

# Gene decoding, model building and brand developing of Yangtze finless porpoise culture: a theoretical analysis framework

Zhisong Chen

*Business School, Nanjing Normal University, Nanjing, China;  
Carbon Peak and Caron Neutralization Strategy Institute of Jiangsu Province,  
Nanjing, China and  
Jiangsu Collaborative Innovation Centre for Modern Service Industry,  
Nanjing, China*

Zhitong Zhang

*School of History and Archaeology, Nanjing Normal University, Nanjing, China*

Yuhang Li

*School of Business Administration, Northeastern University, Shenyang, China*

Jia Guo

*School of Marxism, Nanjing University of Posts and Telecommunications,  
Nanjing, China*

Linlin Shen

*Business School, Nanjing Normal University, Nanjing, China*

Xinrui Wang

*College of International Languages and Cultures, Hohai University,  
Nanjing, China, and*

Meng Jiang

*Nanjing Finless Porpoise and Aquatic Life Conservation Association,  
Nanjing, China*

Received 30 November 2025  
Revised 2 May 2026  
Accepted 9 June 2026

## Abstract

**Purpose** – The Yangtze Finless Porpoise (YFP) has emerged as both an iconic species and a cultural symbol, yet its cultural branding suffers from an undefined cultural core, fragmented structural design and limited sustainability. This study aims to systematically decode the core cultural dimensions of the YFP, construct a multi-layered cultural model and propose sustainable brand-building strategies that reinforce cultural identity and support ecological conservation.

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**Funding:** This work was funded by the National Social Science Fund of China (Grant No. 22FJYB023), Humanities and Social Science Youth Fund of Ministry of Education of China (Grant No. 21YJC790017), National Natural Science Foundation of China (Grant No. 71603125), China Scholarship Council (Grant No. 201706865020), Young Leading Talent Program of Nanjing Normal University.

**Declaration of interest statement:** The authors declared that they have no conflicts of interest to this work.



**Design/methodology/approach** – Employing cultural gene theory as an analogical framework, and integrating concepts of rationality from Chinese and Western philosophy, the paper establishes a four-dimensional cultural framework comprising Aesthetic, Theoretical, Practical and Communicative rationalities (A-T-P-C). These dimensions form the analytical foundation for decoding YFP culture. A five-layer cultural structural model – spanning spiritual, institutional, behavioural, material and image layers – is constructed to organize these dimensions into a coherent brand architecture. Based on this dual theoretical foundation, a comprehensive brand-building framework encompassing positioning, shaping, dissemination, extension, maintenance and innovation is derived.

**Findings** – The A-T-P-C framework effectively identifies and organizes the core cultural elements of the YFP into a dynamic value-generation loop. The five-layer cultural structural model clarifies the hierarchical and multidimensional nature of YFP culture, translating abstract cultural dimensions into a manageable brand architecture. Building on these foundations, a sustainable “protecting the YFP with the YFP brand” strategy is proposed, fostering a virtuous cycle between cultural dissemination and ecological conservation.

**Originality/value** – This study pioneers the integrated application of cultural gene theory and philosophical rationality to species-centric cultural branding. By proposing a novel A-T-P-C cultural dimension framework coupled with a five-layer structural model, it delivers a systematic methodology for decoding, structuring, and branding YFP culture. The integrated theoretical framework provides conceptual insights and practical tools for the sustainable development of YFP culture and its ecological preservation.

**Keywords** Yangtze finless porpoise (YFP), Cultural genetics, Cultural structure modelling, Cultural branding, Theoretical analysis framework

**Paper type** Conceptual paper

## 1. Introduction

The Yangtze River, as the mother river of the Chinese nation, has nurtured rich ecological resources and deep cultural heritage. The Yangtze finless porpoise (hereinafter YFP), an iconic and rare species of Yangtze River ecology, not only carries the responsibility of ecological balance but also embodies the aspirations of riparian communities for a better life. With growing ecological awareness and the enforcement of the Yangtze River Protection Law in 2021 and the ten-year fishing ban, YFP culture has evolved into a vibrant component of Yangtze River culture. The YFP, affectionately known as the “smiling elf” for its human-like facial expression, has increasingly entered public consciousness through the operation of the National YFP Nature Reserve and the advocacy of private protection associations. As a unique cultural brand, “YFP Culture” is showing a rising trajectory of development worthy of systematic investigation.

In recent years, a series of real-world YFP cultural branding projects have emerged across the Yangtze River Basin, providing concrete empirical material for theoretical analysis. These projects fall into three main types. The first is YFP-themed IP creation and cultural creative development. Nanjing Bus Group launched the “Intersection” cultural space at Zhongshan Wharf, adopting YFP-themed IPs as core symbols and integrating cultural creative retail, themed coffee, and urban memory exhibition into a composite business format (Nanjing Public Transportation Group, 2025; Modern Express, 2025). Nantong Suzhou-Xitong Science and Technology Industrial Park created the regional cultural tourism IP “Lanruoru” based on the YFP prototype, developing animations, music videos, and social media emoticons, and extending the IP into international platforms as part of its “Protect Blue” river conservation campaign (Nantong Daily, 2025; Wu, 2025). Wuhan released its child-friendly city IP lineup featuring “Tunxiaobao” as ecological ambassador, with five digital human characters designed with the YFP as prototype (Hubei Civilization Network, 2025). Hubei Province promoted “Tun Bao” as an international recommendation officer at the “Smile with Yangtze Finless Porpoise” campaign in Paris (Wuhan Yangtze Daily, 2025). The second type involves digital technology-enabled conservation and cultural communication. Wuhan pioneered the “Digital Yangtze Finless Porpoise” concept, registering over 600 related trademarks (Guo, 2026); the YFP calf-delivery live broadcast attracted 220 million online viewers (Wuhan Municipal People’s Government, 2024), and a sonar and AI-based monitoring system now enables real-time individual identification and behavioural tracking (Guo, 2026). The third type integrates YFP culture with science education and tourism. Nanjing developed a “Yangtze Finless Porpoise City Park” along the Xiaguan Riverside scenic belt, connecting the Finless Porpoise Bookstore and the Yangtze Aquatic Life Science Museum, while launching YFP-themed study tour

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programmes (Modern Express, 2025). Yangzhou established a YFP conservation exhibition hall integrating intangible cultural heritage experiences with digital interactive science education (Jiangdu District People's Government, 2026). Sinopec opened its first cultural tourism IP-themed service station in Wuhan with the YFP as the central motif, pledging to allocate proceeds from designated public welfare products to YFP conservation (China Enterprise Observer, 2025). These diverse projects collectively demonstrate an emerging synergy among governmental bodies, cultural enterprises, research institutions, and social organizations, providing a rich empirical foundation for the theoretical framework developed in this study.

Despite these advances, three deep-seated issues constrain the YFP cultural brand: (1) an ambiguous cultural core, hindering distinct brand identity and cultural resonance; (2) the absence of a systematic structural model, leaving brand building without coherent theoretical foundation or unified image; and (3) a short-term orientation that overlooks the need to reinvest brand gains into ecological protection, jeopardizing long-term sustainability. To address these issues, this study investigates three research questions: (1) How can the unique cultural elements of the YFP be systematically decoded to sharpen brand identity? (2) What structural models can represent and integrate the cultural dimensions of the YFP? (3) What strategies can ensure a sustainable alignment between YFP cultural branding and ecological conservation?

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature. Section 3 decodes the YFP cultural dimensions through the A-T-P-C framework. Section 4 constructs a five-layer cultural structural model. Section 5 translates these theoretical insights into actionable brand-building strategies. Section 6 concludes with contributions and future research directions.

## 2. Literature review

Research on YFP culture spans cultural gene decoding, structural modelling and brand development, yet lacks systematic integration. This section reviews these three domains and identifies critical gaps.

### 2.1 Cultural gene theory: from biology to cultural analysis

The gene concept has been extended to cultural analysis. Dawkins (1976) introduced “memes” as cultural replicators; Blackmore (1999) emphasized imitation as the transmission mechanism, and Distin (2005) distinguished natural from designed memes. Lumsden and Wilson (1981) proposed gene-culture coevolution, while Boyd and Richerson (2005) formalized dual-inheritance theory. Whiten (2017) documented a “second inheritance system” extending biological evolution through culture across vertebrates.

The “cultural keystone species” concept (Garibaldi and Turner, 2004) holds that certain species are so fundamental to a culture's identity and practices that their loss would transform that society. Jepson and Barua (2015) developed a theory of flagship species action, demonstrating that cultural salience—rather than ecological significance alone—drives public engagement. Bowen-Jones and Entwistle (2002) stressed the importance of local cultural context when selecting flagship species. Verissimo *et al.* (2010) proposed an interdisciplinary framework for identifying conservation flagships, and Thomas-Walters and Raihani (2017) experimentally validated the fundraising value of culturally salient species. Complementarily, Gavin *et al.* (2015) defined biocultural approaches to conservation, and Poe *et al.* (2014) identified five cultural dimensions of socioecological systems (meanings and values; knowledge and practice; governance and access; livelihoods; interactions with biophysical environments).

Despite these advances, no study has systematically decoded the cultural gene structure of a specific endangered species, nor integrated Habermasian philosophical rationality (Habermas, 1984, 1992) as a structural basis. This study addresses this gap by introducing an Aesthetic-Theoretical-Practical-Communicative (A-T-P-C) rationality framework.

## 2.2 Cultural structure modelling: from organization to species culture

Multi-layered cultural models have deep disciplinary roots. [Schein's \(2010\)](#) three-level model (artifacts, espoused values, basic assumptions) remains foundational; [Miranda and Fernandez-Valera \(2025\)](#) confirmed its enduring relevance across contemporary contexts. [Melnikovas \(2018\)](#) extended layered modelling to broader social phenomena. [Geertz \(1973\)](#) conceptualized culture as multi-layered systems of meaning requiring "thick description." [Daniel \(2016\)](#) re-examined heritage value typologies, emphasizing both tangible and intangible dimensions. [Graves et al. \(2017\)](#) demonstrated that species richness alone does not predict cultural ecosystem service value, underscoring the primacy of cultural meanings attached to species. Existing cetacean-focused studies ([Whiten, 2017](#)) have addressed ecological and behavioural dimensions without constructing structural models for the cultural systems surrounding these species. This study fills this gap by proposing a five-layer cultural structural model (spiritual, institutional, behavioural, material, image) specific to YFP.

## 2.3 Cultural brand development: from heritage to sustainability

Cultural brand development occupies the intersection of brand theory, cultural studies, and sustainability. [Keller's \(1993, 2008\)](#) customer-based brand equity (CBBE) model builds brand equity hierarchically; [Kapferer's \(2012\)](#) brand identity prism identifies six facets including culture; and [Aaker \(1996\)](#) defines brand identity as a set of unique associations. [Keller et al. \(2010\)](#) extended brand equity to cultural contexts.

Cultural symbolism, authenticity, and well-being are increasingly linked. [Jian et al. \(2019\)](#) found that cultural symbolism relates positively to brand authenticity and consumer well-being. [Rahman et al. \(2021\)](#) proposed an integrative heritage destination brand equity model; [Nobre and Sousa \(2022\)](#) showed that cultural heritage drives nation branding through multi-stakeholder engagement. [Li et al. \(2021\)](#) demonstrated that innovation and experience values significantly affect purchase intentions for museum cultural products, while [Radosavljevic and Kuletin-Culafic \(2019\)](#) mobilized tangible and intangible heritage for place branding and sustainable territorial development.

In conservation, flagship species have been used for marketing ([Verissimo et al., 2010](#); [Santarem et al., 2018](#)), yet systematic brand strategies rooted in species' cultural gene structures remain underdeveloped. [Han et al. \(2026\)](#) linked tourist cultural identity to sustainable cultural tourism. No existing framework specifically addresses the dual mandate of cultural dissemination and ecological conservation for an endangered species brand.

## 2.4 Issues requiring further research

In summary, three gaps persist: (1) systematic cultural gene decoding for a flagship species, exploring how A-T-P-C dimensions interact; (2) dynamic cultural structure models capturing hierarchical species-culture evolution; (3) an integrated sustainable brand framework that links cultural decoding, structural modelling, and conservation feedback loops. This study proposes an integrated "gene-model-brand" strategy, including positioning, shaping, communication, extension, maintenance, and innovation, grounded in the principle of "protecting the YFP with the YFP".

## 3. Genetic decoding of YFP culture

Cultural genes, akin to biological DNA, provide a metaphorical lens for understanding how core cultural elements are encoded, replicated, and transmitted across generations ([Li and Wu, 2021](#)). It is essential to state clearly that this constitutes an analogical thought-model rather than a claim of genetic determinism. The framework's primary limitation lies in its interpretive rather than predictive nature: it excels as an integrative tool for organizing cultural elements and clarifying their interrelationships, but it cannot simulate complex social processes with

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experimental precision. With this boundary acknowledged, the model's value lies in translating abstract cultural heritage into structured, actionable brand-building dimensions.

YFP culture, rooted in human-nature interaction, integrates Marxist materialism and ecological principles. Its foundational structure is organized around four rationalities—Aesthetic (A), Theoretical (T), Practical (P), and Communicative (C)—derived from both Chinese philosophical tradition and Western rationality theory (Habermas, 1992; Li and Wu, 2021). These four dimensions reflect human agency and the finless porpoise's ecological traits, forming a stable analytical framework through the dynamic interplay of critical reflection and free will. This model underpins YFP's cultural identity, sustainable development, and ecological resource utilization, balancing human creativity with natural harmony.

### *3.1 Aesthetic rationality (A): the core of cultural identity*

Aesthetic Rationality refers to the capacity of the YFP to evoke an immediate, pre-reflective emotional response that serves as the affective foundation for all subsequent cultural engagement. Its operational criterion is the “smile as a natural super-sign”: the YFP's unique facial morphology, which resembles a human smile, functions as a universal non-verbal signal of friendliness and vitality. The specific indicators of this dimension include: (1) the baseline level of positive affect the YFP image generates across diverse audience segments; (2) the degree of spontaneous emotional resonance measured through audience engagement metrics; and (3) the extent to which the YFP's visual identity can be consistently recognized and differentiated from other species icons. As Hargrove (1989) argues, when natural beauty is perceived as an inherent good, a moral obligation to protect it arises—the YFP's beauty thus becomes an ethical force. This dimension directly governs the brand's visual identity system and core IP development, ensuring the brand offers immediate sensory appeal that opens the gateway for deeper cultural and conservation messages.

### *3.2 Theoretical rationality (T): the anchor of public-welfare spirit*

Theoretical Rationality refers to the internal, value-driven commitment that transcends short-term utilitarian calculation and anchors the brand in a non-negotiable public-welfare orientation. Its operational criterion is “public interest stewardship as a constant”: the brand must foreground transparency, scientific integrity, and the long-term welfare of the YFP irrespective of commercial pressures. Specific indicators include: (1) the presence of publicly documented governance structures that insulate conservation commitments from profit-driven interference; (2) the proportion of organizational resources dedicated to non-revenue-generating conservation activities; and (3) the consistency between the brand's stated values and its observable practices over time. This dimension echoes Feng Youlan's concept of the “realm of heaven and earth”—the highest state of human existence in which one acts not for personal gain but out of conscious unity with the universe (Feng, 2014). It also aligns with a Kantian ethical framework, where genuinely moral action arises from autonomous adherence to duty rather than external incentive (Kant, 2017). In brand governance, Theoretical Rationality functions as the permanent moral compass, ensuring that commercial momentum never drifts from the brand's founding purpose.

### *3.3 Practical rationality (P): the engine of sustainable operations*

Practical Rationality represents the capacity to translate aesthetic affection and ethical commitment into material, reproducible practices that generate sustainable value. Its guiding principle is “delivering conservation through culture,” and its operational criterion is the existence of a closed-loop system wherein YFP-themed economic activities directly fund conservation efforts. The specific indicators include: (1) the proportion of revenue from YFP cultural products and services allocated to on-the-ground conservation; (2) the number and

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diversity of YFP-themed products, tourism routes, and services in operation; and (3) the demonstrable impact of brand-generated funds on measurable conservation outcomes (e.g. population monitoring, habitat restoration). This dimension transforms the YFP from a strictly protected object into a high-quality ecological product, aligning with the ecological civilization principle that “lucid waters and lush mountains are invaluable assets.” In practice, this governs the brand’s commercial extension system: the design of cultural creative merchandise, the integration of YFP motifs into urban public spaces, and the structuring of transparent revenue-sharing mechanisms that link brand profits to ecological preservation.

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### *3.4 Communicative rationality (C): the network for participation*

Communicative Rationality refers to the construction of multi-stakeholder interaction platforms that transform passive audiences into active participants in the brand’s meaning-making process. Its operational criterion is “from exposure to engagement”: every brand touchpoint is designed to lead not to a terminal consumption point, but to an invitation for deeper involvement. Specific indicators include: (1) the number and diversity of participatory channels available (volunteer networks, citizen-science programs, social media engagement platforms); (2) the conversion rate from passive audience to active participant across these channels; and (3) the extent to which participant-generated content and initiatives contribute to the brand’s evolution. This dimension guides the brand’s communication strategy and community management. A well-functioning network not only disseminates the YFP’s image but also absorbs diverse actors—from school children to corporate partners—into the brand’s co-construction, thereby generating fresh touchpoints and sustaining the brand’s communicative vitality over time.

### *3.5 The A-T-P-C value-generation loop*

The dynamic interaction among these four dimensions constitutes a complete value-generation loop, not a linear sequence. Aesthetic Rationality opens an affective connection that makes the audience receptive; Practical Rationality converts that connection into sustainable, funded operations; Theoretical Rationality guarantees that commercial momentum remains aligned with public purpose; and Communicative Rationality ensures the brand remains a living, co-constructed social reality rather than a static logo. This A-T-P-C loop is the primary driver that can activate and continually renew the YFP cultural brand.

## **4. Model building of YFP culture**

If the A-T-P-C dimensions constitute the cultural DNA, the task of brand building requires a structural model that organizes these abstract drivers into a concrete, manageable architecture. This five-layer model proceeds outward from the most deeply embedded values to the most publicly visible representations. It draws on established cultural layering theories, including [Schein’s \(2010\)](#) three-level model of organizational culture (artifacts, espoused values, basic underlying assumptions) and the “onion model” ([Melnikovas, 2018](#)), while extending them into a five-layer structure specifically adapted for species-centred cultural branding. Each layer corresponds to a distinct area of brand management, and the model as a whole ensures that the brand grows as a coherent entity rather than a fragmented set of promotional campaigns.

### *4.1 Spiritual layer: the brand’s purpose core*

This central layer encapsulates the fundamental belief system that animates the entire brand. Its key components are: (1) freedom as the signature motif. The YFP’s observed free mobility in the Yangtze becomes the brand’s central symbol for an unimpeded, vital life, differentiating the brand from static cultural heritage and expressing humanity’s broader aspiration for harmonious coexistence with nature. (2) practice as originary duty. The brand’s credibility

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rests on a living commitment traceable to concrete conservation actions. Institutional milestones include the Yangtze River Protection Law and the subsequent ten-year fishing ban (Liu, 2023). Applied innovations, such as Yangzhou University's non-invasive YFP DNA tracing technology, demonstrate how scientific practice directly enables precise, humane protection (Chen *et al.*, 2022). Such actions form the empirical bedrock of the brand's authenticity. (3) stewardship as universal value. The conviction that serving the YFP's welfare serves the higher-order good of ecosystem health, consistent with Kantian moral philosophy's emphasis on intrinsic duty over external incentive (Kant, 2017). (4) equality as interaction principle. Working from the premise of equal worth between human and non-human life, this principle shapes the brand's distinctive voice as respectful and invitational rather than didactic.

#### *4.2 Institutional layer: the brand's governance system*

This layer translates spiritual purpose into formal and informal rules that ensure consistent organizational action. A clear, non-negotiable brand mandate—such as “every branded product must demonstrably serve public YFP awareness and conservation”—forms the backbone. Drawing on lean management principles (Liker *et al.*, 2008), the governance system includes: (1) standardized operating protocols for all partner enterprises using the YFP intellectual property, ensuring quality and ethical consistency; (2) a mechanism for continuous improvement through data analysis and field feedback; and (3) an integrated impact measurement framework that tracks both communicative reach and conservation outcomes, ensuring full transparency in how brand-generated income is redirected to ecological goals.

#### *4.3 Behavioural layer: the brand's observable practices*

This layer encompasses the lived enactment of the brand through observable stakeholder behaviours. These include: (1) ecological protection behaviours—enforcement against illegal fishing and habitat destruction, scientific monitoring of YFP populations using technologies such as DNA tracing (Chen *et al.*, 2022), and community-based habitat conservation networks; (2) cultural innovation activities—the organization of YFP-themed festivals, photography exhibitions, and art salons that present the YFP's cultural depth through diverse formats and foster interdisciplinary exchange; and (3) educational outreach—the systematic transformation of research findings into public lectures, school curricula, and volunteer training programs that enhance ecological literacy and social responsibility. The behavioural layer is where internal values are subjected to public verification: the authenticity and consistency of these behaviours directly determine the brand's trustworthiness.

#### *4.4 Material layer: the brand's tangible touchpoints*

This layer translates invisible cultural values into tactile presence through physical and digital assets. It governs three primary domains: (1) cultural creative products—the development of YFP-themed merchandise (dolls, daily goods, handicrafts) that integrate ecological messaging into everyday life; (2) public facility design—the construction of riverside viewing platforms, eco-parks, and interpretive centres that enable direct public engagement with YFP habitats; and (3) themed precincts—the planning and development of comprehensive YFP cultural landmarks that combine ecology, education, and tourism, serving as regional signature destinations. Material culture must fulfil a double function: it communicates the brand's aesthetic-ethical message while its revenue feeds back into the conservation loop.

#### *4.5 Image layer: the brand's public face and narrative*

As the outermost, most synthesized layer, image culture is the composite signal received by the public. It integrates four sub-dimensions: (1) Natural Image—the YFP presented in its authentic ecological context through high-definition media, documentaries, and scientific photography that communicate its biological value; (2) Humanistic Image—

stories of steward-heroes, including scientists, volunteers, and local residents, whose dedication embodies the brand's core values and inspires public empathy; (3) Symbolic Image—unified, recognizable IP systems and visual design standards applied consistently across all media, products, and platforms; and (4) Media Image—the brand's strategic communication through both digital channels (social media platforms) and traditional media, designed to convert information recipients into active community participants.

This five-layer model maps the complete path from inner conviction to public perception. Skirting the inner layers leaves a brand hollow and opportunistic; failing to project outward leaves it invisible. By moving systematically from a clarified spiritual core through institutionalized governance, authentic behavioural practices, and thoughtfully designed material touchpoints to a unified public image, the YFP cultural brand can develop as a coherent, trustworthy, and enduring entity grounded in both ecological integrity and cultural vitality.

## 5. Brand developing of YFP culture

The YFP cultural brand aligns with China's modernization goal of "harmonious human-nature coexistence." Drawing on Kotler's definition of brand as a multidimensional identifier that creates meaning through the interplay of functional, emotional, and symbolic values (Keller *et al.*, 2010), YFP branding leverages the A-T-P-C cultural gene framework and the five-layer structural model to construct a distinctive, coherent, and sustainable brand system.

### 5.1 Brand positioning: defining the YFP's distinctive market space

Brand positioning establishes the unique space the YFP brand occupies in public consciousness. Grounded in the A-T-P-C framework, positioning proceeds along four interconnected pillars: (1) Differentiated Positioning through Cultural Genes. The YFP brand's distinctiveness derives directly from its four cultural dimensions: Aesthetic Rationality positions the YFP as the "Smiling Elf," a universal symbol of ecological harmony that differentiates the brand from all other species icons; Practical Rationality positions the brand as a pioneer of the "protecting through culture" eco-economic model, wherein cultural products directly fund conservation; Theoretical Rationality positions the brand as a moral exemplar of altruistic stewardship, consistent with Kantian ethics (Kant, 2017); and Communicative Rationality positions the brand as an open platform for participatory engagement rather than a top-down messaging system. (2) Emotional Positioning through Place-Based Narratives. The brand taps into the lived historical bonds between Yangtze riparian communities and the YFP. Specific emotional anchoring points include: the experience of sighting porpoises against the backdrop of Nanjing's contemporary skyline, conveying coexistence between urban life and wild nature; and the documented dedication of local volunteer protection associations, which personalizes conservation as a community inheritance rather than an abstract policy objective. (3) Sustainable Positioning through Value Circulation. The brand explicitly commits to a "protect the YFP with the YFP" circular model. Unlike brands that treat sustainability as a secondary attribute, the YFP brand makes the feedback loop between cultural consumption and ecological protection its defining value proposition, ensuring that growth in brand recognition translates directly into growth in conservation resources. (4) International Positioning through Technological and Cultural Diplomacy. The brand projects the YFP as China's eco-cultural ambassador by showcasing domestically developed conservation technologies—such as Yangzhou University's non-invasive DNA tracing system (Chen *et al.*, 2022)—alongside the universal appeal of the YFP's "smile" as a cross-cultural communication symbol.

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### 5.2 Brand shaping: building a coherent identity system

Brand shaping translates positioning into a unified, recognizable identity through two mutually reinforcing components: (1) Visual Identity System. The visual system encodes the brand's Aesthetic Rationality. Core design specifications include: a logo merging the YFP's streamlined body contour, its distinctive "smiling" facial morphology, and stylized Yangtze River wave motifs; a standardized colour palette of Yangtze blue (primary), porpoise grey (secondary), and white (accent) applied consistently across all products, packaging, and promotional materials; and a comprehensive IP family—including character designs such as "Tunxiaobao" and "Tunbao"—with detailed usage guidelines for partner enterprises. (2) Brand Story Architecture. The narrative system gives voice to the brand's Theoretical, Practical, and Communicative Rationalities. A structured story bank includes: origin stories documenting the ecological crisis that necessitated protection and the institutional response through the Yangtze River Protection Law and the ten-year fishing ban (Liu, 2023); stewardship stories profiling researchers and volunteers whose dedication exemplifies the altruistic spirit at the brand's core; and encounter stories capturing authentic moments of human-YFP interaction that make coexistence tangible and emotionally compelling. These narratives are calibrated for different platforms: documentary-length versions for educational and institutional settings, short-form adaptations for social media, and immersive interpretations for physical brand spaces.

### 5.3 Brand communication: orchestrating multi-channel dissemination

Brand communication operationalizes Communicative Rationality by designing pathways that move audiences from passive exposure to active participation. The communication strategy is organized around three core messages—"ecological guardian," "cultural inheritor," and "harmony advocate"—deployed through a tripartite structure: (1) Government-Led Channels. Official platforms organize high-credibility touchpoints including YFP Culture Awareness Days, ecological civilization forums, and policy advocacy campaigns that embed the brand within national sustainability narratives. (2) Corporate Engagement Channels. Partner enterprises integrate YFP themes into products and services—ranging from eco-friendly merchandise to YFP-themed retail spaces—and co-sponsor visible conservation projects, linking commercial presence to demonstrable public benefit. (3) Public Participation Channels. Community mobilization occurs through volunteer networks, citizen-science observation programs, and social media campaigns on platforms including Weibo and TikTok. The strategic goal is online-offline synergy: digital content drives footfall to physical brand spaces, while on-site experiences generate user-created content that amplifies digital reach.

### 5.4 Brand extension, maintenance, and innovation: ensuring long-term vitality

The remaining three brand functions—extension, maintenance, and innovation—form an integrated system for sustaining brand relevance over time. (1) Brand Extension. The brand's influence is broadened through structured sub-brand development and cross-sector partnerships. Sub-brands include YFP Eco-Tours, cultural creative workshops, and themed culinary and film properties, each maintaining a visible link to the core brand's conservation mission. Cross-industry collaborations with NGOs, research institutes, and tourism operators apply lean management principles to ensure operational efficiency without diluting core values (Liker *et al.*, 2008). (2) Brand Maintenance. Brand integrity is preserved through three mechanisms: self-maintenance, which involves periodic review and refinement of the brand's alignment with the A-T-P-C framework; operational maintenance, which uses consumer feedback, market trend analysis, and technology integration (e.g. VR/AR interpretive experiences) to optimize brand delivery; and legal maintenance, comprising trademark registration, copyright protection, and anti-counterfeiting enforcement to safeguard intellectual property. (3) Brand Innovation. Brand vitality is renewed through content innovation (YFP-themed animation, interactive games, and literary works), technological

innovation (immersive VR/AR storytelling and AI-driven personalized interpretation), channel innovation (influencer collaborations and short-video platform strategies), and cross-border innovation (partnerships spanning environmental protection, formal education, and cultural tourism sectors).

5.5 Integration: linking brand activities to the A-T-P-C framework and five-layer model

Table 1 synthesizes the preceding discussion by mapping each brand function to the specific cultural gene dimensions and structural model layers it most directly activates, demonstrating how the theoretical framework generates differentiated, non-generic brand strategies.

As Table 1 demonstrates, each brand function is not merely a generic marketing activity but a specific operationalization of the YFP’s unique cultural gene dimensions. For example, brand positioning does not rely on conventional differentiation criteria (price, quality, convenience) but on the ecological-moral identity derived from the A-T-P-C tetrad; brand shaping does not produce a generic mascot but a systematically encoded visual-narrative system grounded in the YFP’s authentic biological and cultural attributes; and brand communication does not pursue reach for its own sake but activates Communicative Rationality by designing audience journeys from exposure to participation. This tight coupling between theoretical framework and practical strategy constitutes the distinctive contribution of the present study.

The YFP cultural brand, rooted in the coherence between its genetic-structural foundation and its operational strategies, exemplifies China’s commitment to ecological civilization. By integrating positioning, shaping, communication, extension, maintenance, and innovation

**Table 1.** Integration of brand activities with cultural gene and structural models

Brand function	Primary cultural Gene(s) activated	Primary structural Layer(s) addressed	YFP-specific differentiation strategy
Positioning	A, T, P, C (all four)	Spiritual Layer	Smiling Elf ecological harmony positioning; “protect the YFP with the YFP” circular value proposition; Kantian moral exemplar identity; participatory platform rather than top-down messaging
Shaping	A (visual identity); T, P, C (story architecture)	Image Layer, Material Layer	Logo encoding smile morphology + Yangtze wave motifs; structured story bank with origin/ stewardship/encounter narrative categories calibrated for multi-platform deployment
Communication	C (primary); A (emotional appeal)	Behavioural Layer, Image Layer	Government-corporate-public tripartite channel structure; online-offline synergy designed to convert passive viewers into active participants; citizen-science integration
Extension	P (primary); C (cross-sector)	Material Layer, Institutional Layer	Sub-brands (eco-tours, workshops, themed F&B) with visible conservation-funding linkage; lean-managed cross-sector partnerships
Maintenance	T (value consistency); P (operational)	Institutional Layer	A-T-P-C alignment audits; VR/AR technology integration; IP legal protection framework
Innovation	A (creative freedom); C (new channels)	Image Layer, Behavioural Layer	YFP animation/gaming/literature content development; AI-driven personalized interpretation; cross-border partnerships (environmental, educational, tourism)

**Note(s):** A (Aesthetic Rationality), T (Theoretical Rationality), P (Practical Rationality), C (Communicative Rationality)

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within a unified theoretical architecture, this brand system fosters a symbiotic human-nature relationship while enhancing both cultural resilience and economic sustainability.

## 6. Conclusions and implications

Against the backdrop of growing attention to Yangtze River ecological and cultural preservation, the Yangtze finless porpoise (YFP) has emerged as an iconic species embodying both ecological significance and profound cultural value. This study addresses the critical challenge of systematically excavating YFP's intrinsic cultural value to build a differentiated and sustainable cultural brand. Drawing on cultural gene theory as an analogical framework and integrating Chinese and Western philosophical traditions, we have constructed an integrated "dimension-model-brand" theoretical architecture for YFP culture.

### 6.1 *The A-T-P-C cultural dimension framework*

The decoding of YFP culture centres on identifying four foundational cultural dimensions—Aesthetic, Theoretical, Practical, and Communicative rationalities—that together constitute a complete value-generation loop. Aesthetic Rationality (A) captures the YFP's capacity to evoke immediate emotional resonance through its distinctive "smile," functioning as the affective gateway for all subsequent cultural engagement and directly governing the brand's visual identity and IP development. Theoretical Rationality (T) anchors the brand in a non-negotiable public-welfare orientation, ensuring that conservation commitments and scientific integrity remain insulated from commercial pressures. Practical Rationality (P) translates aesthetic affection and ethical commitment into sustainable operations through a closed-loop system wherein YFP-themed economic activities directly fund conservation efforts—operationalizing the principle of "protecting the YFP with the YFP." Communicative Rationality (C) constructs multi-stakeholder interaction platforms that transform passive audiences into active participants in the brand's co-construction. These four dimensions do not operate in linear sequence but form a dynamic, self-reinforcing cycle: aesthetic appeal opens receptivity, practical operations generate sustainable resources, theoretical commitment maintains purpose, and communicative networks sustain vitality.

### 6.2 *The five-layer cultural structural model*

Building on the A-T-P-C framework, the five-layer cultural structural model organizes these abstract dimensions into a concrete, manageable brand architecture, proceeding outward from deeply embedded values to publicly visible representations. The Spiritual Layer constitutes the brand's purpose core, encapsulating freedom as the signature motif, practice as originary duty, stewardship as universal value, and equality as the guiding interaction principle. The Institutional Layer translates this purpose into governance systems, including standardized operating protocols for IP partners and transparent impact measurement frameworks. The Behavioural Layer enacts the brand through observable stakeholder practices—ecological protection, cultural innovation activities, and educational outreach—where internal values are subjected to public verification. The Material Layer renders invisible culture into tangible touchpoints through creative products, public facilities, and themed precincts that serve the dual function of communicating the brand's message while generating revenue for conservation. The Image Layer, as the outermost synthesis, integrates natural, humanistic, symbolic, and media sub-dimensions to project a coherent public face. This model maps the complete path from inner conviction to public perception, ensuring the brand develops as a coherent, trustworthy entity rather than a fragmented set of promotional campaigns.

### 6.3 *Integrated brand-building strategy*

Brand construction leverages insights from both the dimensional framework and structural model to forge a distinctive and sustainable cultural identity. Brand positioning is anchored in

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the four A-T-P-C dimensions, establishing the YFP as “Smiling Elf” ecological ambassador, pioneer of the “protecting through culture” model, moral exemplar of altruistic stewardship, and open participatory platform. Brand shaping encodes Aesthetic Rationality into a systematic visual identity and Theoretical-Practical-Communicative rationalities into a structured narrative architecture spanning origin, stewardship, and encounter stories calibrated for multi-platform deployment. Brand communication operationalizes Communicative Rationality through a tripartite channel structure—government, corporate, and public—designed to convert passive exposure into active participation via online-offline synergy. Brand extension, maintenance, and innovation form an integrated system for sustaining long-term vitality: extension diversifies brand influence through sub-brands with visible conservation-funding linkages; maintenance preserves integrity through A-T-P-C alignment audits, technology integration, and legal IP protection; and innovation renews relevance through content development, channel expansion, and cross-sector partnerships.

#### 6.4 *The “protect the YFP with the YFP” sustainable cycle*

The proposed “Protect the YFP with the YFP” strategy establishes a self-sustaining ecological-cultural-economic cycle. By developing YFP-themed industries grounded in the A-T-P-C framework and structured through the five-layer model, cultural value is monetized to fund conservation while embedded ecological messaging simultaneously raises public awareness. This model generates synergistic ecological and economic benefits, creating a virtuous feedback loop wherein cultural brand development directly enables species protection, and enhanced ecological outcomes in turn enrich the brand’s authenticity and appeal.

#### 6.5 *Theoretical and practical contributions*

The contributions of this study are threefold. First, it advances cultural gene theory by demonstrating its productive application to species-centred cultural analysis, moving beyond metaphorical assertion to operationalized dimensions with specific indicators. Second, it provides a replicable structural model for organizing the cultural systems that form around flagship species, bridging the gap between abstract cultural values and concrete brand management. Third, it establishes “cultural branding” as a viable paradigm for endangered species conservation, demonstrating how public engagement mobilized through cultural identity can secure sustainable conservation resources.

#### 6.6 *Limitations and future research directions*

Several limitations of this study point toward productive avenues for future research. The A-T-P-C framework, while analytically powerful as an integrative lens, remains interpretive in nature; future work should develop quantitative indicators and empirical validation methods to test the framework’s explanatory power across diverse cultural contexts. The five-layer structural model, though comprehensive, has been constructed primarily through theoretical deduction; case studies of specific YFP branding projects would provide valuable empirical grounding and refinement. Additionally, the dynamic interactions among the four cultural dimensions warrant further investigation, particularly how shifts in one dimension (e.g. commercial expansion under Practical Rationality) affect the integrity of others (e.g. public-welfare orientation under Theoretical Rationality). Finally, the framework’s applicability to other flagship species and cultural contexts should be explored to assess its generalizability beyond the YFP case.

## References

Aaker, D.A. (1996), *Building Strong Brands*, Free Press.

- Blackmore, S. (1999), *The Meme Machine*, Oxford University Press.
- Bowen-Jones, E. and Entwistle, A. (2002), "Identifying appropriate flagship species: the importance of culture and local contexts", *Oryx*, Vol. 36 No. 2, pp. 189-195, doi: [10.1017/S0030605302000261](https://doi.org/10.1017/S0030605302000261).
- Boyd, R. and Richerson, P.J. (2005), *The Origin and Evolution of Cultures*, Oxford University Press.
- Chen, X., Wu, X. and Liu, X. (2022), "Yangzhou University's 'Youjian Yangtze River Porpoise' student team: let the 'giant panda in the water' dance freely [EB/OL]", available at: [http://js.news.cn/2022-05/06/c\\_1128626290.htm](http://js.news.cn/2022-05/06/c_1128626290.htm) (accessed 3 November 2024).
- China Enterprise Observer (2025), "Sinopec's first cultural tourism IP-themed station unveiled in Wuhan", available at: <https://cneo.com.cn/detail88799.html> (accessed 1 May 2026).
- Daniel, V. (2016), "The significance of values: heritage value typologies re-examined", *The Historic Environment: Policy and Practice*, Vol. 7 No. 2, pp. 169-194.
- Dawkins, R. (1976), *The Selfish Gene*, Oxford University Press.
- Distin, K. (2005), *The Selfish Meme: A Critical Reappraisal*, Cambridge University Press.
- Feng, Y. (2014), *The New Origin of Human*, Beijing Publishing House, Beijing, (in Chinese).
- Garibaldi, A. and Turner, N. (2004), "Cultural keystone species: implications for ecological conservation and restoration", *Ecology and Society*, Vol. 9 No. 3, p. 1, doi: [10.5751/es-00669-090301](https://doi.org/10.5751/es-00669-090301).
- Gavin, M.C., McCarter, J., Mead, A., Berkes, F., Stepp, J.R., Peterson, D. and Tang, R. (2015), "Defining biocultural approaches to conservation", *Trends in Ecology and Evolution*, Vol. 30 No. 3, pp. 140-145, doi: [10.1016/j.tree.2014.12.005](https://doi.org/10.1016/j.tree.2014.12.005).
- Geertz, C. (1973), *The Interpretation of Cultures*, Basic Books.
- Graves, R.A., Pearson, S.M. and Turner, M.G. (2017), "Species richness alone does not predict cultural ecosystem service value", *Proceedings of the National Academy of Sciences*, Vol. 114 No. 14, pp. 3740-3745, doi: [10.1073/pnas.1701370114](https://doi.org/10.1073/pnas.1701370114).
- Guo, T.T. (2026), "Digital empowerment of 'finless porpoise returning to the River City': from 'rarely seen' to 'encountered anytime'", *People's Daily Online*, Hubei Channel, available at: <http://hb.people.com.cn/BIG5/n2/2026/0424/c194063-41561688.html> (accessed 1 May 2026).
- Habermas, J. (1984), "The theory of communicative action", in *Reason and the Rationalization of Society*, Beacon Press, Vol. 1.
- Habermas, J. (1992), *Postmetaphysical Thinking: Philosophical Essays*, MIT Press.
- Han, C., Yuan, H. and Kim, Y. (2026), "From diversified development to sustainable destination management: mechanisms integrating tourist psychological identity and cultural tourism sustainability", *Sustainability*, Vol. 18 No. 1, p. 473, doi: [10.3390/su18010473](https://doi.org/10.3390/su18010473).
- Hargrove, E.C. (1989), *Foundations of Environmental Ethics*, Vol. 16, Prentice Hall, Englewood Cliffs, NJ.
- Hubei Civilization Network (2025), "Wuhan child-friendly city IP image released", available at: <http://119.36.213.67/c/2025/06/69811.shtml> (accessed 1 May 2026).
- Jepson, P. and Barua, M. (2015), "A theory of flagship species action", *Conservation and Society*, Vol. 13 No. 1, pp. 95-104, doi: [10.4103/0972-4923.161228](https://doi.org/10.4103/0972-4923.161228).
- Jian, Y., Zhou, Z. and Zhou, N. (2019), "Brand cultural symbolism, brand authenticity, and consumer well-being: the moderating role of cultural involvement", *The Journal of Product and Brand Management*, Vol. 28 No. 4, pp. 508-523, doi: [10.1108/jpbm-08-2018-1981](https://doi.org/10.1108/jpbm-08-2018-1981).
- Jiangdu District People's Government (2026), "Finless porpoise protection gains new ground", available at: [https://jd.yangzhou.gov.cn/xwzx/zwdt/art/2026/art\\_f3545a67d30949db9e89ce17210d3eb0.html](https://jd.yangzhou.gov.cn/xwzx/zwdt/art/2026/art_f3545a67d30949db9e89ce17210d3eb0.html) (accessed 2 May 2026).
- Kant, I. (2017), *Kant: The Metaphysics of Morals*, Cambridge University Press.
- Kapferer, J.-N. (2012), *The New Strategic Brand Management*, 5th ed., Kogan Page.

- Keller, K.L. (1993), "Conceptualizing, measuring, and managing customer-based brand equity", *Journal of Marketing*, Vol. 57 No. 1, pp. 1-22, doi: [10.1177/002224299305700101](https://doi.org/10.1177/002224299305700101).
- Keller, K.L. (2008), *Strategic Brand Management: Building, Measuring, and Managing Brand Equity*, 3rd ed., Pearson.
- Keller, K.L., Apéria, T. and Georgson, M. (2010), *Strategic Brand Management: A European Perspective*, Financial Times Prentice Hall.
- Li, Y. and Wu, F. (2021), *Cultural Gene Decoding: Principles and Methods*, Zhejiang University Press, Hangzhou, (in Chinese).
- Li, Z., Shu, S., Shao, J., Booth, E. and Morrison, A.M. (2021), "Innovative or not? The effects of consumer perceived value on purchase intentions for the Palace Museum's cultural and creative products", *Sustainability*, Vol. 13 No. 4, p. 2412, doi: [10.3390/su13042412](https://doi.org/10.3390/su13042412).
- Liker, J.K. and Hoseus, M. and Centre for Quality People and Organizations (2008), *Toyota Culture*, McGraw-Hill Publishing, New York.
- Liu, H. (2023), "It's a Yangtze River porpoise! The 'smiling angel' is back", *Shanghai Law Journal*, 2023-06-06(A02).
- Lumsden, C.J. and Wilson, E.O. (1981), *Genes, Mind, and Culture: The Coevolutionary Process*, Harvard University Press.
- Melnikovas, A. (2018), "Towards an explicit research methodology: adapting research onion model for futures studies", *Journal of Futures Studies*, Vol. 23 No. 2, pp. 29-44.
- Miranda, J.J. and Fernandez-Valera, M.M. (2025), "Schein's cultural model today: an integrative review (2020-2025)", *Barataria: Revista Castellano-Manchega de Ciencias Sociales*, Vol. 38, p. 736.
- Modern Express (2025), "Nanjing finless porpoise city park upgraded, scientific whale watching platform established... 2025 Yangtze finless porpoise protection day sends multiple protection signals", *Chutian Metropolis Daily*, available at: [http://ctdsb.net/c1716\\_202510/2575007.html](http://ctdsb.net/c1716_202510/2575007.html) (accessed 1 May 2026).
- Nanjing Public Transportation Group (2025), "Finless porpoise cultural creative space 'Intersection' stunningly unveiled at Zhongshan Wharf! Bus memory + cycling station creates new urban cultural experience", available at: <https://www.njgongjiao.com/fgs22/8760> (accessed 1 May 2026).
- Nantong Daily (2025), *Nantong Offers More IP Image-Related Products to Cheer for Jiangsu Football City League*, Nantong Municipal Government, available at: [http://en.nantong.gov.cn/netda/2025-06/17/c\\_1102079.htm](http://en.nantong.gov.cn/netda/2025-06/17/c_1102079.htm) (accessed 2 May 2026).
- Nobre, H. and Sousa, A. (2022), "Cultural heritage and nation branding – multi stakeholder perspectives from Portugal", *Journal of Tourism and Cultural Change*, Vol. 20 No. 5, pp. 537-553, doi: [10.1080/14766825.2021.2025383](https://doi.org/10.1080/14766825.2021.2025383).
- Poe, M.R., Norman, K.C. and Levin, P.S. (2014), "Cultural dimensions of socioecological systems: key connections and guiding principles for conservation in coastal environments", *Conservation Letters*, Vol. 7 No. 3, pp. 166-175, doi: [10.1111/conl.12068](https://doi.org/10.1111/conl.12068).
- Radosavljevic, U. and Kuletin-Culafic, I. (2019), "Use of cultural heritage for place branding in educational projects: the case of Smederevo and Golubac Fortresses on the Danube", *Sustainability*, Vol. 11 No. 19, p. 5234, doi: [10.3390/su11195234](https://doi.org/10.3390/su11195234).
- Rahman, M.S., Fattah, F.A.M.A., Hussain, B. and Hossain, M.A. (2021), "An integrative model of consumer-based heritage destination brand equity", *Tourism Review*, Vol. 76 No. 2, pp. 258-276.
- Santarem, F., Pereira, P., Saarinen, J. and Brito, J.C. (2018), "New method to identify and map flagship fleets for promoting conservation and ecotourism", *Biological Conservation*, Vol. 229, pp. 113-124, doi: [10.1016/j.biocon.2018.10.017](https://doi.org/10.1016/j.biocon.2018.10.017).
- Schein, E.H. (2010), *Organizational Culture and Leadership*, 4th ed., Jossey-Bass.
- Thomas-Walters, L. and Raihani, N.J. (2017), "Supporting conservation: the roles of flagship species and identifiable victims", *Conservation Letters*, Vol. 10 No. 5, pp. 580-587.

- 
- Verissimo, D., MacMillan, D.C. and Smith, R.J. (2010), "Toward a systematic approach for identifying conservation flagships", *Conservation Letters*, Vol. 4 No. 1, pp. 1-8, doi: [10.1111/j.1755-263x.2010.00151.x](https://doi.org/10.1111/j.1755-263x.2010.00151.x).
- Whiten, A. (2017), "A second inheritance system: the extension of biology through culture", *Interface Focus*, Vol. 7 No. 5, 20160142, doi: [10.1098/rsfs.2016.0142](https://doi.org/10.1098/rsfs.2016.0142).
- Wu, X.Y. (2025), "Lan Ruoruo' IP image shortlisted", *Nantong Daily*, available at: [http://www.zgnt.net/ntrbszb/pc/c/202506/23/content\\_211966.html](http://www.zgnt.net/ntrbszb/pc/c/202506/23/content_211966.html) (accessed 2 May 2026).
- Wuhan Municipal People's Government (2024), "Wuhan opens 'finless porpoise live broadcast', nationwide netizens can watch", available at: [https://www.wuhan.gov.cn/sy/whyw/202406/t20240621\\_2418778.shtml](https://www.wuhan.gov.cn/sy/whyw/202406/t20240621_2418778.shtml) (accessed 2 May 2026).
- Wuhan Yangtze Daily (2025), "China-Europe smile relay launched in Paris, finless porpoise 'Tun Bao' invites global tourists to visit the Yangtze River", *Changjiang Cloud*, available at: <http://3g.cjn.cn/Detail/?id=5071286&typeid=0> (accessed 2 May 2026).

**Corresponding author**

Zhisong Chen can be contacted at: [zhisongchen@njnu.edu.cn](mailto:zhisongchen@njnu.edu.cn)