

CULTURAL HERITAGE AND INNOVATION OF SHANGHAI SUZHOU CREEK BASED ON SEMIOTICS AND NARRATIVE DESIGN

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ABSTRACT

This study examines the cultural landscape along Shanghai's Suzhou Creek as its research object and integrates Peircean semiotic theory with Morris's triadic model of semiotics, while introducing narrative design as a methodological approach to construct an integrated design framework based on the sequence of "symbol extraction - classification - screening - thematic construction - generation of narrative scenarios". Through literature review, field investigation, in-depth interviews, and focus group discussions, both the tangible and intangible cultural resources of the Suzhou Creek area are systematically examined. Cultural symbols are analyzed and clustered from the perspectives of syntactics, semantics, and pragmatics, leading to the formulation of four narrative themes: "Echoes of War and Memory", "The Golden Age of Industry", "Haipai Modernity and Elegance", and "Transformation and Symbiosis." Furthermore, the study translates complex regional culture into perceptible and communicable narrative content in the form of virtual characters, events, scenarios, and product scripts, thereby providing structured content support for the design of cultural souvenirs. Based on the narrative themes, cultural souvenir prototypes were designed and subsequently evaluated through a Delphi expert review process. The findings suggest that the proposed framework contributes to addressing the fragmentation of regional cultural symbols and offers a potential design research pathway for the contemporary expression and innovative inheritance of Suzhou Creek culture.

Keywords: Cultural Heritage, Semiotics, Narrative Design, Integrated Design Framework

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INTRODUCTION

Rivers are widely regarded as the lifelines of cities and the cradle of urban civilization and cultural development (Peng, 2022). Suzhou Creek, also known as the Wusong River, is one of the most historically and culturally significant areas in Shanghai. Having witnessed more than a century of urban transformation, it embodies abundant historical memories and profound cultural connotations (Cui, 2019), and is therefore often referred to as the “Mother River” of Shanghai. After over a hundred years of development and change, the riverbanks of Suzhou Creek have accumulated a wealth of tangible and intangible cultural heritage. For instance, during the period when Shanghai was opened as a treaty port, Suzhou Creek served as an important harbor where Chinese and Western cultures converged, giving rise to numerous historic buildings characterized by cultural hybridity (Huang, 2008). It is also recognized as one of the birthplaces of modern industrial civilization in China, where many influential enterprises emerged, and where early Chinese practices in product design and packaging design were developed (Xu, et al., 2022). In addition, the area preserves rich historical narratives related to the War of Resistance against Japanese Aggression, shipping culture, and other socio-cultural phenomena.

However, with the acceleration of globalization and urbanization, while cultural exchange and integration have been promoted, local cultural characteristics have also been diluted, leading to cultural homogenization in some contexts (Cheng & Zeng, 2023). In particular, younger generations are increasingly neglecting the symbolic forms and intrinsic meanings of local culture, which has gradually undermined the transmission and continuity of regional cultural heritage.

Within the field of cultural studies, semiotics and narrative design are among the most frequently employed theoretical frameworks, providing methodological support for the extraction and translation of cultural elements. Given the particularity of Suzhou Creek culture - its extensive scope, diversity of cultural elements, and the shifting meanings conveyed across different historical periods - this study integrates semiotics and narrative design to extract representative cultural symbols and narrative scenarios in the form of “time slices,” thereby constructing multiple narrative themes. These themes offer substantive content support for the subsequent innovative application of cultural elements in design practice.

RESEARCH OBJECTIVES

- 1) To investigate the tangible and intangible culture elements around the Suzhou Creek riverbank in order to identify and extract significant cultural symbols.
- 2) To construct an integrated design framework for Suzhou Creek cultural inheritance and innovation by combining semiotics and narrative design.
- 3) To design a series of cultural souvenirs prototypes based on the Suzhou Creek cultural symbols and to test and evaluate effectiveness of the design framework.

LITERATURE REVIEWS

Background Study of Suzhou Creek

Suzhou Creek is widely recognized as the “Mother River” of Shanghai, and its development and transformation are deeply embedded in the historical and cultural trajectory of the city.

1) Ancient History of Suzhou Creek (before 1843)

Historically known as the Wusong River, Suzhou Creek functioned as the principal channel connecting Lake Taihu to the sea and served as a vital inland waterway. During the Tang Dynasty, the river reached a width of nearly twenty li. In the Song Dynasty, Qinglong Town once flourished and was acclaimed as the “Little Hangzhou,” forming the embryonic stage of the Shanghai port. Subsequently, due to hydrological changes and sedimentation, the river gradually contracted. In the Ming Dynasty, the downstream course of the Wusong River was

redirected into the Huangpu River, eventually evolving into a tributary (Shanghai Institute of Urban Planning and Design, 2025).

2) Modern History of Suzhou Creek (1843–1949)

Following the opening of Shanghai as a treaty port in 1843, Suzhou Creek became the cradle of China's national industries, with flour, textile, and chemical factories successively established along its banks. However, from the 1920s onward, industrial discharge and domestic sewage led to severe deterioration in water quality. During the War of Resistance against Japanese Aggression, epitomized by the Defense of the Sihang Warehouse, Suzhou Creek bore witness to the Chinese nation's spirit of resistance and the formation of red cultural memory (Shanghai Institute of Urban Planning and Design, 2025).

3) Contemporary History of Suzhou Creek (1949-present)

After the founding of the People's Republic of China, Suzhou Creek underwent a phase of industrial recovery, accompanied by increasingly prominent pollution problems. With the implementation of the reform and opening-up policy, industrial activities were gradually relocated, and comprehensive river refine projects were initiated, leading to progressive improvement in water quality. Since the 1990s, through integrated environmental remediation, ecological restoration, and urban regeneration, Suzhou Creek has been transformed into a riverfront heritage corridor and has become a significant space for tourism, leisure, and creative industries (Shanghai Institute of Urban Planning and Design, 2018).

Suzhou Creek thus constitutes a historical witness to Shanghai's urban development: its shipping and commerce facilitated early economic growth; it functioned as a conduit for the integration of northern and southern cultures, fostering the distinctive Haipai culture; it symbolizes the emergence of China's modern industry; and it epitomizes the environmental challenges and ecological governance associated with industrialization. Given the extensive temporal and spatial scope and the multifaceted nature of Suzhou Creek culture, this study employs semiotic theory to analyze, interpret, cluster, and screen cultural elements, thereby providing methodological guidance and reference for their subsequent innovative application in design.



Figure 1 Distribution of Representative Historical Heritage Sites along the Suzhou Creek

A Review of Semiotic Theory and Its Applications

Semiotics, as a discipline that systematically investigates signs and the principles governing their use, encompasses multiple dimensions, including the elucidation of the nature of signs, the mechanisms of meaning production, the trajectories of their historical development, and the interactive relationships between sign systems and human social practices (Barthes, 2008). As a fundamental component of human civilization, signs possess dual functions of information storage and emotional expression (Dingbang, 2016). As a foundational field of study, semiotics not only offers novel theoretical perspectives and analytical tools for related research, but also continuously promotes innovation in the humanities and social sciences through its interdisciplinary influence. Key figures in the historical development of semiotics include Ferdinand de Saussure, Charles Sanders Peirce, Charles W. Morris, and Roland Barthes.

Peirce categorized signs into three basic types: icons, indices, and symbols. Icons establish the relationship between the sign and its object through formal resemblance, which may be either direct or indirect; indices rely on causal or existential connections to form relatively direct referential relations; and symbols construct meaning through social conventions and cultural traditions, rendering them indirect, abstract, and dependent on experience and learning. Together, these three types constitute the most explanatory foundational model within Peirce's semiotic theory, revealing the intrinsic mechanisms of sign operation. In his seminal work *Foundations of the Theory of Signs* (1938), Charles W. Morris systematically articulated the well-known "triadic division," classifying semiotics into three interrelated dimensions: syntactics, semantics, and pragmatics. These three branches form an organic whole: syntactics - The relationship between signs, pragmatics - The relationship between the sign and the user and semantics - The relationship between the sign and the object. They constitute a progressive chain of interpretation - sign forms require interpretive rules to generate meaning, interpretive rules must be grounded in specific contexts, and contextual interpretation ultimately leads to the realization of meaning. This "form–rule–meaning" interactive model not only discloses the internal logic of sign operation but has also become an important analytical tool for interdisciplinary research due to its systematic nature and explanatory power.

With regard to applications of semiotics, Pei Lingxuan (2020) employed Peirce's triadic model to analyze the dimensions of "people, culture, place, industry, and landscape" within the urban imagery of Nanjing, exploring their interrelationships and distinctions. Li Chun (2021), drawing on Morris's semiotic framework, introduced semantics, syntactics, and pragmatics into the design process and interpreted, analyzed, and disseminated Fuhai across four stages - problem discovery, problem definition, design development, and communication and promotion - thereby establishing a workflow and methodology for the design of regional cultural creative products. Zhao Wenqiang (2024) encoded the cultural elements of the Shenyang Imperial Palace based on Peircean semiotics, categorizing signs into material culture, symbolic, and spiritual culture for analytical purposes. Chen Guojing (2025), grounded in Morris's concepts of context, syntactics, and semantics, extracted and recombined traditional symbolic elements, providing rich theoretical and practical foundations for subsequent innovative design research and for the cross-disciplinary development of semiotics.

The literature review indicates that in the fields of regional culture and innovative design, many scholars adopt Peircean semiotics for the extraction of elemental signs, while Morris's theory is frequently applied to the recombination of symbols. Given the complexity and particularity of Suzhou Creek culture, which encompasses a large number of heterogeneous symbolic elements and makes selection difficult, this study integrates multiple semiotic theories to analyze, extract, classify, and synthesize cultural signs, thereby offering a methodological reference for their subsequent application in design practice.

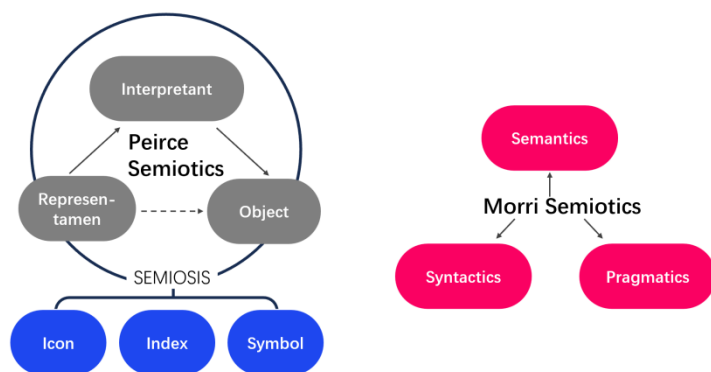


Figure 2 Semiotics Theoretical Framework

A Review of Narrative Design Theory and Its Applications

In addition to semiotics, this study incorporates narrative design theory as an analytical framework. The concept of narrative theory originated in the 1960s, with the publication of Roland Barthes's *Introduction to the Structural Analysis of Narratives*, which systematically explicated the fundamentals of narratology through a structuralist approach based on the overarching framework of “text”, “story”, and “material”, thereby laying a theoretical foundation for narrative studies (Barthes, 1989). With the rise of classical narratology in the 1990s, scholars became increasingly aware of the disjunction between traditional narrative research and socio-historical and cultural contexts. Under the influence of postmodern thought, narratology gradually transcended disciplinary boundaries and achieved cross-media integration, exhibiting diversified developmental trajectories. Against this backdrop, design disciplines progressively introduced narrative theory, giving rise to the emerging field of narrative design.

Regarding the application of narrative design, numerous scholars have conducted in-depth explorations. Yi Jun (2024) integrated archaeological findings from the Daxi Site in Chongqing with theories of emotional design to establish a narrative design model consisting of the stages of identifying narrative themes, clarifying narrative perspectives, constructing narrative plots, and communicating narrative values. Liu Mengyi (2025), drawing on theories of pictorial narrative, examined the narrative structure of the Procession of Chariots and Horses from the Chu Tomb No. 2 at Baoshan, analyzing its narrative imagery at the syntactic, semantic, and pragmatic levels and subsequently summarizing a narrative model comprising narrative plot, narrative scene, and narrative visualization. Deng Chunzhe (2025) conducted an in-depth exploration of the pictorial narrative elements of “Fu” culture, extracting design materials and narrative themes, and constructing a four-stage narrative design process including narrative theme excavation, hierarchical articulation, narrative plot design, and product design practice. By integrating semiotics with narrative design theory, this study constructs a narrative design framework grounded in semiotic analysis, thereby formulating narrative themes for the cultural inheritance of Suzhou Creek and providing a theoretical basis for subsequent design applications.

RESEARCH METHODOLOGY

This study adopts Design-Based Research (DBR) as its core research paradigm. DBR is particularly well suited to this study, as it emphasizes iterative processes that connect theoretical perspectives with real-world practice, thereby enabling the simultaneous resolution of complex problems and the generation of new knowledge. The DBR process of this research is structured into four stages:

Literature Review

Relevant cultural backgrounds of the Suzhou Creek riverfront were retrieved through thematic and keyword-based searches. The main sources included the China National Knowledge Infrastructure (CNKI), international academic databases such as Web of Science and ScienceDirect, as well as books from both domestic and international and interdisciplinary fields. The retrieved materials covered topics such as Suzhou Creek and its cultural heritage, semiotic theories and their applications, and narrative design theories and practices. By organizing and synthesizing these materials and cases, this study summarized design research methods aligned with the research objectives and explored new approaches to the innovative inheritance of regional culture.

Field Investigation

To extract cultural symbols and underlying cultural meanings along Suzhou Creek, field visits were conducted at the Archives of the Shanghai Museum, the Suzhou Creek Industrial Civilization Exhibition Hall, the Shanghai Museum, the Sihang Warehouse Memorial Hall, and other historic buildings along the Suzhou Creek riverfront. The historical development of these sites was examined, and relevant photographic and documentary materials were collected.

In-depth Interviews and Focus Groups

The in-depth interviews primarily targeted local residents, who were able to provide insights into the connotations and symbolic meanings of Suzhou Creek culture based on their lived experiences. Participants were divided into a younger group and an older group, enabling the investigation of both traditional perceptions held by older generations and contemporary understandings among younger people. The two groups consisted of ten middle-aged participants aged over 45 and ten younger participants aged between 18 and 35. Interview transcripts were coded and key terms were extracted until data saturation was reached, thereby identifying intangible symbolic elements.

Framework Construction

The extracted symbols were analyzed and interpreted through the lenses of semiotics and narrative design theory to establish the conceptual foundations for design innovation. Through an extensive literature review, Peircean semiotics and Morris's semiotic theory were systematically analyzed and synthesized. Based on the characteristics of the cultural symbols along Suzhou Creek, Peirce's typology of signs was integrated with Morris's triadic model to construct a theoretical framework for the analysis of cultural symbols along the Suzhou Creek riverfront.

Validation Analysis

The design outcomes were evaluated through an expert review process. A panel of five specialists with substantial academic credentials and professional experience in relevant fields has been invited to conduct the assessment. The panel consists of one expert in urban creative cultural development, two experts in cultural and creative product design, and two scholars specializing in cultural industry studies. The evaluation adopted the Delphi Method. Also known as the expert consultation method, the Delphi Method was originally developed and implemented in 1946 by the RAND Corporation. Its procedure involves collecting expert opinions on the research problem, followed by systematic synthesis, analysis, and statistical consolidation to reach a reliable consensus.

RESEARCH RESULTS

Integrated Design Framework

Based on Peirce's and Morris's semiotic theories, this study integrates the two frameworks to analyze representative cultural symbols of Suzhou Creek through a six-step procedure and applies the results to the construction of narrative scenarios and the design of innovative

products. Step 1, Symbol Extraction, involves identifying symbols embedded in both tangible and intangible cultural heritage. Step 2, Symbol Classification, draws on Peirce's typology to categorize symbols into icons, indices, and symbols, which correspond respectively to product form, function, and connotation. Step 3, Symbol Selection and Integration, is conducted on the basis of Morris's three dimensions - syntactics, pragmatics, and semantics - to screen, organize, and consolidate the classified symbols into those with the greatest representativeness and communicative value. Step 4 groups the selected symbols into distinct narrative themes according to their meanings. Steps 5 and 6 integrate principles of narrative design to construct narrative themes in terms of products, events, characters, and scenes, thereby providing a coherent narrative framework for subsequent design applications.

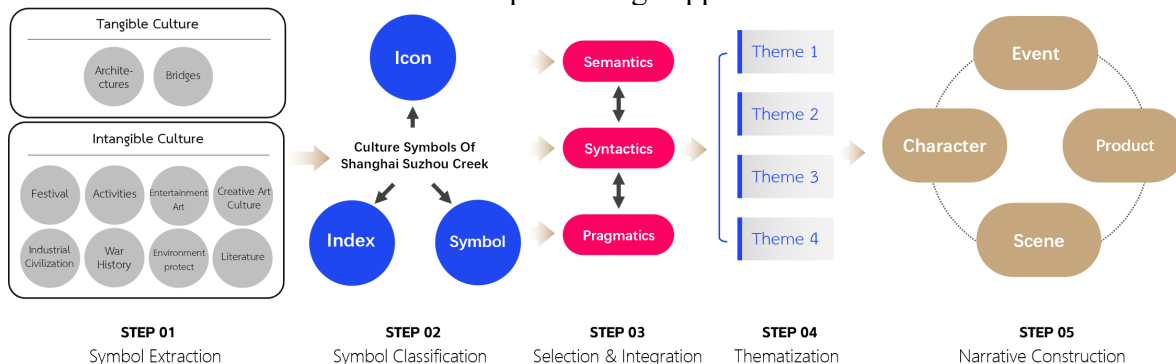


Figure 3 Integrated Design Framework for Shanghai Suzhou Creek

Symbol Extraction and Narrative Themes Construction

In this study, Suzhou Creek culture is categorized into Tangible Culture and Intangible Culture. Tangible Culture mainly includes traditional architecture, modern architecture, and bridges, while Intangible Culture encompasses festivals, events, film and television arts, creative arts culture, industrial civilization, war history, environmental protection, and literature. For Tangible Culture, 23 representative buildings and bridges were selected, and their symbols were extracted and analyzed based on Peirce's typology of signs - icons, indices, and symbols. The detailed results are presented in the Table 1.

Table 1 Tangible Culture of Suzhou Creek base on Peirce Semiotic classification

Sources of Icon Symbols	Index	Symbol
Shanghai Waterworks Co. Building	Classical revival, Wreath Decor	Modern Water Supply
Shanghai General Post Office	Baroque Bell Tower, Bronze Figures Sculpture, Corinthian Order, Green Roof, "People's Posts and Telecommunications" Inscription	Transportation Hub, The No.1 Hall in the Far East
Yanqingli	European Pediment House Number, Fan-shaped Arch, Shikumen	Golden Age of Real Estate, Historical Changes, Urban Renewal
		Urban Modernization
		Authority, Solemnity, Order, Prosperity, Modernization
		Auspiciousness, Prosperity, Fashion, Creativity, Haipai Culture

Sources of Icons	of Icon	Index	Symbol
1908 Granary	Fair-faced Red Brick, Xieshan Roof (Gable-and-Hip Roof), Industrial Style	Du Yuesheng's Granary, Bar (Beer Aunt)	Republic of China Legend, Artistic Creativity
Xin Tai Warehouse	British Industrial, East-West Fusion, Modern Glass Roof, Diverse Styles	Warehousing Function, Historical Changes, High-end Business, Fashion Culture	Diverse Fusion
Jardine Matheson Warehouse	Red Brick Fair-faced Wall, British Industrial, East-West Fusion, Xieshan Roof	Trade and Logistics, Art Space	Colonial Economy, King of the Foreign Firms
Fuxin Flour Mill No. 3	Art Deco Style, Fair-faced Brick, Glazed Grid Glass	Urban Renewal, Financial Warehouse, Art Space	Economic Prosperity
Four Sages Bank Warehouse	Damaged Walls, Bullet Holes, "Sihang Warehouse" Inscription, European/American Industrial Style	Battle of Sihang Warehouse, 800 Heroes, Financial Warehouse	Patriotism, Sturdiness, Tenacity, Heroism
Foo Sing Flour Mills	Fair-faced Red Brick, British Industrial Architecture	East-West Fusion, Saving the Nation through Industry, Flour King	Patriotism, Rise of National Industry
M50 Art Creative Park	Red and Green Bricks, Crisscrossing Pipes, Steel Structure Beams and Columns, Rusty Railings, Water Tower, Graffiti Art	Loft Aesthetics, Textile Mill, Art Cluster	City Art Card, Artist Hub
Shanghai Central Mint Building	Ionic Columns, Classical Pediment, Golden Lotus	Finance	Authority, Purity, Value
Shanghai Optical Factory No. 1	Fair-faced Brick Factory Building, Saucer-shaped Cafe, Industrial Machine Sculpture	Eyewear Manufacturing, Future Sci-Fi	Patriotism, Industrial Aesthetics
Broadway Mansion	Modern Skyscraper, Brown Mountains, Art Deco	Dignitary Reception, City Gateway	Peak of the City, Stability, Eternity, Modernization, Internationalization
British Consulate General's Office Residence	Veranda Style Architecture, British Manor	Concession Culture	Starting Point of Shanghai's Opening, Roots of Haipai Culture
Shanghai Rowing Club	Victorian Sloped Roof, Baroque Decoration, Swimming Pool	Club, Swimming, Rowing Origins, Fashionable Bar	Haipai Culture, Sportsmanship

Sources of Symbols	of Icon	Index	Symbol
Capitol Building	Art Deco, Fan-shaped Building, Tower	First Theater, Fashionable Entertainment	Golden Age of Shanghai Cinema, Modernity and Chic, Cultural Prosperity
Embankment Building	“S”-shaped Layout, Modernist Style, Art Deco Sunburst Pattern	Sassoon House, International Refugee Station, Film Industry	No.1 Apartment in the Far East, Openness and Inclusivity, Urban Modernity
Astor House	Victorian Baroque Architecture, Peacock Hall and Astor Hall, Semicircular Tower, Stained Glass	Celebrity Guests, Financial Reform, Securities Trading	Urban Legend, Economic Takeoff
Waibaidu Bridge	Steel Truss Structure	Waibaidu Bridge, City Card, Movie Bridge Jumping Scene, Shanghai Skyline, Industrial Aesthetics, Wedding Photos	Collective Memory, City Card, Nostalgia, Romance
Sichuan Road Bridge	European Three-Arch Bridge	General Post Office Bridge, Prosperous Shanghai	Patriotism, Urban Memory
Fujian Road Bridge	European Classical Arch Bridge, Baroque Decoration	Old Zhapu Bridge, History of Stone Sluice	Street Life
Tian An·1000 Trees	Floating Forest, Mount Huangshan and Hanging Gardens of Babylon	Pillars of Life, Heritage Protection, Natural Wonder	Nature and Symbiosis
Suhewan MixC World	Canyon of the Mundane World, Long-legged Boy, Elephant Parent-Child Orchestra	High-end Dining, Art and Fashion	Integration of Culture and Commerce, Haipai Spirit

Table 2 Intangible Culture of Suzhou Creek

Sources of Symbols	Culture factor	Symbol
Festivals	Jing'an Light Festival, Dragon Boat Racing	Bustling, Surreal, Poetic, Hope, Spirit of Striving, Cultural Identity
Activities	Suzhou Creek Half Marathon, Rowing Race	Elite, Order, Transformation of Industrial Civilization, High-end, Fashionable, Healthy, Vitality, Urban Renewal

Sources of Symbols	Culture factor	Symbol
Creative Art	M50 Creative Park, graffiti	Pigment, Walls, Abandoned Factories, Freedom, Creativity
Industrial Civilization	Chinese Enamel Factory, Shanghai Shenxin Textile Company, Shanghai Beer Co., Ltd., Zhongxi Pharmacy, Macao Road Printing House of Zhonghua Book Company, Huasheng Electrical Appliance Factory, Dafeng Dyeing and Weaving Factory, Shanghai Tianchu Monosodium Glutamate Factory, China Fuxin Tobacco Company, Hui Ming Torch Battery Factory, Shanghai Radio Factory No. 2	Lihe Brand Enamel Ware, Shanghai Shenxin Textile, Shanghai Beer, Huasheng Electric Fan, Dafeng Silk Fabric, Tianchu VE-TSIN, Fuxin Tobacco, Hui Ming Torch, “Hongdeng” Radio
Water Transport Culture	Cargo ships, cruise ships	Ships, Work Chants, Transportation, Sightseeing, Freight, Industrial Artery
Environmental Protection	From Ditch to Clean River	Ecological Ethics, Quality of Life, Utilization/Conquest, Symbiosis, Appreciation, Harmony
Literature	Poetry on Suzhou River · Reading in Jing’an	Suzhou River, Sihang Warehouse, History, Memory, Transformation, Egret, Butterfly, Ripples, Bridge, Happiness, Future, Concession, Bullet Marks, Neon, Day and Night, Jing’an, Modern, Nature, Urban Development
War History	West Shanghai Workers’ Half-Day School, May Thirtieth Movement, Defense of Sihang Warehouse	Defense of Sihang Warehouse, 800 Heroes, Patriotism
Entertainment Art	Deep in the Misty Rain, Blossoms Shanghai, Shanghai bund, Jiangyuanlong, Suzhou river	Waibaidu Bridge, Suzhou River, Zhejiang Road Bridge, Jumping from Bridge, Rickshaw, Romance, Love, Dealings on Suzhou River, Dirty and Messy, Misty and Blurred, Memories, Street Life, Fate, Concession, “Xiazhijiao” (Lower Corner), Shikumen, Marketplace Life, Warmth

Symbol Analysis and Construction of Narrative Themes

All extracted symbolic elements were integrated and analyzed through Morris’s triadic semiotic model, leading to the following findings.

Syntactics: focuses on the internal structures and rules of sign systems, enabling the classification of seemingly disparate symbols and the distillation of systematic logics. For instance, the diversity of architectural styles - including Classical Revival, Baroque, Gothic Revival, Art Deco, and Modernism - reflects the historical transformations and cultural hybridity along the banks of Suzhou Creek. Meanwhile, the functional transformation of buildings from former factories into cultural and creative industry hubs illustrates the cross-temporal evolution of the riverfront. Architectural details such as clock towers, pediments, arches, and ornamental motifs embody rich cultural connotations and historical information.

Semantics: addresses what signs represent and signify, namely the deeper meanings embedded within them. Symbols associated with the spirit of national enterprises, historical figures such as Eileen Chang and Du Yuesheng, and wartime memories all convey profound sentiments of patriotism and national identity. The multiplicity of architectural styles and exquisite decorative details further symbolize the former prosperity of the Suzhou Creek area, reflecting the inclusiveness of Shanghai culture toward multicultural influences. In contrast to the grandeur and splendor often associated with the Huangpu River, the symbolic imagery of Suzhou Creek tends to evoke warmth, romance, and childhood memories.

Pragmatics: examines how signs are used, interpreted, and produce effects within specific contexts, and how they influence observers psychologically and behaviorally. In terms of emotional expression, literary and poetic symbols articulate affection and nostalgia for Suzhou Creek, as well as aspirations for urban development. With regard to values, symbols embedded in historical narratives and industrial development embody patriotism, national industry, Sino-Western integration, and artistic innovation. In terms of cultural identity, symbols manifested in festivals, events, and film and television works express a strong sense of identification with and pride in Suzhou Creek culture.

After clustering, screening, and analyzing all extracted elements through the lenses of syntactics, semantics, and pragmatics, and in conjunction with the “time slices” of Suzhou Creek’s development, four narrative themes were formulated. Each theme encompasses personas, events, scenes, and related products, thereby providing script-level support for subsequent design practice. The specific themes are described as follows:

Narrative Theme 1: Echoes of War and Memory (Time Slice: 1930s-1940s)

Syntactics: The “bullet holes” on the façade of the Sihang Warehouse, together with its damaged walls, create a striking visual tension in contrast to the solid structure of the nearby Shanghai General Post Office Building.

Semantics: Symbols of “patriotism” and “heroism” are constructed in opposition to those of the “concessions” and the “colonial economy.”

Pragmatics: These signs evoke collective memory and reinforce national identity.

Persona: A hao (20 years old), the fictional younger brother of an anonymous soldier who fought in the Defense of the Sihang Warehouse.

Event: In late autumn 1937, Ahao anxiously stands guard on the southern bank of the Suzhou Creek. Across the river lies the Sihang Warehouse, known as the “Lone Battalion Barracks,” where his brother is stationed. He can clearly see the shocking bullet holes scattered across the western wall—silent testimony to the flesh-and-blood defense formed by his brother and fellow soldiers.

Scene: Ahao stands on the muddy riverbank. Behind him stretches the once-prosperous yet indifferent cityscape of the Shanghai International Settlement. Across the water, the shouts of civilians on the southern shore intertwine with the thunder of artillery from the northern side. Clutched tightly in his hand is a “Dawuwei flashlight”—his only hope of illuminating his brother’s silhouette through the darkness.

Products: Dawuwei flashlight (symbolizing unyielding light in darkness).

Narrative Theme 2: The Golden Age of Industry (Time Slice: 1930s-1980s)

Syntactics: Clusters of red and grey-brick factory buildings together form a dense vertical industrial landscape.

Semantics: Symbols of “saving the nation through industry,” the “rise of national industries,” and the “struggles of the working class.”

Pragmatics: These signs pay tribute to the entrepreneurial spirit and evoke nostalgia for the glorious industrial era.

Persona: Master Lin (45 years old), a female textile worker.

Event: On a summer night in 1980, Master Lin has just finished her night shift. The textile factory where she works was once a source of pride for Shanghai and a symbol of national industry. After work, she habitually walks to the Yanqingli warehouse district along the Suzhou Creek, where she lives. The air is filled with the distinctive atmosphere of everyday life in old Shanghai neighborhoods.

Scene: Riding the then-popular “28-inch bicycle,” Master Lin weaves through the narrow lanes of traditional shikumen houses and crosses the Zhapu Road Bridge, beneath which the river flows quietly.

Products: 28-Inch Bicycle (representing industrial development and the improvement of ordinary people’s daily lives).

Narrative Theme 3: Haipai Modernity and Elegance (Time Slice: 1920s-1930s)

Syntactics: A collage of Art Deco geometric lines, Baroque clock towers, Western verandas, and Chinese shikumen architecture.

Semantics: Symbols of “Sino-Western integration”, “Haipai culture”, “Fashionable entertainment”, and “Modernity.”

Pragmatics: These signs construct a refined and romantic urban cultural image that appeals to audiences nostalgic for retro aesthetics.

Persona: Miss Manny (24 years old), a new resident of the Broadway Mansions area and an amateur writer.

Event: Miss Manny has just moved into the Broadway Mansions, renowned as the “No. 1 Apartment in the Far East.” She enjoys strolling at dusk dressed in a qipao tailored from Shenxin silk. This evening, she is on her way to a café. As she passes the Waibaidu Bridge, the bustling urban spectacle of Shanghai unfolds before her eyes, filling her mind with inspiration for writing.

Scene: She steps into the café of the Broadway Mansions and orders a cup of coffee. Through the floor-to-ceiling windows, she gazes at the rippling surface of the Suzhou Creek. In the distance, the hum of machinery from the Shanghai Brewery blends curiously with the chimes of the clock tower of the Shanghai General Post Office Building. In her mind, she begins to compose her own “Shanghai Dream.”

Products: Shenxin silk (symbolizing the elegance of Haipai women and the prosperity of the textile industry).

Narrative Theme 4: Transformation and Symbiosis (Time Slice: 2000s–Future)

Syntactics: The juxtaposition of preserved industrial relics (fair-faced brick walls) with modern glass roofs, design art, and “floating forest” structures.

Semantics: Symbols of “urban regeneration,” “creative arts,” “coexistence with nature,” and “hope for the future.”

Pragmatics: These signs showcase urban vitality and promote green lifestyles and new cultural-tourism landmarks.

Persona: Alex (28 years old), a visual designer working at the M50 Creative Park.

Event: Alex’s studio is located in the M50 Creative Park. Outside his window stand weathered red- and grey-brick walls interlaced with crisscrossing pipelines. This weekend, he is designing posters for the “Suzhou Creek Art Season.” In the afternoon, he decides to take a break and go

for a run along the riverside promenade, jogging all the way to the city’s newest social media landmark—the Tian An 1000 Trees.

Scene: Standing on the bridge opposite Tian An 1000 Trees, Alex beholds the spectacular sight of what appears to be a “floating forest.” He reflects on how the once polluted and malodorous Suzhou Creek has now transformed into a “river of happiness.” Opening his tablet and sketching with a stylus, he contemplates the river’s remarkable metamorphosis over the years—like a butterfly emerging after a long transformation.

Products: Tablet and Stylus (symbolizing a connection to advanced technology and serving as a bridge between past and present); Tian An 1000 Trees (representing contemporary design aesthetics and the spirit of internationalization).

Cultural Souvenir Prototyping

Based on the four narrative themes derived from the culture of the Suzhou Creek, folding fans and keychains were selected as the carriers of cultural souvenirs, conceived as “portable memories of the city.” Through everyday use, these objects enable users to experience the cultural charm of the river while expressing personal cultural taste and a sense of style. The design renderings are presented below:



Figure 4 Shanghai Suzhou Creek cultural Souvenir Design - keychain



Figure 5 Shanghai Suzhou Creek cultural Souvenir Design - Folding fan

Validation through Expert Evaluation

To verify the effectiveness and feasibility of the narrative themes and design outcomes constructed in this study, an expert evaluation was conducted using the Delphi Method. This approach aims to achieve reliable consensus through multiple rounds of expert consultation, particularly in situations where sufficient historical data are unavailable, thereby strengthening the Design-Based Research (DBR) cycle.

Evaluation Criteria and Scale: A five-point Likert scale was adopted for assessment, ranging from 1 (strongly disagree/very poor) to 5 (strongly agree/very good). In accordance with the research objectives, four key evaluation dimensions were established:

- 1) Cultural Recognition-Whether the design accurately extracts and communicates the cultural characteristics of the Suzhou Creek and demonstrates distinctiveness.
- 2) Emotional Resonance-Whether the narrative content evokes emotional connection and memory activation among audiences, particularly younger groups.
- 3) Commercial Value-Whether the products possess market potential, attractiveness, and conversion capability.
- 4) Innovativeness-Whether the design methodology and presentation break beyond the homogenization commonly found in traditional souvenirs.

Evaluation Results and Data Analysis: After two rounds of evaluation and feedback, the expert panel reached a high level of consensus regarding the four narrative themes and the two design carriers (keychains and folding fans). Statistical results indicate that the mean score for all evaluation items exceeded 4.0, demonstrating strong overall recognition of the research outcomes. Detailed scoring data are presented in the table below.

Expert Feedback and Discussion

1) Validation of Narrative Themes

Statistical analysis shows that Narrative Theme 2: The Golden Age of Industry and Narrative Theme 3: Haipai Modernity and Elegance both achieved unanimous full scores (Mean = 5.0) in the dimension of commercial value. Experts noted that these two themes closely align with current youth trends favoring “retro-national style” and “refined lifestyle aesthetics,” and therefore possess strong market transformation potential.

By contrast, Narrative Theme 1: Echoes of War and Memory received the highest scores in cultural recognition and emotional resonance (Mean = 5.0), yet relatively lower ratings in commercial value (Mean = 3.6). Experts suggested that product designs based on red-history themes should avoid excessive solemnity and instead adopt more contemporary and accessible visual language to enhance purchase intention among younger consumers.

2) Validation of Design Carriers

Between the two souvenir carriers, the folding fan demonstrated stronger overall performance than the keychain. Experts observed that the unfolding action of a folding fan inherently embodies a temporal narrative sequence, making it particularly suitable as a storytelling medium for presenting the time-slice narratives of Suzhou Creek, while also conveying richer cultural resonance.

In comparison, although the keychain received very high scores in commercial value (Mean = 5.0), it obtained relatively lower ratings in innovativeness (Mean = 3.4). Experts pointed out that as a conventional souvenir format, keychains are prone to homogenization and recommended improvements in materials or interaction design to better reflect the research outcomes of narrative-based design.

DISCUSSION & CONCLUSION

Research Significance

Grounded in Peircean semiotics and Morris’s triadic model, and integrated with narrative design methodology, this study constructs an integrated design framework comprising “symbol

extraction, classification, selection, thematic construction, and generation of narrative scenarios,” thereby providing an operational pathway for the systematic organization and innovative translation of Suzhou Creek culture. Empirical validation through expert evaluation further indicates that the framework facilitates the creation of design outcomes with high cultural recognition and market potential. Notably, the validation revealed that narrative themes grounded in relatable human experiences (e.g., industrial nostalgia, lifestyle aesthetics) resonate more strongly with contemporary commercial values, while themes of collective memory require careful design translation to bridge historical solemnity with modern consumption contexts. This finding demonstrates that the framework’s potential utility not only as an analytical tool but also as a practical guide for creating culturally resonant and commercially viable products.

Moreover, by adopting a “time slice” approach to formulate four narrative themes, the study integrates wartime memories of the 1930s-1940s, the resurgence of national industries in the 1980s, the romantic urban culture of early twentieth-century Shanghai, and the contemporary ecological revitalization and creative transformation of Suzhou Creek into a single narrative spectrum. This not only reinforces the historical depth of Suzhou Creek culture, but also offers a new perspective on cultural souvenirs as “narrative media” that embody the collective memory of the city rather than as isolated objects.

Research Limitations

The main outcomes of this study are the construction of narrative themes and product scripts, which were validated through an expert review process. However, large-scale prototyping and market-based consumer testing have not yet been conducted. Consequently, quantitative evaluations of cultural comprehension, emotional resonance, and commercial feasibility in real consumption contexts are still lacking. The research therefore remains primarily at the level of design research and conceptual validation, without longitudinal user-tracking data or cross-regional comparative studies, which may limit the generalizability and broader applicability of the findings.

Future Directions

Future studies may further explore the application of symbolic narratives in cross-media design, extending personas, events, and scenarios to exhibition planning, urban wayfinding systems, or public art installations in order to construct a multi-layered cultural experience system. Through continuous iteration and interdisciplinary collaboration, the semiotics-based narrative design framework proposed in this study has the potential to become a significant methodological tool for the innovation of regional cultural souvenirs, offering a more sustainable and dynamic pathway for the contemporary expression and inheritance of urban cultural memory.

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