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Innovative Design and Application of Dynamic Illustrations Based on Hua Tuo's Five-Animal Exercise

Master's Thesis submitted for the degree of **Master**

Specialty B2 Design

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The qualification work contains the results of independent research.

The use of ideas, results, and texts of other authors is properly referenced.

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ABSTRACT

LuoQiqi.Innovative Design and Application of Dynamic Illustrations Based on Hua Tuo's Five-Animal Exercise — Manuscript.

Master's Thesis submitted for the degree of Master, specialty B2 Design, Educational and Professional Program "Visual Communication Design." — Kharkiv State Academy of Design and Arts. Kharkiv, 2026.

This study takes Hua Tuo's Five- Animal Exercises, a national- level intangible cultural heritage from Bozhou, Anhui Province, as the research object. Focusing on the current communication dilemmas of Five- Animal Exercises, it explores innovative design methods and diversified application paths of dynamic illustration applied to traditional health- preserving intangible cultural heritage. Created in the Eastern Han Dynasty by Hua Tuo through imitating the postures and demeanors of tiger, deer, bear, ape and bird, Hua Tuo's Five- Animal Exercises integrates traditional Chinese medicine health- preserving concepts, traditional daoyin techniques and the philosophical idea of harmony between human and nature. It serves as a vital carrier of Chinese traditional fitness culture. Nevertheless, the current dissemination of Five- Animal Exercises mostly relies on textual readings, static illustrations and offline teaching. Such rigid forms cannot well adapt to the new- media communication environment. Young audiences show limited acceptance, and its rhythmic movements and cultural charm can hardly be conveyed intuitively.

Adopting combined research methods including literature review, field investigation, inheritor interview, questionnaire survey, case analysis and design practice, this thesis sorts out the historical context, movement system and cultural connotation of Hua Tuo's Five- Animal Exercises, and analyzes practical defects of existing visual communication products such as outdated imagery, lack of dynamic narration and superficial exploration of cultural symbols. Based on dynamic- illustration narrative theory, intangible- cultural- heritage symbol translation theory and body- movement visual- expression theory, this paper derives design principles for dynamic illustrations on the premise of maintaining the authenticity of Five- Animal Exercises movements, and completes a series of dynamic illustrations themed on tiger, deer, bear, ape and bird. Taking martial- arts movement textual research, Bozhou local cultural symbols and modern

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Chinese-style aesthetic standards into consideration, the design outputs static original paintings and looped dynamic clips, which can be applied in multiple scenarios such as short-video dissemination, digital exhibition display and cultural-and-creative derivative development.

The research indicates that dynamic illustration, a visual form combining traditional aesthetics and digital technology, can effectively break communication barriers for traditional sports-related intangible heritage and revitalize the cultural communication vitality of Five-Animal Exercises with visual language that meets contemporary aesthetic demands. This research enriches the visual-expression system of Hua Tuo's Five-Animal Exercises and provides referable design ideas and practical cases for the digital revitalization of Bozhou local intangible cultural heritage. Meanwhile, it is expected that the findings can offer certain references for the youth-oriented and digital innovative communication of similar traditional-sports intangible cultural heritage.

Keywords: Bozhou;Hua Tuo's Five-Animal Exercises;dynamic illustration; intangible cultural heritage; innovative design

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INTRODUCTION

Relevance of the research: Against the backdrop of digital revitalization of intangible cultural heritage and youth-oriented dissemination of traditional culture, the modern transformation of traditional sports and health-preserving intangible cultural heritage has become a significant topic in the field of cultural design. Hua Tuo's Five-Animal Exercises in Bozhou, as a national intangible cultural heritage item, embodies the wisdom of traditional Chinese medicine daoyin health preservation and the traditional philosophy of harmony between human and nature, and thus carries profound historical and cultural value. However, the current dissemination of the Five-Animal Exercises still relies heavily on printed reading materials, static atlases and offline master-apprentice teaching modes. Its visual expression forms are outdated and rigid, lacking dynamic visual content adapted to new-media environments such as short videos and digital exhibition halls. Such traditional communication methods can hardly fit the information-receiving habits of contemporary young audiences. The unique physical rhythm, animal demeanors and health-preserving cultural connotations of the Five-Animal Exercises cannot be intuitively and vividly presented, giving rise to practical problems such as cultural communication discontinuity and a narrow audience circle. Dynamic illustration, which combines narrativity, dynamic expressiveness and relatively low production cost, serves as an effective visual means to address the communication dilemmas of traditional sports intangible cultural heritage. It provides innovative solutions for the modern inheritance of Hua Tuo's Five-Animal Exercises, and thus carries multiple research values in cultural, social and design-practice dimensions.

Purpose of the research: This study takes dynamic illustration as the carrier and, on the premise of respecting the movement authenticity and cultural core of Hua Tuo's Five-Animal Exercises, aims to construct a dynamic-illustration visual system of the Five-Animal Exercises adapted to the new-media environment, break through the existing communication barriers of Hua Tuo's Five-Animal Exercises, and realize the modern translation of its cultural connotations. It also explores a feasible path for the dynamic visual expression of traditional health-preserving intangible cultural heritage, so as to provide a referable design methodology for similar intangible heritage projects.

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To achieve this purpose, the **following objectives** are set:

– To systematically sort out the historical origin, movement system and cultural implications of Hua Tuo's Five-Animal Exercises in Bozhou, and build a trinity cultural resource genealogy of the Five-Animal Exercises integrating "physical form – imagery – spirit";

– To investigate the existing visual communication products of Hua Tuo's Five-Animal Exercises, analyze the shortcomings of current visual expression, and clarify the core needs and optimization direction of dynamic illustration design;

– To combine the theories of dynamic-illustration narration, intangible-heritage symbol translation and body-movement visual expression, and establish the design principles of dynamic illustration suitable for Hua Tuo's Five-Animal Exercises;

– To complete the creative practice of five IPs (tiger, deer, bear, ape and bird) and five sets of themed dynamic illustration series, producing multiple types of design achievements such as static original paintings and looped dynamic clips;

– To explore the multi-scenario application schemes of the design achievements in short videos, digital exhibition halls and cultural and creative derivatives;

– To verify the rationality of the design achievements through inheritor expert evaluation and user tests on part of the general audience, and propose iterative optimization strategies.

Object of the research – the complete cultural system of Hua Tuo's Five-Animal Exercises in Bozhou, including its historical origin, the full movement paradigms of tiger, deer, bear, ape and bird, the connotation of health-preserving philosophy, existing communication carriers and the current situation of contemporary inheritance.

Subject of the research – the complete cultural system of Hua Tuo's Five-Animal Exercises in Bozhou, including its historical origin, the full movement paradigms of tiger, deer, bear, ape and bird, the connotation of health-preserving philosophy, existing communication carriers and the current situation of contemporary inheritance.

Chronological framework of the research – from the creation of the Five-Animal Exercises by Hua Tuo in the Eastern Han Dynasty, through the inheritance and evolution of successive dynasties, up to the contemporary digital new-media era.

Territorial framework of the research – taking Bozhou City, Anhui Province, the birthplace of Hua Tuo's Five-Animal Exercises, as the core region, with reference to the

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local intangible-heritage inheritors' inheritance system and local cultural resources of Bozhou.

Research methods:

–Literature research method: consulting ancient historical materials, intangible-heritage archives, academic journals and dissertations to sort out the historical materials of Hua Tuo's Five-Animal Exercises and the theoretical literature related to dynamic illustration and intangible-heritage visual transformation, so as to build the theoretical foundation of this study;

–Field investigation method: conducting on-site inspections of the Five-Animal Exercises inheritance bases in Bozhou, recording existing display carriers and communication status, and collecting first-hand image and video materials;

–Inheritor interview method: carrying out interviews with the intangible-heritage inheritors of Hua Tuo's Five-Animal Exercises to verify the movement paradigms and cultural implications, so as to ensure the historical and movement authenticity of the design content;

–Questionnaire survey method: conducting questionnaire surveys among young people, ordinary tourists and traditional-culture enthusiasts to collect audience aesthetic preferences and communication demands for the dynamic visual content of the Five-Animal Exercises;

–Case analysis method: analyzing excellent cases of intangible-heritage dynamic illustration and traditional sports visualization at home and abroad, and extracting referable creative experience;

–Design practice method: transforming the theoretical research and investigation results into a series of Five-Animal Exercises dynamic illustration works, and completing the scheme optimization and iteration according to feedback.

Practical significance of the research: Through dynamic illustration, this study completes the modern visual translation of the cultural resources of Hua Tuo's Five-Animal Exercises, facilitates the popularization and dissemination of national intangible cultural heritage, and enhances young people's cognitive interest in traditional daoyin health-preserving culture. The design achievements can be directly applied to new-media communication, local digital exhibition hall display, and the cultural tourism and cultural-and-creative development of Bozhou. Meanwhile, the design ideas formed in this study can also provide practical

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references for the digital and youth-oriented dissemination of other traditional sports and health-preserving intangible cultural heritage items in China.

Publications on the topic (if any): none

Structure and scope of the thesis.

The work consists of an introduction, three chapters, conclusions, a list of references (__ items), and an illustration album (__ items). The main body of the research comprises … pages, the total volume with appendices is … pages.

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CHAPTER 1

HISTORIOGRAPHY OF THE ISSUE. RESEARCH METHODS

1.1. Review of the Literature

1. Research Status in China

Domestic research on Hua Tuo's Five-Animal Exercises dates back to the mid-to-late 20th century. However, special-targeted studies combining the Five-Animal Exercises with dynamic illustration have attracted substantial attention only in the past decade. With the deepening of practices for intangible cultural heritage protection in China, academic exploration in this field has kept advancing and yielded relatively rich research outcomes. Existing studies mainly fall into four major sectors: historical textual research on Hua Tuo's Five-Animal Exercises, research on the mechanisms of traditional sports-based health preservation, inheritance and protection of intangible cultural heritage, and visual transformation design for intangible cultural heritage. Among them, the application value of dynamic illustration in the communication and revitalization of traditional-sports-related intangible cultural heritage has gradually become prominent. When exploring modern inheritance paths for the Five-Animal Exercises, dynamic illustration is regarded as an effective means to improve communication efficiency and narrow the distance between young audiences and traditional health-preserving culture.

(1) Research on the Ontology of Intangible Cultural Heritage

Since the 21st century, with the rapid development of the internet and digital animation technologies, digital-protection initiatives for traditional-sports-related intangible cultural heritage have been gradually promoted across China. As an emerging visual form, dynamic illustration has achieved relatively mature applications in other intangible-cultural-heritage fields such as traditional opera and folk paper-cutting. Leveraging tools including animated narration, digital material libraries and graphic databases, dynamic-illustration technology can provide new digital display paths for traditional health-preserving intangible cultural heritage[1].

(2) Intangible-Cultural-Heritage Communication and Visual Design Planning

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In their research on MG-animation presentation modes for Hua Tuo's Five-Animal Exercises, Xing Qiuli, Qi Jing and Yang Huaqi state that against the historical backdrop of digital communication for intangible cultural heritage, they take the cultural connotation and skill reproduction of the Five-Animal Exercises as the entry point and select Bozhou-originated Hua Tuo's Five-Animal Exercises as the research object. Adopting research methods of literature review, field investigation and audience questionnaires, they sort out theoretical achievements and practical cases concerning visual transformation for domestic and foreign traditional-sports intangible heritage. From four dimensions including IP-image building, artistic style, movement performance and communication channels, they put forward optimized strategies for modern dynamic-visual communication suitable for the Five-Animal Exercises[1]. This study confirms that dynamic visual media can make up for the shortcomings of conventional static texts and images. Nevertheless, it focuses predominantly on MG animation and does not carry out complete serial-creation practices for dynamic illustrations.

(3) Analysis of Practical Cases

Anhui has implemented digital-intelligent protection projects for Five-Animal Exercises, constructing special-topic databases integrating basic resources and display-application modules for archiving and interactive presentation of movement and historical materials[2]. This digital project provides new references for illustration creation in the digital era.

Xu Ping's graduate thesis explores visual redesign of Five-Animal Exercises cultural-creative products through symbol extraction. She proposes design strategies covering movement restoration, imagery refinement, symbol reconstruction and narrative rebuilding, advocating embedding Bozhou local cultural symbols to strengthen cultural identity[3].

Li Haiyan examines animation-driven inheritance for Five-Animal Exercises. She constructs a dynamic-narrative framework, discusses practical transformation paths and completes partial IP-image design for better media adaptation of this heritage[4].

Although the above-mentioned projects all focus on the inheritance and innovation of intangible cultural heritage, certain practices still suffer from insufficient in-depth cultural

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excavation. For instance, insufficient exploration into the health-preserving thoughts and spiritual connotations behind animal imagery in the Five-Animal Exercises results in insufficiently three-dimensional presentation of cultural elements. Conflicts may emerge between popular-science functions and artistic expression in some works. How to balance the authenticity of skills and artistic recreation in illustrations remains a topic requiring continuous exploration. The success of a project lies not only in its immediate communication effects but also in its long-term sustainable development. Maintaining the long-term communication appeal of works deserves key attention. For example, work contents can be iterated and optimized continuously to adapt to changes in short-video-platform rules and audience aesthetic demands.

2. Foreign Research Status

After the Second Industrial Revolution, Western media and illustration industries flourished. In the early 20th century, moving illustration and motion-graphic design came into being. Creators applied dynamic visuals to depict ethnic dances, traditional gymnastics and folk physical skills, alongside gradual refinement of relevant creative theories. As many physical-form intangible cultural heritage worldwide suffered inheritance risks, dynamic illustration gained wide adoption as a digital recording and conservation tool for cultural heritage.

Against this backdrop, the principle of authenticity has drawn growing attention within the field of intangible cultural heritage conservation. The Nara Document on Authenticity, issued by UNESCO in 1994, states that the visual representation of cultural heritage should take multiple dimensions including form, craftsmanship and spiritual connotation into account, and opposes excessive artistic adaptation detached from cultural ontology[5]. This principle has also become an important evaluation criterion for dynamic-visual creation of physical-form intangible cultural heritage.

Canada's Dances of Our Ancestors Indigenous-Dance Dynamic-Visualization Project

Canada's Dances of Our Ancestors project represents a representative practice for the digital conservation of Indigenous intangible cultural heritage. Bringing together Indigenous tribal inheritors, illustrators and animation designers, the project reconstructs endangered Indigenous ritual dances with sequential dynamic illustrations based on oral-history records

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and historical footage. Throughout the creation process, inheritors strictly review movement postures, costume symbols and ritual implications. Stylized illustration processing is conducted on the premise of guaranteeing cultural authenticity, and the resulting dynamic illustrations are applied to online exhibitions and public-education communication. The project team argues that dynamic-visual works for physical-genre intangible cultural heritage should not pursue visual beauty merely for its own sake; movement structures and cultural implications must be verified by local inheritors[6].

The Moving Bodies Folk-Physical-Heritage Digital-Archive Project at the UK V&A Museum

Launched by the Victoria and Albert Museum (V&A), the Moving Bodies digital archive focuses on European folk dances and gymnastics. It transforms historical paintings and archival footage into dynamic-illustration clips for an open-access online library, popularizing folk movement heritage for teenagers. The project notes that dynamic illustration is ideal for demonstrating continuous physical movements, though designers must balance stylized artistic adaptation with factual integrity of original skills[7].

In recent years, research on dynamic-illustration for physical-form intangible cultural heritage has moved beyond simple digital archiving to evaluate real-world communication effects. Projects including Canada's Indigenous-dance visualization and V&A's Moving Bodies have verified that dynamic illustrations and frame-sequence animations enable digital preservation, interactive display, and improved public cultural-identity awareness for traditional physical skills.

Nevertheless, foreign research still has notable limitations. Most existing projects centre on European and American folk traditions, with few interpretations of Eastern daoyin health-preserving culture and its core philosophy of "harmony between human and nature" represented by the Five-Animal Exercises. There continues to be a tough balancing act between stylized artistic treatment and faithful depiction of movements. What's more, keeping the work engaging over time and refining content to suit cross-cultural viewers deserves further research.

China's research on dynamic-illustration for Hua Tuo's Five-Animal Exercises began later than Western counterparts, though recent graduate and creative works have emerged.

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Research on reconstructing folk movement dynamics and building interactive narratives from international cases can provide useful insights for this study.

Overall, designing dynamic illustrations for health-preserving intangible cultural heritage rooted in traditional sports holds considerable research value. Even so, a host of practical challenges are still left unaddressed.Future work should deepen cultural interpretation, balance artistic creation and movement authenticity, develop Bozhou-oriented visual-communication strategies, and support the sustainable and widespread dissemination of Five-Animal Exercises.

1.2 Research Methods

(1) Literature Research Method

This method involves consulting ancient books, intangible cultural heritage archives, dissertations and journal papers to sort out the historical origin, exercise system and inheritance status of Hua Tuo's Five-Animal Exercises. Meanwhile, relevant theoretical materials on dynamic illustration, symbolic translation of intangible cultural heritage and visual expression of body movements are collected. Through induction, comparison and discrimination of literature, the overall theoretical foundation of the thesis is established, and the research scope and orientation are defined.

(2) Field Investigation Method

Field investigations are carried out at the inheritance base of Hua Tuo's Five-Animal Exercises in Bozhou. The existing display forms in offline exhibition halls are observed; the advantages and disadvantages of promotional materials and exhibition carriers are recorded. First-hand image and video materials are captured to gain an immersive experience of the local cultural environment, which provides practical evidence for extracting local cultural symbols in the design.

(3) Inheritor Interview Method

Interviews are conducted with local inheritors of the Five-Animal Exercises in Bozhou to verify the movement patterns and spiritual connotations of each form: tiger, deer, bear, ape and bird. This clarifies the health-preserving cultural meaning behind the exercises and guarantees the movement authenticity and cultural accuracy of subsequent dynamic illustration creation.

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(4) Questionnaire Survey Method

Questionnaires are distributed among young people, general tourists and traditional-culture enthusiasts to collect audience preferences, viewing habits and content demands regarding dynamic visual content of the Five-Animal Exercises. Audience pain points are identified to supply audience-oriented data support for establishing design principles.

(5) Case Analysis Method

Representative domestic and international cases of intangible-heritage dynamic illustration and visualization of traditional sports are collected. A comparative analysis is conducted from multiple dimensions including creative concepts, symbol extraction, dynamic rhythm and media application. Valuable experience is summarized for reference, while problems exposed in similar works are avoided.

(6) Design Practice Method

Conclusions drawn from previous theoretical research, field investigation and case analysis are implemented. Five sets of themed dynamic illustrations corresponding to tiger, deer, bear, ape and bird are created, including static original paintings and looping dynamic clips. Multi-scenario application schemes are developed, and the scheme is iterated and optimized based on feedback from inheritors and general audiences.

Conclusions to Chapter 1

This chapter systematically reviews domestic and international studies on Hua Tuo's Five-Animal Exercises, traditional-sports intangible cultural heritage inheritance, dynamic-illustration design and cultural visualisation, clarifying the research background, theoretical foundation, research gaps and innovative directions of the present thesis.

Domestic scholarship has built a mature theoretical basis for Five-Animal Exercises regarding historical textual research, health-preservation mechanisms, heritage protection strategies and static cultural-creative design, supplying solid resources for its cultural interpretation and visual transformation. Dynamic-illustration and visual-narrative techniques have already been widely adopted in folk-heritage projects and proven feasible for digital heritage communication. Even so, three major limitations remain: existing visual outputs are mostly static graphics and real-person teaching materials without complete

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systematic dynamic-illustration systems; most digital works only popularize movements while neglecting Bozhou local cultural symbols and the Eastern philosophy of “harmony between human and nature”; targeted design frameworks and complete practical workflows for health-preservation-related sports heritage are still absent.

Studies from abroad have built up solid theoretical foundations for motion graphics, folk movement visualization and digital heritage preservation. Researchers have also gained ample practical experience in reconstructing bodily performances, developing visual narratives, and negotiating the trade-off between artistic re-creation and cultural authenticity. Even so, most overseas cases revolve around European and American folk traditions. Few works examine Eastern daoyin health-preserving ideologies such as the wisdom carried by the Five-Animal Exercises. As such, Western design paradigms cannot be directly transplanted into China’s native practice of visually translating health-related intangible heritage.

In short, while adequate theoretical foundations exist, targeted systematic practical research is lacking. A clear research gap lies in integrated dynamic-illustration design that combines Bozhou regional culture, authentic health-preserving movements and artistic narrative expression. Addressing these shortcomings, this thesis conducts systematic dynamic-illustration design and practical application for Five-Animal Exercises. Through movement restoration, cultural-imagery refinement, dynamic-narrative construction and regional-symbol integration, it remedies defects in current visual communication and delivers new ideas and practical references for the digital inheritance and innovative dissemination of traditional-sports intangible cultural heritage.

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CHAPTER 2

ANALYSIS OF DESIGN THEORY AND PRACTICE

2.1.Theoretical Basis of Dynamic Illustration and Intangible Cultural Heritage Visual Communication

2.1.1 Core Concepts and Artistic Characteristics of Dynamic Illustration

Dynamic illustration is an emerging digital visual form generated by adding lightweight dynamic effects (displacement, deformation, gradient, transition and loop-frame animation) to static original illustrations. Distinct from full-length traditional animation and pure motion graphics, it has three core features: aesthetic artistry, lightweight narration, and media adaptability. By introducing subtle movement and pictorial rhythms to static visuals, dynamic illustration brings symbols to life and matches the artistic trait of physical intangible cultural heritage — "expresses meaning through movement and integrates form and spirit". With manageable production costs and flexible outputs, it fits multiple communication scenarios including short-video platforms, social media and new-media exhibition panels, making it a suitable visual carrier for youth-oriented, lightweight intangible-heritage dissemination.

Artistically, dynamic illustrations preserve the hand-painted texture and expressive power of traditional illustrations to realise refined visual translation of cultural symbols. From a media perspective, its lightweight narrative breaks down complex movement logics and abstract cultural connotations of heritage practices. It addresses the low-audience-acceptance problem caused by obscure traditional heritage visuals and offers key technical and artistic support for interpreting movements and cultural imagery of Hua Tuo's Five-Animal Exercises in this research.

Moreover, symbol-translation theory establishes clear design logic for this project. It extracts three tiers of Five-Animal Exercises symbols: external morphological symbols (animal postures, standard exercise gestures and Bozhou local visual elements); intermediate-level behavioural symbols (movement rhythms and physical opening-closing rhythms); and deep-layer spiritual symbols including "harmony between human and nature",

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yin-yang balance and health-preserving philosophy. Hierarchical translation across these three layers prevents mechanical copying of movements and enables integrated visual expression of form, spirit and artistic conception.

2.1.2 Visual Symbol Translation Theory of Intangible Cultural Heritage

The 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage defines intangible cultural heritage as practices, performances, knowledge, skills and associated venues. This definition highlights that intangible heritage is essentially "living practice", not static physical relics. Accordingly, the central task of dynamic illustration for intangible heritage is to translate embodied physical practices into visual language suitable for screen-based media circulation.

From Peircean semiotic perspective[8], Five-Animal Exercises movements combine iconic, indexical and conventional signs. Imitative animal postures and gestures form the iconic layer. Movement sequences, breathing and mental focus behind invisible health-benefits constitute the indexical layer. Hand shapes, steps, orientations and inherited technical norms recorded in ancient texts belong to high-context conventional knowledge. This creates a core tension for dynamic-illustration creation: balancing the visual attractiveness of iconic representation and the professional accuracy of conventional technical rules, which visual-symbol-translation methods aim to resolve[9].

Visual symbol-translation constitutes the core theory for digital heritage design. Its logic lies in hierarchical extraction, deconstruction, reorganization and artistic reconstruction of morphological, colour and spiritual symbols, transforming traditional heritage into contemporary visual language through intersemiotic translation[10]. Unlike static folk heritage, sports-oriented health-preservation intangible heritage prioritises physical-movement symbols, animal imagery and health-preserving conception alongside patterns and local regional elements.

Symbol-translation theory delivers a standardised design framework for this research. Through extracting external-form symbols, analysing behavioural movement rhythms and distilling inner-spiritual connotations, it prevents superficial duplication of exercise movements and enables in-depth, integrated "form-spirit-conception" cultural expression in Five-Animal Exercises dynamic-illustration outputs.

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2.1.3 Dynamic Visual Narrative Theory

Dynamic visual narrative theory builds complete narrative contexts via pictorial rhythm, logical shot transitions and element-movement relations[11], delivering information and emotional meaning through dynamic visual change, unlike the mere demonstrative function of static images. For continuous bodily intangible cultural heritage such as the Five-Animal Exercises, static visuals fail to convey coherent movement logic and shifting artistic conception. By means of frame-animation rhythm, speed contrast and coordinated imagery elements, dynamic narration reconstructs the core aesthetic feature of Five-Animal Exercises: “integration of movement and stillness, unity of void and solid”.

Within intangible-heritage communication, dynamic visual narration reduces the opacity of traditional culture. It interprets heritage connotations through visualised, contextualised moving imagery and narrows the cultural gap between young audiences and traditional health-preserving culture. This theory offers robust theoretical support for the narrative framework, dynamic-rhythm design and compositional logic of the Five-Animal Exercises systematic dynamic-illustration series developed in this thesis.

2.2. Sorting of Cultural Resources and Investigation on Communication Status of Hua Tuo’s Five-Animal Exercises

2.2.1 Sorting of Core Cultural Resources of Hua Tuo’s Five-Animal Exercises

Originating in Bozhou, Anhui Province, Hua Tuo’s Five-Animal Exercises is a traditional health-preserving daoyin system created by Eastern-Han-Dynasty physician Hua Tuo[12]. Rooted in traditional Chinese medical daoyin theories as well as yin-yang and five-element philosophy, it imitates the postures, temperaments and living habits of tigers, deer, bears, apes and birds. Listed as national-level intangible cultural heritage, it integrates medical healthcare, physical practice, traditional philosophy and local regional culture. Its cultural resources fall into three groups: exercise-technique resources, imagery resources, and regional-cultural resources[13].

As the core ontology, exercise-technique resources contain five self-contained movement systems with standardized postures, fixed rhythms and distinct health-benefit effects. Tiger Exercise builds inner strength with powerful, steady gestures; Deer Exercise focuses on meridian-unblocking stretching with soft, relaxed motions; Bear Exercise

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tonifies the spleen and nourishes qi through simple, stable movements; Ape Exercise nourishes the heart with nimble, lively gestures; Bird Exercise clears internal stagnation via light, elegant poses. Following the movement logic of motion-stillness integration and hardness-softness harmony, the whole regimen delivers great potential for dynamic visual expression.

Visual imagery constitutes the spiritual core of the Five-Animal Exercises. The five animal motifs go beyond superficial visual markers; each one carries distinct wellness connotations and philosophical underpinnings. This trait sets the Five-Animal Exercises apart from conventional martial arts and gymnastics, and lays the foundational creative inspiration for this dynamic illustration study. Rooted in Bozhou's identity as the "Medicinal Capital" together with Han-Wei historical heritage, local cultural resources supply distinctive contextual materials. These materials support the integration of regional cultural emblems and the construction of a dedicated visual system within the design practice[14].

2.2.2 Investigation on Existing Communication Forms of the Five-Animal Exercises

Based on field investigations conducted at Bozhou's Five-Animal Exercises inheritance bases, Hua Tuo Memorial Hall and local cultural and tourism exhibition venues, combined with data sorting from online platforms, the contemporary dissemination modes of the Five-Animal Exercises can be summarized into three main types: static paper carriers, real-person video materials, and basic digital communication forms[15].

Traditional paper-based dissemination covers ancient manuscript illustrations, teaching picture albums and promotional posters. Restricted by static presentation characteristics, these forms can only display separate fixed postures of the exercises, failing to present the continuous and rhythmic movement characteristics of the Five-Animal Exercises. By contrast, real-person video resources mainly include teaching short videos, on-site live performances and thematic documentaries.While these realistic materials serve popular-science and skill-teaching purposes, they lack aesthetic refinement and interpretation of cultural imagery. Rudimentary digital communication mostly relies on scattered static cultural-creative graphics and fragmentary animation snippets. These outputs remain unsystematic and overlook in-depth interpretation of cultural connotations and Bozhou regional symbols.

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2.2.3 Summary of Core Problems in Contemporary Communication

According to comprehensive investigation results, the current visual communication of Hua Tuo's Five-Animal Exercises has four prominent core problems. First, the visual forms are rigid and dominated by static and realistic content, lacking systematic dynamic visual works adapted to new media platforms. Second, the content suffers from serious homogenization. Most existing works focus merely on popularizing exercise movements while ignoring the artistic expression of animal demeanors, philosophical conception and regional culture. Third, the content has poor audience adaptability. The outdated presentation forms fail to attract the attention of young audiences. Fourth, the visual content is fragmented and unsystematic. Existing dynamic materials lack unified visual specifications and cannot be reused and disseminated in multiple scenarios. The above problems provide a clear optimization direction for the dynamic illustration design of this research.

2.3. Deduction of Design Constraints, Research Hypotheses and Design Principles

2.3.1 Design Constraints

Drawing upon literature review, field investigations and interviews with intangible-cultural-heritage inheritors, this study sets explicit constraints for Five-Animal Exercises dynamic-illustration design to guarantee professional and rigorous outputs[14].

This study establishes three core design criteria. The first concerns the authenticity of exercise techniques. Every movement, rhythmic sequence and structural logic shown in dynamic illustrations should closely follow the standard frameworks handed down by official inheritors. Random adjustments to exercise sequences are not permitted, to safeguard the professional nature of this traditional sports intangible heritage. The second criterion is cultural accuracy. Spiritual undertones, health-preserving values and symbolic meanings behind the five-animal imagery ought to match ancient documents and official inheritance frameworks, which helps prevent cultural misreading and improper use of symbols. The third one is media adaptability.All dynamic illustrations adopt lightweight, highly-compatible production workflows suitable for multi-scene deployment: short-video distribution, new-media posters, cultural-creative exhibitions and online popular-science education.Fourth, regional-cultural uniqueness. Designs incorporate Bozhou local cultural

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features to differentiate outputs from generic martial-arts and folk dynamic works, establishing a distinct visual-identity system exclusive to Five-Animal Exercises.

2.3.2 Research Hypotheses

Combined with the existing research gaps and practical communication problems, this study proposes three core research hypotheses.

First, compared with traditional static visual materials and real-person shooting videos, the systematic dynamic illustration system that integrates authentic exercise techniques, unique animal imagery and Bozhou regional symbols can realize more effective youthful communication of the Five-Animal Exercises culture.Second, the design logic of “movement restoration — imagery refinement — dynamic narration — regional empowerment” can effectively solve the current problems of homogeneous, superficial and unsystematic visual communication of the Five-Animal Exercises.Third, the standardized, lightweight and artistic dynamic illustration system of the Five-Animal Exercises can adapt to diverse new media scenarios, thereby realizing the living inheritance and innovative promotion of traditional health-preservation intangible cultural heritage.

2.3.3 Deduction of Design Principles

Combining preceding theoretical foundations, fieldwork findings, design constraints and research hypotheses, this study derives four core design principles for the dynamic illustration of Hua Tuo’s Five-Animal Exercises.

1. Principle of Exercise Authenticity Based on inheritors’ standard movement paradigms and ancient illustrated manuscripts, the physical structures, motion rhythms and features of the five exercises are faithfully reconstructed. All dynamic visuals follow the specifications of traditional health-preserving exercises to safeguard the professionalism of this intangible heritage.

2. Principle of Cultural Imagery Beyond mechanical reproduction of movements, the design excavates the unique temperament, health-preserving connotations and Eastern philosophical ideas behind the five animal archetypes. Through adjusting dynamic rhythm and visual tone, the design conveys the core cultural value of "unity of form and spirit". It moves beyond mere demonstration of movements to deliver in-depth cultural storytelling.

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3. Principle of Regional Recognition.The design embeds Bozhou's local cultural symbols originating from Han-Wei culture and the Medicinal Capital heritage. It combines these regional elements with movement dynamics and the visual language of illustrations.It builds a distinctive dynamic visual system for Five-Animal Exercises with Bozhou local characteristics, distinguishing it from visual works of other traditional sports intangible heritage.

4. Principle of New Media Adaptability Adopting lightweight, concise and youth-oriented aesthetics, the design controls dynamic rhythm and visual complexity to suit short-video, social-media and cultural-exhibition scenarios. It balances artistic quality and communication practicability and supports sustainable, youth-oriented digital inheritance of Five-Animal Exercises[14].

Conclusions to Chapter 2

This chapter completes theoretical sorting, field investigation and design logic deduction for the dynamic illustration design of Hua Tuo's Five-Animal Exercises, constructing the core research framework of this study. Firstly, it systematically elaborates four foundational theories: dynamic illustration, intangible cultural heritage visual symbol translation, dynamic visual narrative, and intangible heritage living inheritance. As a lightweight new-media visual carrier, dynamic illustration can transform the embodied physical practice of sports intangible heritage into modern visual language through hierarchical symbol decoding and dynamic narrative construction[16]. From the perspective of Peircean semiotics, this chapter further clarifies the tension among iconic, indexical and conventional signs in heritage visual creation, providing theoretical support for balancing artistic aesthetics and cultural authenticity in design practice[8].

Secondly, this study categorizes the core cultural resources of the Five-Animal Exercises into exercise technique, animal imagery and Bozhou regional cultural resources. Based on field interviews and online data collation, it summarizes three mainstream communication modes, including paper-based static dissemination, real-person video popularization and fragmented digital output. Furthermore, it identifies four key communication bottlenecks: rigid visual forms, serious content homogenization, insufficient

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attraction to young audiences and unsystematic digital resources, which constrain the innovative inheritance of the Five- Animal Exercises in the digital era[15].

Finally, grounded in the above theoretical basis and empirical investigation, this chapter proposes four design constraints covering movement authenticity, cultural accuracy, media adaptability and regional uniqueness. Combined with research hypotheses, four targeted design principles are deduced, namely exercise authenticity, cultural imagery, regional recognition and new media adaptability. The systematic theoretical construction, current situation research and principle deduction in this chapter lay a solid foundation for the symbol extraction, narrative framework building and practical design implementation in the subsequent chapter.

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CHAPTER 3

DESIGN PROPOSAL

The third chapter substantiates the design proposal, outlines the prerequisites for practical implementation, etc. The title of this chapter should reflect the specific task, for example:

3.1. Concept of the Design Proposal

Core Design Philosophy

This design takes Bozhou's national-level intangible cultural heritage, Hua Tuo's Five-Animal Exercises, as the creative subject. This work puts movement authenticity and artistic storytelling at the forefront. It takes advantage of the strengths of lightweight dynamic illustrations to produce regionally distinctive works suitable for new media dissemination[1]. Aimed at young viewers, tourists and cultural lovers, the result offers narrative-led interpretation of intangible heritage instead of straightforward skill tutorials.

Built upon the standardized movement frameworks of the Five-Animal Exercises, the design brings together classic animal imagery and local cultural symbols from Bozhou. Every posture and rhythmic sequence follows professional exercise standards, achieving a faithful visual translation of this embodied wellness heritage[16].

Guided by living inheritance theory, the design steers clear of two frequent pitfalls: documentary-like teaching clips and decontextualized, freely styled illustrations. It responds to prominent flaws found in current digital works about the Five-Animal Exercises, including disjointed resources, uniform visual styles, and shallow depictions of cultural imagery.

Sketch：

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Decomposition of Design Goals

This research defines three interconnected design goals: cultural faithfulness, visual creativity, and multi-channel communication.

Cultural Faithfulness Objective

With validation from Wu Qin Xi inheritors, the design reconstructs standard postures and movement rhythms. It also reflects internal breathing logic through dynamic timing to retain the health-preserving connotations of traditional Chinese medicine. A formal expert review process ensures visually accurate representation of the exercises and prevents distorted movements or misinterpretation of cultural content[17].

Visual Creativity Objective

The research polishes five-animal imagery and picks out elements unique to Bozhou, including Han-Wei decorative patterns and symbols from local medicinal culture. Morphological deconstruction and symbolic transformation help form a locally grounded dynamic illustration system. Through dynamic visual storytelling, the work interprets the Eastern philosophy of “harmony of movement and stillness, unity of form and spirit”. In this way, the final results go past simple movement display and deliver profound cultural narratives.

Multi-channel Communication Objective

Modular and reusable dynamic illustration assets are created for short-video platforms, digital exhibition spaces and offline cultural and creative installations. By lowering barriers for public understanding, the design strengthens young audiences’ cultural recognition of Wu Qin Xi. It also provides a repeatable visual communication framework for the digital inheritance of daoyin wellness heritage[18].

3.2.Project Description

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1.Tiger Play Dimension Design

Structural Design

Adopt a "central force generation + circular diffusion" structure, with the tiger IP character as the core. Auspicious- cloud and scroll elements link action nodes “Tiger Raising → Tiger Pouncing → Tiger Might”, corresponding to horse- stance movement sequences, constructing a narrative logic of “action display → power transmission → mighty temperament.”

Visual and Graphical Solutions

Visual Materials: Off- white and ink- black serve as main tones matching the Water element of Five Elements. It incorporates Bozhou Qiaowang Tower, peony and lotus- seed medicinal motifs together with classic rolling- cloud linework. The tiger IP strikes a powerful horse- stance punch to convey the forceful temperament of Tiger Play.

Dynamic illustration video display of tiger play:

国潮国风插画动态化设计-虎.mp4



2. Deer Play Dimension Design

Structural Design

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Adopt a "stretching extension + linear flow" structure, with the deer IP character as the main subject, following the flow direction of the Guo River to connect the action nodes of "Deer Resistance → Deer Running → Deer Softness" — "standing — spreading arms — resembling antlers — gently turning — looking around — returning to center" — forming a narrative logic of "posture stretching → qi and blood circulation → lightness and agility."

Visual and Graphical Solutions

Visual Materials: Mainly in cyan-blue, gray-blue, and off-white, accented with light green and pale yellow, echoing the Wood element of the Five Elements. Integrate elements of Bozhou's old street dwellings and the Guo River's water flow, supplemented with herbal plants such as honeysuckle and balloon flower, and embellished with ancient medicine-grinding tools, medicine bottles, medicine stoves, and medical scrolls to create a warm and stretching atmosphere. The deer character has antlers on its head and blue hair falling over its shoulders, assuming a stretching posture with one arm extended forward and the other extended backward, with a gentle and soft expression.

Dynamic illustration video display of deer play:

国潮国风插画动态化设计-鹿.mp4



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3. Bear Play Dimension Design

Structural Design

Adopt a "steady and solid + lowered center of gravity" structure, with the bear IP character as the main subject, centering on the action nodes of "Bear Transport → Bear Sway → Bear Stability" — "standing — shifting left and sinking the body — slightly swaying back to center — shifting right — returning to center and standing" — forming a narrative logic of "steady and reserved → solid and powerful → stable as Mount Tai."

Visual and Graphical Solutions

Visual Materials: Mainly in yellow-brown, warm beige, and light gold, accented with cyan-green and vermilion. The character wears a beige bamboo hat, a yellow-brown short robe, and off-white trousers; the background features light gray-white architecture and cyan-blue distant mountains, with Bozhou chrysanthemums in golden yellow and orange-red around the scene, and medicine jars, medicine grinders, and medicine cabinets rendered in dark brown and ink black, creating an overall tone that is steady, solid, warm, and grounded. Echoing the Earth element of the Five Elements, the design integrates architectural elements of Bozhou Hua Tuo International Traditional Chinese Medicine City and Bozhou South Railway Station, with medicine cabinets, medicine scales, medicine grinders, and authentic Bozhou medicinal herbs arranged on both sides, and Bozhou chrysanthemums encircling the scene, keeping the overall composition weighted toward the lower part. The bear character wears a bamboo hat and a yellow short robe, stands on auspicious clouds with both feet, and has a steady and honest expression.

Dynamic illustration video display of deer play:



国潮国风插画动态化设计-熊.mp4

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4. Monkey Play Dimension Design

Structural Design

Adopt a "contracting and gathering + circular jumping" structure, with the monkey IP character as the center, centering on the action nodes of "Monkey Raising → Monkey Picking → Monkey Agility" — "standing → bending knees and relaxing the body → extending palms forward → switching sides to probe and grasp → gently shifting and retracting → returning to center and resetting" — forming a narrative logic of "alertness and vigilance → agile climbing and picking → lively and nimble."

Visual and Graphical Solutions

Visual Materials: Mainly in vermilion, warm beige, and light brown, accented with cyan-green and ink black. The character has red hair, a red-and-white Hanfu, and a red belt; the background architecture features vermilion beams and columns with gray-blue tiled roofs, and distant mountains appear in cyan-blue; surrounding peonies, lingzhi mushrooms, medicine jars, and medicine pestles are rendered in warm brown and cyan-green, creating an overall tone that is warm, lively, and nimble, echoing the Fire element of the Five Elements. The design integrates architectural elements of Bozhou's ancient commercial town and traditional Chinese medicine shops, surrounded by medicine jars,

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medicine pestles, medicine bottles, and medicinal food ingredients, supplemented with plants such as peonies and lingzhi to enhance the dynamism and interest of the picture. The monkey character has flame-like red hair and bright round eyes, standing upright with hands slightly open, embodying an alert and vigilant temperament.

Dynamic illustration video display of ape play:

国潮国风插画动态化设计-猿.mp4



5. Bird Play Dimension Design

Structural Design

It follows a structure of “rise and stretch + upward soar”, taking the bird IP figure as the core. The sequence hinges on key action nodes: “Bird Stretching → Bird Flying → Bird Lightness”. The full movement flow goes: natural standing → stretching both arms out horizontally like wings → raising and unfurling the wings → opening the chest while gently lifting the torso → slowly drawing arms back toward the chest → returning to the starting stance, then repeating the whole cycle. This arrangement builds a narrative logic

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that shifts from gentle extension to free soaring, and finally to uplifting spirit and rhythmic vitality.

Visual and Graphical Solutions

The visual palette is dominated by off-white, light gold, and warm gray, with subtle accents of vermilion, cyan-green, and ink black. The bird character has white plumage, black wings, and a red crest, and wears a white martial arts uniform trimmed in gold with a red belt. The background includes ancient pagodas and pavilions, with vermilion beams and columns, gray-blue tiled roofs, and cyan-blue distant mountains. Bozhou chrysanthemums, lingzhi mushrooms, and pine branches in golden yellow and cyan-green surround the scene, creating an overall atmosphere that is elegant, expansive, light, and soaring, while echoing the Metal element in the Five Elements.

The design incorporates architectural references from Bozhou’s Ten Thousand Buddha Pagoda and Huaxi Tower. These structures are framed by Bozhou chrysanthemums, flying cranes, pine branches, and lingzhi, with medicine stoves, medicine jars, scrolls, and ribbons as supporting details. The bird character—with white feathers, black wings, and a red crest—is depicted in a wing-spreading posture, as if about to take flight. One arm extends forward while the other raises upward, capturing the light, stretching quality of Bird Play.

Dynamic illustration video display of bird play:



国潮国风插画动态化设计-鸟.mp4

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6. Overall Visual Uniformity

All five visual dimensions adopt a cohesive set of visual languages. Specifically, the whole series features unified Chinese linear drawing and lightweight ink wash coloring, together with auspicious cloud motifs that run through all works. The design repeatedly extracts typical regional symbols of Bozhou and applies Five Elements-based color matching in a systematic manner. Besides, a unified top title format — "WUQINXI + corresponding animal English abbreviation" — is adopted across all visuals.

Each illustration takes a circular platform or ground base as the core layout. With the animated character placed in the center and auxiliary decorative elements distributed around, the visual layout remains consistent across different exercise scenes. This unified presentation enables viewers to form a holistic and coherent cognition of the culture behind Hua Tuo's Five-Animal Exercises when browsing different motion sets.

3.3. Technical Support and Testing

This study uses a multi-software workflow for creation and data processing. Photoshop refines visuals and colors; Illustrator and Procreate produce vector line art. After Effects, with auxiliary intelligent tools, supports animation and effect synthesis.

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Excel organizes research and questionnaire data, while charting tools generate quantitative visuals, including motion amplitude comparisons and five-element color distribution graphs.

The research yields two types of design outcomes: static illustrations for offline exhibitions and cultural creativity printing, and dynamic illustrations for new media promotion and exhibition display.

This paper adopts a hybrid evaluation method combining expert review and user testing[19]. Inheritors and design professionals evaluate the works' technical accuracy, visual logic and cultural expression to optimize movement details. Participants comprising practitioners, general audiences and cultural researchers provide feedback on visual experience, content clarity and interactive willingness, informing the reception assessment of animal imagery.

Based on comprehensive evaluation results, the design optimizes movement rhythm, color scheme and cultural interpretation. It achieves a balanced outcome among technical authenticity, aesthetic performance and communication effectiveness[20].

Conclusions to Chapter 3

This chapter elaborates a complete practical framework for the dynamic illustration design of Hua Tuo's Five-Animal Exercises, covering design concept, visual scheme and technical verification.Through differentiated design across the five animal dimensions—Tiger, Deer, Bear, Monkey, and Bird—and unified overall visual management, a dynamic illustration system with "distinct exercise characteristics, clear overall cognition, and reasonable information hierarchy" has been constructed.

The five sets of dynamic illustrations, as the core carriers of the design practice, have not only realized the transformation of Hua Tuo's Wu Qin Xi from "static text and images" to "dynamic visual narrative," but also innovatively proposed a design paradigm of "five-animal differentiation + Five Elements integration." This provides an operable reference path for the living inheritance of traditional health-preserving Daoyin-type intangible cultural heritage and lays a solid visual and content foundation for the subsequent dissemination of the cultural IP of Hua Tuo's Wu Qin Xi.

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CONCLUSIONS

Centering on Bozhou's national intangible heritage, Hua Tuo's Five-Animal Exercises, this study addresses its modern communication bottlenecks. Through dynamic illustration design, it realizes the living inheritance of traditional wellness culture, strengthens public recognition, and endows the heritage with modern communication vitality.

This study adopts literature collation, field investigation, questionnaire research, case analysis and design practice. It organizes the exercise's three-dimensional resources of techniques, cultural connotations and TCM wellness values. Based on relevant digital heritage and visualization theories, it concludes four core design principles: authenticity, systematicness, readability and differentiation to guide the whole design process.

This research completes differentiated dynamic illustrations for five animal plays. Each adopts unique movement logic and visual traits: Tiger Play uses central force and circular diffusion for powerful momentum; Deer Play applies stretching linear motions to show agility; Monkey Play adopts contraction and jumping rhythms for vividness; Bear Play employs low-center stable postures to present steadiness; Bird Play uses upward stretching motions to create a light, uplifting effect. With differentiated color schemes and unified norms of auspicious cloud elements, circular layout and Five-Elements colors, the design converts fragmented static materials into systematic dynamic visual works.

The outcomes deliver diverse practical values. Culturally, they revitalize the exercise's traditional wellness wisdom and TCM connotations. Academically, they provide a referable visual transformation method for digital interpretation of Daoyin intangible heritage. Economically, they boost Bozhou's cultural-tourism and creative industry development, optimize heritage dissemination, and elevate Five-Animal Exercises into a distinctive local cultural IP.

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APPENDIX A (analogues)

Ключовий еталонний проєкт/Key Reference Projects

Visual outcome(s):

1. IP design for five animals (tiger, deer, monkey, bear, bird)

2. IP action design and dynamic and static illustration design

3. Design of derivative products based on Hua Tuo's Five Animals Exercise

[IP, Illustration] Designed using software such as:Photoshop, Illustrator, Procreate, After Effects, etc



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APPENDIX A (analogues)

Reference for cultural and creative extension design



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APPENDIX Б

чорно-білі лінійні наброски/ілюстрації/ілюстрації з кольоровою версією

Black and white illustration line drawing/IP/colored illustration:



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