Design of Narrative Dynamic Illustration Technique: Luoyang City, China

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Abstract

This paper mainly focuses on the design of dynamic illustration by qualitative research method, 1) exploring the characteristics of Luoyang tourism culture, 2) analyzing the design principles of dynamic illustration, and 3) designing dynamic illustration of Luoyang tourism culture. Based on the theoretical study of dynamic illustration design, we got the characteristics of the visual expression of dynamic illustration, the structure and characteristics of the narrative language of dynamic illustration, combined with the theory of visual perception, cognitive psychology, design psychology, and other related disciplines to study this selection to obtain the law of motion and signal principle of dynamic illustration; for the investigation of Luoyang tourism culture, we learned the historical development and cultural value of Luoyang tourism, according to In the process of designing the dynamic illustration, the Chinese style of illustration and classical color scheme was determined based on the tourism culture of Luoyang and the case study. On this basis, six draft illustrations were drawn. After the questionnaire was distributed to the target group, the two illustrations with the highest popularity were selected and further engraved to complete the static illustration. Among them, the illustration of Paradise Hall received 67.31% of the votes, ranking first. The illustration of Yingtianmen occupied the second place and had 65.38% of the votes. Three experts were invited to analyze the works and give suggestions and

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evaluations. The final dynamic illustration design of Luoyang tourism culture was drawn according to the suggestions and data analysis. The ideas were conveyed through the dynamic visual language of this illustration, thus resonating with the viewers.

Keywords: dynamic illustration, visual expression, artistic expression, Luoyang City

1. Introduction

It is a new and modern visual art that collides and innovates between illustration art and motion graphic design, using the design rules based on illustration art in visual expression and motion graphic production techniques. (Wei Yujie,2021,5) Dynamic illustration is a form of visual expression that combines the language of illustration and motion graphic design based on the flow of time. On the one hand, dynamic illustration should conform to the basic aesthetic principles of illustration design and realize the artistic expression and ideological connotation of the work through various techniques of digital illustration; on the other hand, dynamic illustration should follow the communication rules of network vibrant pictures, otherwise, it is against the original intention of dynamic illustration creation.

The dynamic illustration combines diverse visual images and various forms of movement, creating a lively and exciting space for audiences to interact with each other. Under the influence of the development of the market economy and consumer society, the interactive nature of new media has also pushed design to become a popular art, and the cultural concept, aesthetic style, and creative process contained therein have become more open and more accessible. As a result, the public is no longer willing to accept overly rational and obscure visual expressions but tends to pursue a more accessible and entertaining visual experience. (Li Mingyuan,2022)

The advancement of new media technology has brought opportunities and challenges to developing and forming dynamic illustrations. First, in the current complex information

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communication context, multiple factors must be considered to make vibrant illustrations better integrated with the latest technology and applicable to different communication media. The significance of Luoyang's cultural heritage lies in the sustainability of both people and objects, which requires people to understand the magnificent beauty of Luoyang culture and seek multiple communication channels. As an emerging industry in the information age, dynamic illustration has vast room for development. It is an essential medium for passing on Chinese culture and an important carrier for achieving cultural development. (Cheng Chen, 2023) As the cost of dynamic illustration production becomes cheaper and cheaper, the creativity and content of illustration become more and more critical. Therefore, when inheriting Luoyang's traditional culture, the relevant departments need to find the correct position, enrich the content, take advantage of the convenience of the Internet, and aggregate the audience so that the traditional culture of Luoyang "out of the circle" does not only stay in the stage of results but let the dynamic illustration and standard culture integration to achieve "1 + 1 $>$ 2 " effect.

2. Research Objectives

1. To study and analyze the current situation and design principles of dynamic illustration.

2. To study the cultural characteristics of Luoyang tourism.

3. To design dynamic illustrations of Luoyang tourism culture.

3. Literature Review

Regarding the design research of narrative dynamic illustration, "Research on the Visual Performance of Dynamic Illustration" is a complete summary of vibrant illustration's own information-carrying, visual performance, and content dissemination from the perspective of the audience's interesting psychology (Wei Yujie，2021：4-7.); "Research on the Visual Performance and Application of Dynamic Illustration" is a study on the visual performance and design application of dynamic illustration. This selection is studied based on the

fundamental theories of illustration design and animation design, combined with the theories of visual perception and other related disciplines. The graphical representation of dynamic illustration in design is comprehensively analyzed regarding its communication form, application area, and function (Li Mingyuan，2022：41-51.) These two results are based on different perspectives to explore the dynamic illustration's performance characteristics and have a specific reference value.

In recent years, with the extension of the application field of dynamic illustration, the research scope has been extended to science education, games, H5 advertising, vibrant posters, APP applications, and other fields. The Study on the Application of Dynamic Illustration in Interactive Storytelling Products (Li-Xuan Wang，2021), on the other hand, analyzes and discusses the application of dynamic illustration in interactive narrative products. The literature review finds that although the functionality of vibrant illustration is deepened, it is only briefly described.

4. Scope of Research

4.1 Research area

The theme is the narrative dynamic illustration technique design: Luoyang City, China. This paper takes the visual performance of dynamic illustration as the research object and uses Luoyang tourism culture to conduct research and design. By analyzing the visual composition elements and artistic expression of vibrant illustration, the visible expression of dynamic illustration is systematically discussed, and the study area is in Luoyang, Yingtianmen Ruins Museum, for visiting research and analysis.

4.2 Scope of Population and Sample in the Research

The sample group in this research was drawn from a purposive random sampling from the research population as follows:

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Tourists: tourists who are attracted to Luoyang by the culture of River Luo and come to visit the city;

Locals: locals who live in Luoyang, near the tourist attraction areas. They are the ones who grew up here, have been influenced by the Helo culture for a long time, know the tourist spots like the back of their hand, and are the ones who know the place best. Find out their views and suggestions on the traditional culture of Luoyang.

Local business people: Investigate the expectations and suggestions of local business people about Luoyang, a famous tourist city, and conduct a comprehensive analysis and study of these.

Staff: Staff who manage and maintain speaking points in local tourist resorts and supervise all aspects of Luoyang's cultural heritage, including those related to cultural tourism.

Dynamic Illustration Design Researchers: Specializing in digital media, they have a lot of experience researching and designing dynamic illustrations and dynamic posters, with which communication and discussion can help develop innovative, vibrant illustrations.

4.3 Time

September 21, 2021 - April 22, 2023

5. Research Methodology

This research uses a qualitative research approach as follows;

1. investigated the narrative language, visual expressions, and design principles of dynamic illustration

2. studied an overview of the cognitive psychology of dynamic illustration and analyzed the multiple applications of vibrant illustration

3. Studied the historical and cultural characteristics of Luoyang and visited the tourist attractions in Luoyang

4. Drafted the first draft of the illustration and designed the dynamics

5. Purposefully selected a sample of people for a questionnaire to collect data and information and discussed opinions and suggestions with experts

6. Improve the design plan according to the collected information and create narrative dynamic illustrations

7. Draw conclusions, report the results, and publish the research findings

6. Research Results

6.1 Status of dynamic illustration and design principles

Vibrant illustration is an extension and innovation of traditional illustration art, combining animation and new media technology. It not only inherits the aesthetic characteristics of static illustration in visual presentation but also greatly expands the information volume of the picture. Static illustration is limited by the scope of the picture, and the information capacity presented is more limited. When the amount of information to be given is too large, only a certain amount of information can be removed, or the length of the picture can be increased to provide all the information. In contrast, dynamic illustration can break through the visual limitations of the size of the picture, and the picture can no longer be limited by space and time. It can be presented through various changes in perspective. Dynamic illustrations can convey more information visually and clearly within the same display area than static illustrations.

The primary purpose of illustration design is to promote and attract the attention of a specific group of people to view the illustration, and the process of considering the illustration corresponds to the four core systems of the human cognitive process. (Zhang Geng,2022,135)

First, the viewer perceives the image visually. After the perception, the information elements will enter the control system. The primary visual elements in traditional static illustration are text, graphics, patterns, etc., while dynamic illustration adds graphic movement and flicker. On top of these, the human eye is more sensitive to dynamic objects, and emotional elements can quickly attract the viewer's attention. Active elements can soon attract the viewer's attention. Let vibrant illustration appear to the public in a diversified and multi-sensory form, fully mobilizing the viewer's perceptual system to obtain and understand the information in the picture. Designers need to comply with the laws of human cognition in cognitive psychology so that the design results can attract the viewer's attention and conform to the mainstream aesthetics, but also quickly convey the information elements on the illustration to the outside world, only in this way can bring the viewer a better experience.

6.2 Luoyang Tourism Culture Characteristics

Luoyang is the source of Chinese civilization, with a developed economy, an open and tolerant culture, and a flourishing literature. It was one of ancient China's political, economic, and cultural centers for a long time. Luoyang has a rich cultural connotation as a famous capital city in ancient China during the Sui and Tang dynasties. The city's cultural products, landscape, architecture, and lifestyle are expressions of its unique culture. The city is the container of culture, and culture is the town's soul. The big container of Luoyang has rich and colorful historical and cultural resources. It is the heritage of ancient Chinese civilization and the witness of the city's history. Yingtianmen, as the main gate of the imperial city in the eastern capital of the Tang Dynasty, used to have both practical and cultural functions. Nowadays, the valuable function is gone, but it still conveys irreplaceable blood for the sustainable development of Luoyang City, and it is officially these relics and cultures that Luoyang City's historical and cultural resources show their unique value. As the ancient capital, Luoyang's historical and cultural value is the core of Luoyang's artistic value.

From the communication theory, tourism destination image is the cultural crossing and communication between different cities, countries, and regions in information dissemination. Communication has a two-way nature, leaving the audience of communication, one-sided self-image communication is not meaningful. Tourism activities have unique characteristics; in tourism destination image communication, the content perceived by tourists will deviate from the content projected by the tourism image-shaping party. Based on the two-way nature of tourism image communication, this paper focuses on the image shaped by dynamic illustration design, which can be disseminated efficiently so that knowledge can be transmitted from person to person. Because visualized information is more likely to be shared, individual sharing will have a subjective influence and lead to deeper discussions.

6.3 Innovative design of dynamic illustration of Luoyang tourism culture

During the sketching stage, the author tried to understand and think about the materials in hand from different perspectives. The idea of bringing myself into a tourist's perspective and telling the past through old things came to me. The majestic Yingtian Gate, Tiantang and Mingtang, the ancient buildings, and so on, which are the characteristics of Luoyang tourism, are brought back into the picture, and their stories are told in a narrative way that is both imaginative and logical. The sketch is shown below:


6   5   4

3	2	1
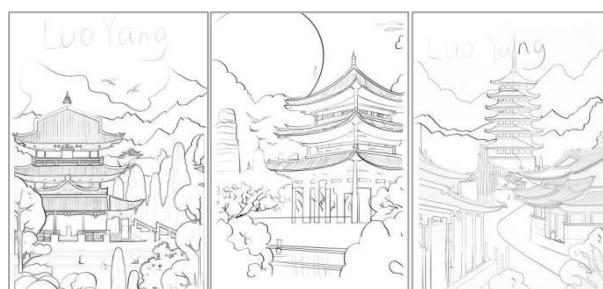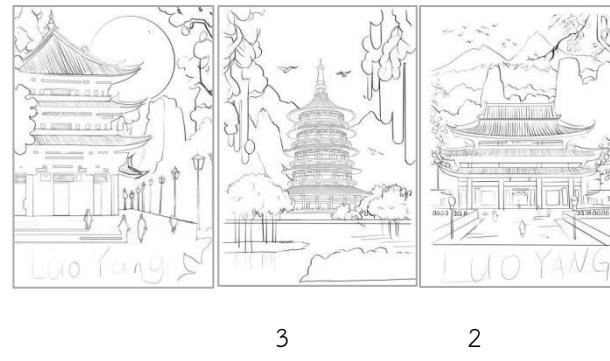
Figure 1: Draft design of dynamic illustration of Luoyang tourism culture

To understand the first draft's applicability to Luoyang's tourism culture, a questionnaire was created to investigate the satisfaction values of the draft for men and women of different ages. The results are shown in the chart below:
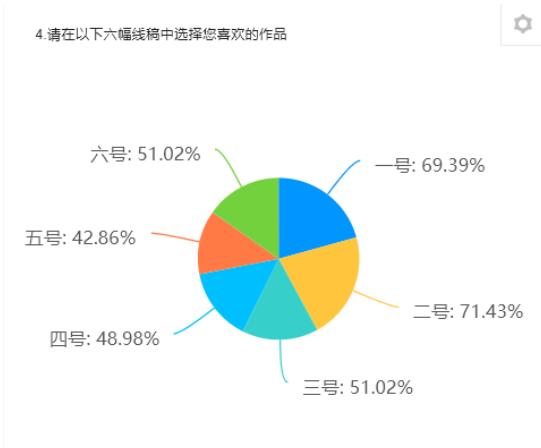
Figure 2: Favourite works **Source**: Questionnaire APP

The total number of people who effectively filled out the document survey for this research was 52. As shown in Figure 2, No. 1's work favorite is 69.39%, No. 2's work favorite is 71.43%, No. 3's work favorite is 51.02%, No. 4's work favorite is 48.98%, No. 5's work favorite is 42.86%, and No. 6's work favorite is 51.02%. The fan chart shows that No. 1 and No. 2 are the most popular, and No. 4 and No. 5 are less popular.

Illustration is a visual language with literature; what to express and how to express it is a question every illustration creator must consider. The design of the dynamic effect of illustration provides a new path of expression for illustration content presentation and a new carrier for the creator's spirit and emotion. In the creation of the dynamic illustration design of Luoyang tourism culture, the harmony of the narrative picture is mainly developed by designing the main building to let the scenery as a companion movement, supplemented by the dynamic design of rich and exciting ambient elements to tell a relatively complete and vivid picture, to realize the effective transmission of information, to realize the emotional linkage between the creator and the viewer, and to bring a more graphic effect to the audience visually. The dynamic screenshots of dynamic illustration are shown below.

Figure 3: Luoyang Yingtianmen's dynamic illustration design

Figure 4: Luoyang Tiantang dynamic illustration design

As shown in Figure 3, with the direction of the crowd, the line of sight is highlighted on the Yingtianmen building, spring flowers in full bloom, the petals slowly fall with the wind, adding more poetry to the picture, making the image more vivid and lively, so that people are not yet full of interest in the poster.

As shown in Figure 4, birds fly into the picture from the edge and gather around the central building, bringing the viewer's eyes to the main object to highlight the theme. The leaves sway with the wind and slowly drift down to make the picture more vivid and exciting. With different dynamic effects to create a different atmosphere texture, more reflects the rhythmic balance of the entire vibrant poster.

Dynamic illustrations must be displayed in a particular medium, considering that vibrant posters are very different from print posters, so the medium used for display is also completely different. The storage size of dynamic illustrations is much larger than static illustrations; most of the standard vibrant illustrations in 25 frames - 150 frames, each length of about 10 seconds - 20 seconds, which has specific requirements for the network speed; if the network speed is not smooth when playing affects the viewing, then the elaborate design is also in vain. The exhibition needs to be clear and smooth, requiring a networked computer through the projection technology in the exhibition hall for loop playback or tablet computer network playback. The dynamic illustration will be made into a QR code, and visitors can watch the vibrant illustration of Luoyang tourism culture by sweeping it with WeChat, which is more convenient and suitable for business promotion.

7. Conclusion

7.1Status of dynamic illustration and design principles

Through studying the current situation and design principles of dynamic illustration, it is concluded that the most significant difference between vibrant and traditional illustration is that its development depends more on technical means and the support of

communication channels. When creating dynamic illustration, it is necessary first to consider the expression form of static illustration and flexibly use and handle the relationship between graphics, text, color, and other visual elements to support the artistic expression of dynamic illustration.

Based on the current application status of dynamic illustration and the evidence of various applications, it is concluded that vibrant illustration has the function of entertaining the public, guiding the audience, and relieving emotions. Dynamic illustration is beginning to focus on human emotional experience, reflecting the "human-centered" design trend. As vibrant illustration is combined with more design forms, it also deepens its application function. Therefore, dynamic illustration has a broad market prospect and application value, which is worthy of our continued exploration.

7.2 Luoyang Tourism Culture Characteristics

Through the study of Luoyang tourism cultural characteristics to understand the history and culture of Luoyang, after the field investigation check, see the majestic Yingtianmen and paradise Hall of Fame, feel the unique charm of the thirteen ancient dynasties of Luoyang. Luoyang, the thousand-year imperial capital and peony flower city, has a deep historical heritage and cultural characteristics, and only the characteristics embodied through culture can show its literary nature and not be imitated. Dynamic illustration design with connotation and quality can bring new breakthroughs to tourism development and reflect the cultural beauty of scientific and intelligent tourism. Through the change of concept, the exploration of artistic creativity, the design of dynamic illustration, focus on the excavation of Luoyang's deep historical and cultural deposits and unique natural ecological resources, and the integration of cultural creative elements with Luoyang characteristics, to develop a dynamic illustration design with local solid characteristics of Luoyang and adapt to meet the market's favorite. When the natural landscape cannot fully present the rich connotation of a city, the humanistic Luoyang becomes the core competitiveness.

7.3Innovative design of dynamic illustration of Luoyang tourism culture

Through the innovative design of a vibrant illustration of Luoyang tourism culture, six drafts were designed, five were selected through questionnaires, and 52 people voted effectively. Among them, 71.43% of the votes were cast to illustrate Paradise Hall, which ranked first. The vote rate for the Yingtianmen illustration was 69.39%, ranking second. The theme was interpreted through different entry points. While ensuring the integrity of the single illustration as a whole, it also provides the relevance of multiple illustrations so that readers can easily experience Luoyang's tourism culture from different perspectives and achieve the purpose of spiritual communication and emotional resonance.

Understand that you can create a different sense of space by shifting flat graphic elements in other ways. Morphing visual elements can achieve unexpected interest. Adding a temporal dimension to dynamic illustration makes it easier to display spatial information and direct the viewer's eye to highlight critical information. Creating narrative dynamic illustration design improves the knowledge of the design principles of vibrant illustration and provides a deeper learning of the structural balance in graphic design. The journey of dynamic illustration in illustration creation and excellent examples changed the inherent impression of illustration. Through the discussion with the three experts, when designing for vibrant illustration, we chose to view the works through video, GIF, and scanning QR code. The development of technology provides more possibilities and new opportunities for art creation, and the adoption of new technology for improvement and innovation is more conducive to communication and adds interest. Using multiple materials and mediums of display avoids the shortage of innovation. With the birth of major platforms, the audience has a broader understanding of Luoyang's charm.

In conclusion, dynamic illustration, leveraging technology and communication channels, significantly differs from traditional illustration by focusing on a blend of static elements like graphics, text, and color for artistic expression. Its application in Luoyang's tourism culture, as evidenced by famous illustrations of landmarks such as Paradise Hall and Yingtianmen, highlights its potential to engage and educate audiences about the city's rich

historical and cultural heritage. This approach aligns with the 'human-centered' design trend, offering entertainment and emotional resonance. The innovative use of various mediums, including videos, GIFs, and QR codes, not only enhances the viewer's experience but also broadens the scope for artistic creativity and audience engagement, underscoring the significant role of dynamic illustration in modern design and cultural representation.

8. Recommendation

Dynamic illustration is a complex creative process that requires a combination of graphics and text and a combination of picture and sound to present to increase the effect of business promotion. The perfect combination of text and graphics design illustrations with a sense of design, balanced images, and visual impact. The dynamic illustration design of Luoyang's tourism culture adds the concept of time and space to the static poster so that the original static graphics have a vibrant, emotional effect. As a new form of propaganda overly dependent on digital media communication, it can only achieve the desired effect on the screen through the movement of graphic elements to visually reflect the sense of space.

Of course, there are still many shortcomings in the research process, and they also face some problems and difficulties, such as few works for dynamic illustration research and a lack of more systematic theoretical support related to vibrant illustration. At the same time, there are relatively few excellent cases to demonstrate, so the research on this topic may not be rigorous enough. Despite the difficulties, the theories and studies of previous authors have successfully guided a clear research direction. It is hoped that this preliminary study will provide more reference methods and ideas for other creators in the process of creation and application of dynamic illustration and the subsequent research of vibrant illustration so that creators can create more dynamic illustration works that meet the aesthetic needs of the public, and thus provide some help for the development and promotion of vibrant illustration.

The transformation from traditional to dynamic illustration is a successful step in design. The development of technology has made more and more powerful software and more and more colorful design forms. The core of illustration design still lies in promoting commercial advertising, and we need to keep looking for new ideas to let the art of illustration design continue to develop and progress and create a new era. Luoyang scenic spots can release dynamic illustrations on online social media platforms to trigger discussion on the topic so that viewers can capture active elements to deepen their understanding of the images step by step and have a deep impression of Luoyang, completing a journey from the eyes to the heart, and generating strong interest and desire for Luoyang by watching dynamic illustrations.

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