

A Study of Character Design Development from Pingchang Puppetry for the New Generation

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Abstract

Pingchang Puppetry is an ancient, handcrafted rod-puppet theatre rooted in the sacrificial rituals of Meishan Wunuo culture, yet it faces growing challenges in engaging younger audiences within contemporary digital media environments. This study focuses on design translation: converting the cultural and visual resources of Pingchang Puppetry into a modern character system that is readable, recognizable, and suitable for cross-media communication. Using field visits and semi-structured interviews with a local inheritor, the study documents role archetypes, costume structures, representative colors, decorative motifs, and performance features, and then restructures them into a usable element framework for character development. In parallel, a comparative visual analysis of well-known animation IP familiar to younger audiences is conducted to extract contemporary preference cues in proportion, facial feature simplification, color organization, and identity-marker reduction. These two sets of findings are synthesized into an operational design strategy and applied to the creation of a serialized three-character IP system. As design outcomes, the study produces modern character concept schemes, corresponding 3D character prototypes, and a preliminary visual identity and logo concept for media dissemination. Expert interviews are further used to refine silhouette stability, symbol clarity, color hierarchy, and expression readability, improving consistency and adaptability across applications. The study therefore delivers both tangible design outputs and a reusable workflow from cultural element extraction to contemporary character generation for intangible cultural heritage revitalization.

Keywords: Puppetry, Character design, Intangible cultural heritage, New generation, Children's design

Introduction

In the era of globalization and digital media, intangible cultural heritage is facing the dual condition of being “recognized” yet increasingly distant from the daily aesthetics of younger generations. As visual preferences are shaped by animation, games, and short-form digital content, traditional folk arts that rely on conventional transmission often struggle to maintain attention and participation. This shift suggests that safeguarding heritage today requires not only preservation, but also effective visual translation that enables traditional culture to be understood and re-engaged in contemporary contexts.

Within this broader background, character design has become a practical and influential medium for cultural communication. Characters integrate form, symbolism, and emotion, and can be adapted across multiple platforms such as illustration, animation, IP branding, and 3D digital assets. For the young generation, character images often serve as an intuitive entry point, making complex cultural meanings more accessible through recognizable visual systems. Therefore, transforming traditional performance imagery into modern character language is

both a design issue and a strategy for cultural continuity.

Chinese puppetry, as an important category of intangible cultural heritage, embodies regional craftsmanship and theatrical aesthetics. However, many local puppetry forms remain underrepresented in modern visual culture, partly due to the lack of systematic methods for extracting, structuring, and developing their character imagery for contemporary media. Without a clear translation path, modernization efforts risk becoming superficial decoration or excessive modification that weakens cultural authenticity.

Pingchang Puppetry is a traditional rod-puppet theatre passed down in Pingchang Town, Xinshao County, Shaoyang City, Hunan Province, and is an important component of Meishan culture. It was included in China’s National Intangible Cultural Heritage Representative List in 2008, reflecting its cultural and historical value. Yet, it still faces difficulties in engaging younger audiences, whose aesthetic expectations increasingly favor refined stylization and digital/3D presentation. Accordingly, this study focuses on translating Pingchang Puppetry character imagery into contemporary character design for the young generation

by systematically extracting and structuring key visual elements, constructing a coherent development pathway grounded in those elements, and ultimately generating modern character concept schemes and 3D prototypes that balance cultural authenticity with current aesthetic preferences.

Research Objectives

1. Research the unique characteristics, cultural and artistic value of Pingchang Puppetry.
2. Adapt the image of the puppetry characters to suit the interests of the current audience.

Related Concepts and Theories

1. Visual-Element Extraction for Puppetry-to-Character Translation

Research on puppetry form and modeling provides a practical basis for extracting and structuring character elements. Wang (2023) frames puppetry modeling as a system shaped by material/structure constraints, exaggeration, and symbolic styling, which can be operationalized into extractable variables such as silhouette, proportion, head-body ratio, joint/limb articulation cues, costume layering, and facial-feature stylization.

Studies that translate puppet-related symbols into contemporary design also show how “elements” become a reusable visual vocabulary. For instance, Chen (2025) applies Minnan glove-puppetry symbols to children’s furniture, highlighting how pattern motifs, color codes, and decorative grammar can be separated from the original medium and re-composed for a new audience and context. This suggests an extraction logic that goes beyond “what it looks like” toward how it signifies (e.g., which forms cue personality, role types, or emotional tone).

In addition, research on ethnic animation history indicates that puppet/folk-art modeling has long served as a reservoir for animated character languages (Zhang, 2016), supporting the legitimacy of translating puppetry aesthetics into modern character concepts rather than treating them as incompatible domains.

Puppetry characters can be translated into modern design by extracting key visual variables. Extraction should focus on both form and meaning. Puppetry is also a valid source for contemporary character design, as shown in ethnic animation research.

2. Digital Revitalization and IP-Oriented Development of Puppetry Heritage

Within ICH scholarship, digitization is often discussed as both a preservation approach and a revitalization mechanism. UNESCO's 2003 Convention emphasizes safeguarding and ensuring respect for ICH while raising awareness and enabling cooperation. (UNESCO, 2003). In practice, puppet-theatre studies note that digital transformation reshapes dissemination routes, audience contact points, and the economics of heritage visibility.

In the context of puppet theatre, Wang and Cheng (2024) argue that “breakthrough” in the digital era depends on platform communication, content adaptation, and contemporary narrative packaging, implying that heritage survival increasingly requires re-formatting into shareable media units and brandable assets. Liu (2025), using Zhangzhou glove puppetry as an example, links “activation” to coordinated pathways such as digital documentation, cultural-product development, and industry-chain integration, indicating that ICH revitalization is often measured by whether it can enter modern cultural consumption without losing cultural grounding.

Design-focused IP research on puppet theatre offers more direct relevance to character development. Li (2022), studying Quanzhou marionette IP innovation, emphasizes that puppet IP design should retain core cultural identifiers while updating form language for contemporary recognition and market touchpoints (e.g., derivative products and media-friendly styling). Guo (2024) further pushes toward experience-driven design by proposing multisensory strategies and derivative-system thinking for Heyang marionette IP, aligning well with the need to produce not only 2D concepts but also 3D prototypes and extended applications.

Digitization supports both preservation and renewal of puppetry heritage. To reach today's audiences, puppetry must be reformatted into platform-friendly content and developed as IP, combining cultural authenticity with modern styling and product/experience applications.

3. New-Generation Aesthetics, User Needs, and Translation Strategy in Character/IP Design

A recurring theme in recent IP-character studies is that younger audiences evaluate IP through recognizability, emotional resonance, and media adaptability, not cultural

significance alone. Li (2025) synthesizes user needs in IP character design under digital conditions, highlighting design priorities such as simplified form for fast recognition, personality readability, and platform-oriented expression. This maps directly onto a “translation strategy” requirement: Pingchang puppetry elements must be reorganized into a character system that works in short-form video, social media stickers, game-like interaction, and collectible/3D contexts.

Color and affect are also treated as controllable design variables. Pan (2025) discusses how color psychology can be used to build emotional resonance in IP character design, implying that color selection should be planned as part of the translation strategy (e.g., warmth/trust cues, role differentiation, mood coding), rather than applied late as decoration. Relatedly, Wang (2025) links color expression in cultural-creative IP to broader cultural communication goals, reinforcing that “palette decisions” can carry both identity and narrative functions.

Methodologically, “cultural gene” approaches provide a structured translation route from culture to design output. Dai et al. (2024) propose a regional cultural-gene analysis method for IP practice that

proceeds from gene extraction → symbol translation → scenario application, offering a useful scaffold for building a stepwise path from puppet character elements to contemporary concept schemes and prototype specifications.

Finally, experience-design literature in HCI and product/interaction design clarifies why “aesthetic fit” must be treated as a strategic design objective: emotional and experiential qualities shape acceptance and attachment (Norman, 2004). In character design practice, clear personality signaling through shape language, pose, and expression is a standard guideline for making characters readable before narrative explanation (Bancroft, 2006).

Young audiences value fast recognition, emotional connection, and cross-platform usability. Translation strategies should prioritize simplified, readable character systems, planned color/emotion coding, and user-centered experience design, leading to modern concepts and 3D prototypes.

The literature indicates that puppetry characters can be translated into contemporary designs by systematically extracting key visual elements (form, proportion, facial style, costume, and

articulation) while preserving their cultural meanings. It also shows that digitization and IP development are essential for revitalizing puppetry heritage through platform-friendly content and derivative ecosystems. Finally, research on younger audiences highlights the need for recognizable, emotionally resonant, and cross-platform character systems that can progress from modern concept designs to validated 3D prototypes.

Research Methodology

This study uses a qualitative approach and treats design as the main research pathway. Data were collected through field visits and semi structured interviews, with a focus on role archetypes, costume colors, decorative motifs, and performance features documented from the perspective of a local inheritor.



Figure 1 Fieldwork Documentation: Interview and on-site Experience of Pingchang Puppetry

Source: By Xie Cheng (2024)

The Pingchang Puppetry consist of four parts: the puppet head, short handles, costumes and robes, and bamboo sticks for manipulating the puppets' hands. During performances, artists manipulate the puppets to portray theatrical characters. The use of color

follows traditional opera, with red symbolizing hope and yellow representing royalty. High-purity colors and large blocks of color are used to enhance visual impact.

This analysis was conducted through qualitative visual analysis of

representative characters from the *Pleasant Goat and Big Big Wolf* and *Boonie Bears* animated series, focusing on proportion, facial features, color systems, and symbolic elements.

The selection criteria include their long-term, continuous content production and intergenerational dissemination, high public awareness and market influence, and typical differences in production techniques and visual styles.

Table 1 Comparison of Box Office Performance of Two Major IP Films in 2024-2025

	First Released	Film Title	Year	Box Office (RMB)
Boonie Bears	2012	Boonie Bears: Time Twist	2024.2.10	1.984 Billion
		Boonie Bears: Rebooting the Future	2025.1.29	8.21 Million
Pleasant Goat and Big Big Wolf	2005	Pleasant Goat and Big Big Wolf: The World Guardians	2024.7.19	9123.4 Million
		Pleasant Goat and Big Big Wolf: Dawn in a Foreign Land	2025.7.26	62.203 Million

Notice: Two of the most recent movies were selected for data comparison. The data in the table comes from <https://piaofang.maoyan.com/dashboard>, which is China's largest movie ticketing website.

Table 2 Cartoon animation character analysis table

Animation	Character Image	Main Character	Gender	Species	Personality Traits
Boonie Bears		Briar Bear	Male	Bear	Brave, smart, has leadership skills, sometimes reckless but kind-hearted
		Bramble Bear,	Male	Bear	Honest, simple, loves food occasionally clumsy but very loyal

Animation	Character Image	Main Character	Gender	Species	Personality Traits
		Logger Vick	Male	Human	Hardworking, persistent, somewhat cunning but often outsmarted by the bears, kind-hearted
Pleasant Goat and Big Big Wolf		Pleasant Goat	Male	Sheep	Intelligent, witty, brave, optimistic, always able to lead his friends out of trouble
		Big Big Wolf	Male	Wolf	Tenacious, smart but often fails, very loyal to his wife, Red Wolf
		Red Wolf	Female	Wolf	Strong-willed, likes to dress up, has high expectations of Big Wolf, but kind-hearted

In this comparative visual analysis, the goal was to extract contemporary character design cues that are recognizable to younger audiences. The analysis was organized around four dimensions used in this study: character proportions, facial feature treatment, color organization, and symbol simplification strategies. For each reference character, these dimensions were described as observable visual

features and then summarized as actionable rules. These rules provide a practical basis for translating cultural elements from Pingchang puppetry into modern character solutions in the subsequent design stage.

Boonie Bears: is a cartoon starring three cute animal bears. The story takes place in a place called Panda Village. The

animation is popular with children for its hilarious storyline and cute characters.

Briar Bear: character proportions emphasize stable body blocks and balanced head body ratio. Facial expressions are moderate and not extreme. Color organization often uses clear body area separation to improve long distance recognition. Symbol simplification relies more on silhouette and color blocking than on added symbols.

Bramble Bear: character proportions are rounder and shorter, with an emphasized belly block. Facial features are softened for a cute tone. Color organization shifts toward warmer and softer relationships. Symbol simplification uses overall contour as the main memory point.

Logger Vick: in an animal character system, human characters rely on clothing structure and accessories for differentiation. Facial feature treatment exaggerates key features to strengthen recognition. Color organization uses clear clothing blocks and contrast. Symbol simplification binds occupational items such as a hat or tools as stable identity markers.

Pleasant Goat and Big Big Wolf: is a comedy cartoon starring a sheep and a wolf. The story is set in rural life and

depicts the interaction between Pleasant Goat and Big Big Wolf. The animation is popular with children for its simple and interesting plot.

Pleasant Goat: proportions emphasize a larger head and a smaller body, with rounded silhouette cues for approachability. Facial expressions are read mainly through eyebrows and eyes, with simplified mouth shapes for fast recognition. Color organization is typically a restrained base with one high saturation accent. Symbol simplification relies on a small number of fixed identity markers that stay in stable positions.

Big Big Wolf: proportions use a thicker torso and stronger body blocks to signal strength, while keeping a clumsy tone. Facial feature treatment strengthens species cues such as the snout and ears, with exaggerated expressions for humor. Color organization uses strong contrast in the face area to reinforce recognition. Symbol simplification often binds one functional prop as an identity anchor.

Red Wolf: proportions tend to be compact and upright to communicate control. Facial expressions are driven by both eyebrow eye shapes and mouth shapes for direct emotion. Color organization uses warm colors as a

dominant signal while controlling the color area. Symbol simplification highlights one fixed identity symbol tied to role and status.

By visually analyzing the design principles of cartoon characters and directly applying them to the development of three IP characters: 1) proportion cues help set a readable silhouette and a stable body structure; 2) facial feature cues guide the simplification of eyes, brows, and mouth to make emotions easy to read; 3) color cues support a clear main and secondary color system, with limited accents; 4) symbol cues reduce details and keep only a few fixed identity markers, such as the hat outline and facial pattern. As a result, each design outcome becomes

easier to recognize and more suitable for contemporary media use.

In the third step, the researchers studied the relevant design theories and the design properties of the relevant characters obtained in the second step, combined with the characteristics of the puppetry, in order to analyze some of the color and design concepts needed for the abovementioned step. From the summary analysis of the figure 5, we can see that generally male and female characters have clothes, and the colors are mainly red, green, blue and yellow. In traditional Chinese opera, the five roles of Sheng, Dan, Jing, Mo and Chou all have their own costumes, accessories and personality traits. The author will use the above data table for subsequent research.



Figure 2 Puppetry characters

Source: By Xie cheng (2024)

In the fourth step, preliminary design is carried out based on the existing information. The costumes for Pingchang puppetry have fixed styles. For example, the python robe represents the emperor and civil and military officials, the armor is the uniform of military generals, the embroidered robe is the court dress of

officials of various ranks, and the palace robe is used for princesses, noblewomen, and other women in the palace. The costumes are made of various materials and pay attention to details, such as the wings of the imperial son-in-law, the feathers, and the fox tail, to enhance the recognizability of the characters.



Figure 3 Costumes for Pingchang puppetry

Source: By Xie Cheng (2025)

Design

After systematically analyzing the culture and character system of puppetry, the researcher transformed the cultural elements from fieldwork data into visual resources suitable for design. The refinement focused on key elements such as facial patterns, hat designs, costume structures, decorative patterns, and representative colors. Through

simplification, recombination, and stylization, these elements retained the recognizability of traditional symbols while also possessing readability and adaptability for contemporary media. Building on this foundation, the research further employed a three characters approach (referencing the character structures of Pleasant Goat and Big Big Wolf and Boonie Bears, both featuring a

stable and easily disseminated series of three core characters) to present the same cultural theme using different visual languages, thus creating a design approach

that moves from traditional character archetypes to contemporary image expression.

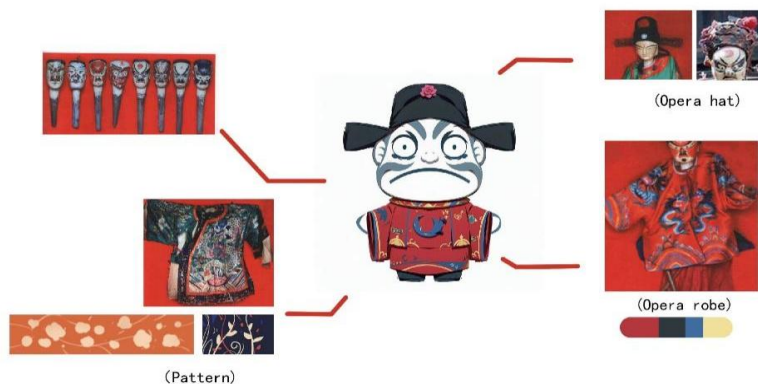


Figure 4 Character A design concepts translated from Pingchang puppetry cultural elements

Source: By Xie Cheng (2025)

Character A is primarily dressed in red opera costume, emphasizing a traditional stage presence; symmetrical facial patterns and stronger lines enhance personality and recognizability; decorative patterns further make the overall design more eye-catching.



Figure 5 Character B design concepts translated from Pingchang puppetry cultural elements

Source: By Xie Cheng (2025)

Character B is primarily blue with red accents, giving it a more modern feel; it retains the structure of the opera hat and facial makeup, but the costume is more modular, facilitating use in emojis and related merchandise.



Figure 6 Character C design concepts translated from Pingchang puppetry cultural elements

Source: By Xie Cheng (2025)

Character C has a more rounded head and body, and richer expressions, increasing approachability; it retains traditional patterns and costume elements, but presents them in a more cartoonish style, suitable for short video dissemination and 3D design.

Two design experts with more than three years of professional experience were invited for interviews. The purpose was to collect expert suggestions on the initial drafts of the three IP characters. Semi structured interviews were used. The researcher presented the initial character drafts and the related cultural

reference materials to each expert. The interview focused on visual clarity, cultural recognizability, color use, symbol simplification, and media adaptability. The researcher took notes during the interviews and summarized the suggestions. Revisions were then made based on the interview feedback.

The two experts' suggestions can be summarized in two points: 1) overall visual design should be simplified—stabilize the silhouette, reduce decoration, keep only key identity markers (e.g., the opera-hat outline and core facial features), clarify primary/secondary color blocks,

and standardize line weight and graphic style to ensure cross-media consistency; 2) expression and character system should prioritize eyes and eyebrows for emotion, simplify the mouth and facial patterns with clear symmetry, and refine the proportions and structure across the

three characters to strengthen series unity and support future extensions.

The researcher made modifications and adjustments to the design based on expert advice and refined the design in greater depth on the characteristics of the puppet show itself.



Figure 7 The modified IP characters

Source: By Xie Cheng (2025)



Figure 8 Pingchang Puppetry Characters 3D Design

Source: By Xie Cheng (2025)

Conclusion and Discussion

Through investigation and research, scholars have reached the following conclusions: Based on field visits and semi-structured interviews, the study summarized and organized the cultural and visual elements of Pingchang puppetry that can be used for character development. It established a clear framework of elements, focusing on character type, costume and hat structure, clothing color, decorative patterns, and typical props. This framework transforms scattered traditional information into a material system that can be directly incorporated into the design process, providing a clear basis for subsequent image translation.

The study comprehensively translates these elements with contemporary aesthetic cues, forming an operational character design and development strategy. Using three IP characters as the core, it completed modern character concept schemes and 3D character prototypes. The three characters are differentiated in proportion, color, and stylization, preserving the core visual identity of puppetry while enhancing readability and extensibility in contemporary media dissemination.

This paper completes the design path from cultural element extraction to serialized image generation, providing a reusable methodological reference and design foundation for the subsequent development of Pingchang puppetry-related images in digital dissemination and cultural tourism applications.

Future research can be further expanded based on the design findings of this study. The three IP characters can be applied to specific media platforms, such as short video animations, interactive web pages, or AR guides, and presentation strategies across different platforms can be systematically compared. The character system and application scenarios can also be expanded, extending the characters from single images into a series of content and derivative designs, exploring their dissemination effectiveness in cultural tourism guidance, education and popular science, and cultural and creative products.

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