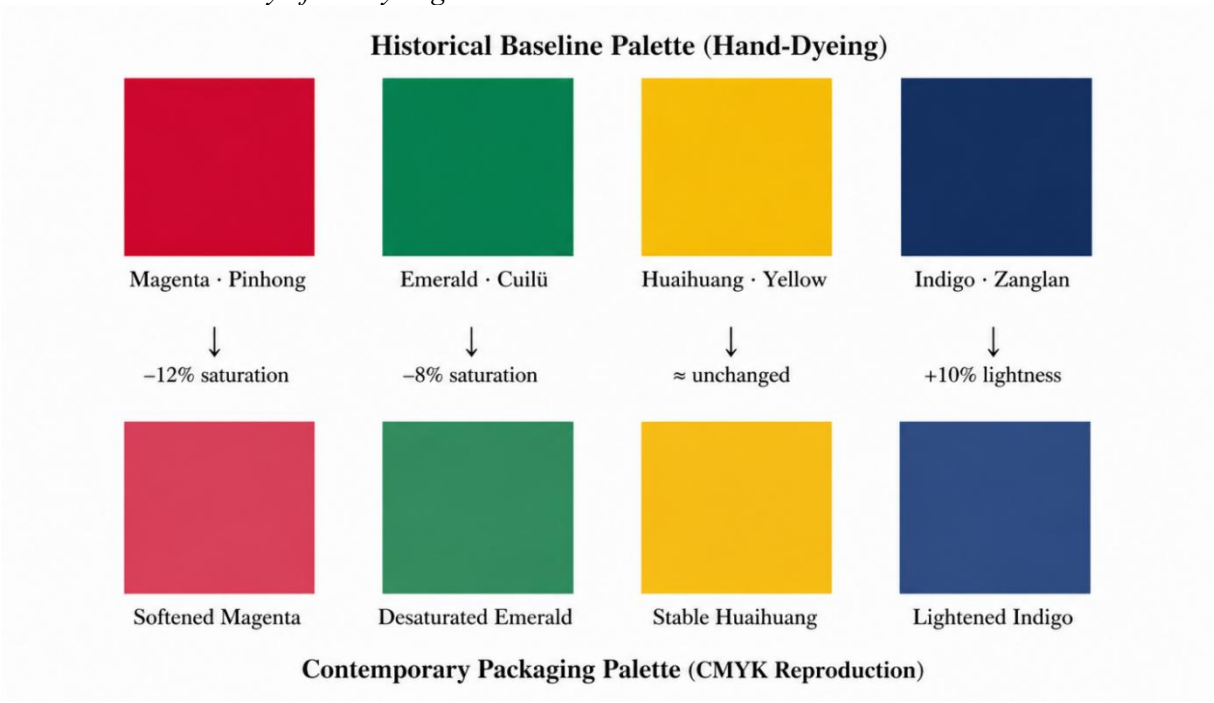
3.2. Chromatic Dimension: Surprising Stability of the Dyeing Code

Unlike the clear signs of attrition in the motif category, the chromatic category shows a considerable level of consistency across media forms. In this regard, the historical baseline consists of a well-identified set of colors that include magenta, emerald, huaihuang yellow, and indigo blue. These four hues are applied through the layered hand-dyeing process that defines Yuxian's visual signature. Although packaging designs have evolved considerably around these hues, the core palette itself remains identifiable across the contemporary corpus. Twenty-one of the twenty-five samples retain the four hallmark hues in recognisable form, while mild CMYK-driven shifts (magenta reading as pink, emerald as blue-green) are visible in sixteen of the twenty-five; none of these shifts compromises identification of the inherited colors. This chromatic stability parallels findings in other studies documenting how traditional Chinese color systems retain their symbolic legibility across the modernization of media (Wu & Wu, 2026). Color thus emerges as the most stable heritage marker and consequently the most legible attribute of paper-cutting authenticity for consumers.

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Figure 2

Cross-Medium Stability of the Dyeing Code



Note. Top row: historical four-color baseline; bottom row: corresponding palette in contemporary packaging. Cross-medium comparison shows the four hallmark colors surviving the transition to CMYK printing with mild saturation and lightness shifts. Any numerical annotations embedded in the figure are qualitative descriptors of visual inspection, not instrumental measurements; a systematic account of the coding criteria is given in Appendix A.

3.3. Compositional Dimension: Translating Tuanhua and Jiaohua into Packaging

The compositional element acts as an intermediary between motif fractures and stable color tones. In traditional motif compositions, there are two classical forms of compositional structures that make up Yuxian motifs. These include tuanhua, a circular composition with symmetry distributed around the focal point, and jiaohua, with four corners inside an enclosed space to decorate. Applied to rectangular panels which are typical for modern packaging materials, such structures are systematically analyzed and reconstructed. Tuanhua patterns are typically represented as rings around the panel edges or as a repeating pattern in stripes while jiaohua patterns persist in packaging for alcoholic beverages and tea products. The manipulation of the negative space creates considerable differences since the holes created manually in the originals, where there is a natural relationship between light and substance, are reduced to simple contours in the prints, hence altering the visual rhythm despite the exact duplication of the surface decorations. Seven of the eight liquor and tea samples preserve the tuanhua or jiaohua frame in recognisable form, whereas five of the six cultural-creative samples break the frame entirely, redistributing motifs across the panel, a tendency

consistent with the generative design approach documented by Wang & Zhou (2025).

3.4. Craft Trace (Negative Control): Systematic Absence of Tacit Knowledge

Craft Trace can be called the negative control for the analysis model because it indicates exactly what does not come into play in the first three models. In the historical examples of paper-cutting from Yuxian, traces of the cutting process are clearly visible on the face of the artwork, such as direction, pressure, and pauses, which make up the "knife flavor." They cannot be separated from the material practice of cutting, embodying an understanding which cannot be transcribed into symbolic code. In the contemporary corpus, no sample preserves these embodied markers in any meaningful sense; the printed wrapping, regardless of its technical sophistication, can reproduce the image signals of the craft practice but not the indices themselves. This systematic absence confirms the methodology hypothesis of the asymmetric design framework, wherein material culture lacks structural capability to transfer embodied craft knowledge. This finding aligns with other studies documenting the difficulties faced in capturing tacit knowledge in traditional handicrafts (Yang, 2024). A summary of the four-dimensional fidelity framework is presented in Table 2 below.

Table 2

Comprehensive Fidelity Assessment of the Four-Dimensional Artistic Code

Coding Dimension	Type	Historical Original Features	Contemporary Packaging Expression	Fidelity Rating	Cross-Category Variation
Motif	Positive	Multi-scene narrative compositions (3–5 figures per sheet); dense auspicious symbolism	Single iconic element extracted (22 of 25 samples reduce to one dominant motif)	Low–Medium	Food: 11/12 retain fuller motifs; Cosmetic & cultural-creative: 9/10 highly abstracted
Chromatic	Positive	Four-color hand-dyed palette (magenta, emerald, *huaihuang* yellow, indigo blue)	Core palette retained in 21/25 samples; mild CMYK shifts in 16/25	High	Stable across all four product categories
Compositional	Positive	Circular *tuanhua* and square *jiaohua* schemas; symmetrical centered focus	Schemas deconstructed and reassembled on rectangular panels; negative space reduced to printed silhouettes	Medium	Liquor & tea: 7/8 preserve frames; Cultural-creative: 5/6 break frames
Craft Trace	Negative Control	Knife direction, calibrated force, subtle pauses	Reduced to flattened image signals; no	Absent	No meaningful variation across categories

("knife flavor"); preservation of material indices embodied indices of cutting hand

4. Discussion

This empirical evidence suggests that there needs to be a reconsideration of the role of commercial packaging in relation to the intangible heritage of culture. This is not a vehicle for commodification nor a stage upon which traditional motifs can be placed, but it is a decentralised and unintentional repository for visual culture, one created by millions of people without any intention of conserving it. This classification relies on the existing classifications found in different archives, including commercial advertisements and trademarks, and adds to it by incorporating ICH visual codes. The twenty-five samples presented in this case form only a small part of this archive, and therefore any generalizations can be made only when a large number of samples are taken.

This repositioning also reworks the analytical purchase of prior visual-language frameworks. Where Hu et al. (2019) treat packaging as a communicative artifact whose visual grammar is authored for the consumer, the present study reads packaging as a non-authored archive whose visual grammar accumulates without curatorial intent. This shift matters because it changes the object of assessment: the four-dimensional rubric is no longer measuring the effectiveness of communication but the fidelity of unintended transmission. The introduction of craft trace as a negative control makes this legible: it flags the class of information that visually coded frameworks are structurally incapable of preserving, regardless of how skilful the packaging design.

There is a fidelity difference among the four codes, allowing for an understanding of which aspects of the code of history are possible to transmit into physical objects and which are not. The aspects that can be visually encoded, such as motifs, the color system, and composition, serve as information-layer aspects and migrate across media with different but definite levels of fidelity. Embodied craft knowledge such as the sense of feeling when using scissors, the layering process of dyeing, and the choice of paper, however, requires human-object engagement and cannot be transferred through print media. A latent risk emerges here: as aesthetic legibility persists while practical engagement declines, heritage may drift toward a floating iconography: visually current but detached from embodied practice. The described situation should not be understood as a criticism of packaging being a deviation from the heritage tradition, or praise for packaging as an embodiment of heritage continuity; instead, packaging must be perceived as the latest step of a constant transformation of heritage that is at a greater distance from practical life than any other stage before, a tension that resonates with broader debates on how heritage rationalities negotiate commercialization (Bortolotto, 2021).

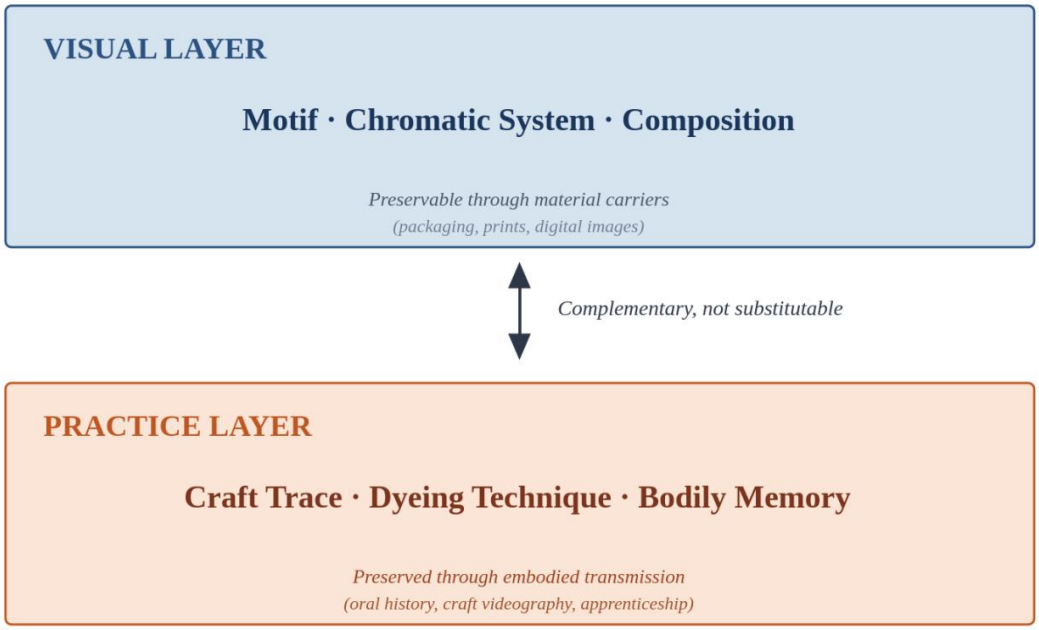
These findings speak directly to the normative conundrum Bortolotto (2021) identifies at the heart of heritage commercialization: that the very acts through which heritage becomes economically viable often erode the practices they purport to preserve. Read through the layered completeness lens developed below, the conundrum resolves partially: commercial packaging can extend the visual afterlife of Yuxian iconography without depending on or reproducing the practices of cutting, dyeing, and pattern-making themselves. This is neither betrayal nor fidelity in the strong sense; it is a redistribution of what heritage transmission is asked to do, in which material culture carries the visual layer while live transmission (apprenticeship, community practice, teaching) carries the practical layer that packaging cannot touch. Framing packaging this way also intersects with critical heritage studies' interrogation of the tangible/intangible boundary (Smith, 2006; Akagawa & Smith, 2018) and with the framing of heritage as metacultural production (Kirshenblatt-Gimblett, 2004): rather than reinforcing the dichotomy inscribed in the 2003 UNESCO Convention, the packaging archive shows the boundary as porous, with each layer requiring its own custodial infrastructure.

This asymmetry exposes a fundamental problem with archival theory. The notion of archival totality (that the records should reflect the object from all angles) cannot be sustained when the craft itself is subject to irrevocable loss yet its visible language remains widely disseminated through material culture. It is on this premise that the research suggests a hierarchical model of completeness, with the visual dimension being preserved by physical media, while the practical dimension necessitates the use of a live transmission approach, the two dimensions being analyzed separately without merging into one criterion (Figure 3). It is under such a scenario that packaging materials may be used as a valid source for the visual dimension of heritage, but only when it is combined with oral traditions and craft filming for the practical dimension, the two functioning as complementary rather than substitutable archives. This shift is consistent with other trends within heritage futures research that emphasize the need for comparative and future-oriented thinking rather than restorationist approaches (Harrison et al., 2020). The small sample of purposeful design, the limited regional context of analysis, and failure to account for consumer response represent weaknesses within the research which need to be overcome through a more comprehensive study approach.

Figure 3

The Layered Completeness Model

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5. Conclusion

This study examined how the visual codes of Yuxian paper-cutting are transferred through contemporary packaging, showing that packaging serves as a partial but efficient carrier of the tradition's visual language. With regards to the three positive codes such as motif, chromatic system, and composition, all three of them are retained in the medium of modern packaging but in varying degrees of precision, with chromatic system being the most stable and motif the most simplified. The persistent lack of the negative control in the experiment (the craft trace, complete with its blade-based markers of technique) illustrates the key limitation of material-culture translation: the visual language may be transmitted, but not the actual act of cutting.

This study offers two theoretical contributions. The first contribution is related to the material/intangible continuum approach, which questions the binary opposition inherent in the UNESCO 2003 Convention that divides heritage into two separate spheres, i.e., tangible and intangible. The second contribution concerns the inability of this dichotomy to explain the interconnectedness of both spheres within actual carriers of heritage like commercial packaging, where intangible skills become partially materialized in tangible form. This reconstruction replaces the conventional requirement of archival completeness with a layered completeness that analyses the visual and practical dimensions of heritage separately, offering a more discerning tool for future assessment of craft-related ICH in archives.

These findings carry concrete implications for practice. For intangible cultural heritage policy, they suggest that commercial packaging warrants recognition as a supplementary visual archive within registration and safeguarding frameworks: systematically collected and dated packaging inventories would provide a distributed record of how heritage iconography circulates in everyday life, alongside

the practitioner-centered records currently prioritized. For cultural institutions, the layered completeness model implies that packaging image databases should be developed as companions to (not substitutes for) oral history collections and craft-process filming, with cataloguing schemas that record both the four visual dimensions and the absence of craft trace. For design education and industry practice, the systematic absence of craft trace in printed media raises a question of representational responsibility: designers working with intangible cultural heritage iconography might acknowledge that absence explicitly, for instance through paratextual pointers on the packaging itself, such as QR-linked craft-process video or provenance notes on the pattern's historical layer, rather than allowing the visual reproduction to stand as a full-value substitute for the tradition it references.

A number of constraints define the boundaries within which the contributions are made. First, the corpus consists only of twenty-five carefully selected cases based on a regional culture tradition; future work might involve the study of far greater numbers of such cases. Further comparative studies with regard to other local cultural expressions, such as those of Fengning, Yangzhou, and Foshan paper-cuts, may help determine the viability of the suggested framework. At least equally important are consumer-based studies: how well heritage encoded into material culture can be decoded by its receivers is the crucial criterion for success.

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The authors declare that there is no conflict of interest.

Ethics approval

Not applicable.

Consent to participate

Not applicable.

Consent for publication

Not applicable.

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Appendix A

Coding Rubric for the Four-Dimensional Artistic Code

A.1 Motif Dimension

Each sample was assigned to one of three classes based on the number and organization of figurative elements: (a) Single icon (low fidelity): one primary figurative element occupies the composition, with no supporting narrative context; (b) Reduced ensemble (medium fidelity): two or three elements with limited narrative connection; (c) Compound scene (high fidelity): three or more figures or elements organized as a narrative or symbolic ensemble consistent with historical multi-scene compositions. Boundary cases (e.g., a single figure accompanied by symbolic auspicious motifs) were coded as reduced ensemble.

A.2 Chromatic Dimension

Each sample was assigned to one of three classes based on the presence of the four hallmark hues (magenta, emerald, huaihuang yellow, indigo blue): (a) Core palette retained: at least three of the four hallmark colors are present as identifiable, dominant hues; mild CMYK-driven shifts (magenta appearing as pink, emerald as blue-green) do not disqualify retention provided the underlying hue is recognizable; (b) Mild CMYK shift: at least one hallmark color appears in a shifted CMYK variant while the palette remains identifiable; (c) Palette altered: fewer than three hallmark colors present or dominant.

A.3 Compositional Dimension

Each sample was assigned to one of three classes based on the recognizability of tuanhua or jiaohua schemas: (a) Frame preserved: the schema (circular symmetry for tuanhua; four-corner enclosure for jiaohua) is legibly reconstructed on the rectangular panel with symmetrical or corner-anchored organization; (b) Frame reworked: the schema is partially recognizable but reorganized to fit the rectangular format (e.g., tuanhua as a repeating stripe or edge ring); (c) Frame broken: no discernible tuanhua or jiaohua organization.

A.4 Craft Trace (Negative Control)

Each sample was inspected for three indexical markers of the cutting hand: (a) visible kerf directionality: traces of blade direction along cut edges; (b) calibrated pressure variation: uneven line weight indicative of manual force modulation; (c) hand-tremor pauses: micro-irregularities at direction changes. Presence of any one marker was coded as partial presence; complete flattening of these indices into printed silhouettes was coded as absent. No sample in the corpus showed partial presence.