Model Construction and Research of Graphic Originality Influencing Factors in Film Poster Design

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Abstract

Film industry is an important art form of cultural output, and creative effect has high artistic value in the poster design of it. Film poster design is mainly based on graphic originality, and in the design process, the artistic expression form of its graphic design directly influences the commercial value and artistic value of film works. Therefore, to further research the relevant factors influencing graphic originality design is also an important direction to improve the design effect of film posters. By constructing mathematical models and matrix methods, the relevant variables in the design process are used as measurement dimensions in this paper to propose the corresponding study mode of influencing factors for the creative design. This is taken as the reference template for constructing the model, to provide a theoretical reference for the design of film posters.

Keywords: Film Posters, Graphic Originality, Influencing Factor.

1. RESEARCH BACKGROUND

1.1 Literature review

In the process of expanding the film market, the visual communication effect of film posters as a necessary condition for promoting the film works has a great influence. Especially in the graphic design of film posters, the creative concept, culture orientation, and visual effect are not only the expression form of the commercial value of film posters, but also the extension of its artistic value (Dou, 2014). So it is of practical significance to explore the influence factors of graphic creativity in the integration and development of multi-culture. Meanwhile, it also provides a supporting theoretical template that can be referred to, so as to improve the efficiency and effectiveness of film poster design (Sun, 2014). In particular, as a concrete manifestation of cultural output, the originality of films also covers the understanding and expression of film culture (Kuang, 2015). Therefore, it is necessary to evade the adverse influence factors in the process of design to provide the necessary conditions and foundation for giving full play to the artistic effect of film posters.

1.2 Research purposes

At present, China's film market has been developing rapidly, and the actual function and effect of film posters have become an important factor affecting the box-office saturation (Deng, 2015). Unique originality of film posters is often an effective way to directly attract the audience. For this reason, the study of the influence factors of graphic ideas in the design of film posters is also an important direction for improving the design effect of film posters (Xiao and Dong, 2014). Based on the analysis of the matrix type, this paper analyzes the influence factors of graphic ideas in the design of film posters, and determines the relevant factors that influence the creative effects by constructing mathematical analysis models, so as to lay reference basis for the design of film posters and provide theoretical foundation for the development of film poster design.

2. FORMATION SCOPE OF GRAPHIC ORIGINALITY IN THE DESIGN OF FILM POSTERS

2.1 Formation of graphic originality in the design of film posters
Film posters are necessary tools to promote the theme of a film, and the design of graphic originality is also an important way to highlight the theme and attach cultural value (Xing, 2014). The formation of its design originality is accomplished mainly through the imagination, association and scenario of the designer. First of all, the theme of a film is the first creative direction, to which designers in the specific space of their specific topics can give full play to creative elements to arrange the content of the poster while using their hypothetical ideas to complete the construction of a new form of artistic expression (Zhang, 2011). Secondly, in terms of association, it mainly describes the film background or creative elements by extending the film storyline and expanding the main style of the film. As shown in Figure 1, with the protagonist's arms embracing the sky in the poster of Shawshank Redemption and the sunshine expressing the longing of the hero to the outside world, the subject of the film is highlighted, and the originality design is also completed in the expression of the plot. Finally, the originality direction of scenario representation is the design of triggering contact made through the title of the film, and the film itself in certain title will have a certain appeal to the audience; designers need to seize the audience's concerns, and expand the formative emphasis of the integrating point of the originality design and the audience's thought. In film The Day After Tomorrow, audience's attention may focus on the real effect of the natural disaster, and the theme of the film also tends to present the corresponding visual effects; therefore, the main poster of the film takes the blizzard-stricken scenario as the main direction of originality and adds 3D dynamic design to enhance the cultural output form of the originality space dimension and the design philosophy.

![Figure 1. Shawshank Redemption and The Day After Tomorrow Film Posters](image)

**2.2 Forming elements of graphic originality**

The design of the poster itself is an important way to attract the audience, and the design itself must be innovated by the category of cultural understanding and achieve the innovation standard on the visual effect. The three most important elements are: novelty, uniqueness and shock power.

First, novelty itself is an important way to attract potential consumers and to expand the film publicity, and the creative space of sensory effects can attract the audience's thinking and emotional resonance from different dimensions (Yi and Feng, 2013). As shown in Figure 2, the film poster of The Legend of 1900 only takes the actor's back as the original drawing element, leaving the audience with a larger room for thinking and imagination space for imagination. This design concept itself is also an effective arrangement for graphic originality. Secondly, in terms of uniqueness, it mainly refers to whether the film poster originality can effectively make the extension of originality toward the thinking direction of the film theme; cultural connotations, story plots, way of shooting, etc. can be taken as the originality direction of its graphic design. For example, the poster of Avatar highlights the fantasy background of the protagonist living on another planet and leads the audience's view by presenting the stalemate between human and aliens, so as to emphasize the thinking dimension and imagination space of the originality design (Liu, 2013). Finally, analyzed from the shock power, whether the audience's first perspective
can be attracted by the film is the key problem that originality needs to consider. When the shock effect touches the audience's mind, its originality can show the film's theme in a profound way; otherwise, the appeal of the film will be reduced.

**Figure 2. The Legend of 1900 and Avatar Film Posters**

### 3. DEFINITION OF THE STUDY PARAMETERS OF INFLUENCING FACTORS

#### 3.1 Cultural philosophy

In the consideration dimensions of cultural concepts, the first thing to define is the designers’ understanding of film culture. If there is a gap between the thinking direction of film culture of a film of the design director and the film review direction or cultural guidance direction of the film, the design direction will be prone to deviate. On the contrary, if the cultural concepts tend to be similar, the graphic design and originality direction of its film poster will meet the production requirements. Secondly, the definition of the consideration scope of cultural concepts needs to be based on the social culture of the mainstream market demand of the film (Yuan, 2016). At the beginning of its design concept, the originality itself is not acceptable for the mainstream market assuming that it conflicts with local culture or causes barriers to cross-cultural communication. Based on the definition of the two dimensions of the above considerations, four reference variables are designed for the interpretation of cultural concepts in this study, respectively: design concept, design language, design requirements and cross-cultural communication. Firstly, design concept refers to the interpretation and understanding of the social culture of the local market during the release stage of the film. Secondly, design requirement refers to the understanding scope of whether the graphic originality conforms to the local culture. Thirdly, design language refers to whether the way of expression of the graphic symbol in the film conforms to the cultural property and output mode of the film itself. Fourthly, cross-cultural communication refers to whether there is misleading or deviation in the direction of graphic origination in the mainstream consumer market, as shown in the table below:

<table>
<thead>
<tr>
<th>Level variable</th>
<th>Cultural ideas</th>
<th>Team factors</th>
<th>Production requirements</th>
<th>Video type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary variable</td>
<td>design concept</td>
<td>Structure ratio</td>
<td>Video main scene</td>
<td>Two-dimensional design</td>
</tr>
<tr>
<td>Design language</td>
<td>Text symbols</td>
<td>Lead starring</td>
<td>3D design</td>
<td></td>
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<tr>
<td>Design requirements</td>
<td>Image information</td>
<td>story plot</td>
<td>Integrated design</td>
<td></td>
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<tr>
<td>Intercultural Communication</td>
<td>Visual communication</td>
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#### 3.2 Team factors

In the process of film poster design, there are many types of propaganda posters under the main poster, which have the influence factors of the subset variables. Most film posters are not done by a single designer alone. In particular, the four major design points, text, graph, image and ratio, usually require different designers to
synthesize the previous design experience and comprehensively evaluate the design method and the concept communication. Therefore, to analyze the factors of graphs and images has to take the team factor into consideration (Li and Yang, 2016). This study designs four comprehensive variables in the definition of the team factor, respectively: structure proportion, text symbol, image information, and visual expression. First of all, the creative image factors in the structure proportion are mainly concerned with whether the proportion of image information in the presentation mode conforms to the design sense. Secondly, the originality direction of the text symbol as the auxiliary demand of the graphic design of film posters has a certain relationship with the graphic originality, which can be used as a supporting reference variable. Thirdly, the standard for the definition of image information is the standard of measurement based on the originality sense. Finally, visual communication mainly refers to whether the film information achieves higher artistic expression in the creative process.

3.3 Demand of producers

Graphic originality in film poster design needs to consider the market demand and production requirements; assuming that the originality design direction is in line with the market rules as well as the mainstream media, but does not meet the demand of the filmmakers, such originality design itself is difficult to dock with the audience. In recent years, the originality demand of film producers for poster design mainly involves three main aspects: the main scene of the film, starring and storyline (Li, 2010). These three design elements are also the key points of current film poster design; therefore, no matter how to expand the thinking mode, the originality needs to be done around these elements, as the adaptability of the graphic originality itself will be relatively weak without them. In the main scene of the film, the fusion and extension of its originality design is relatively small, while the protagonist and story plots are unchangeable design elements. As a result, in the comprehensive evaluation of the above three elements, the originality scope has the relative strong constraining force and can be used as important influencing factor for the definition of parameters.

3.4 Film type

Film type is a key influencing factor to the graphic originality design of film poster; when the design elements in the process of poster design are full, different styles of template can be designed for the poster, and creative extension and expansion can be made based on the value orientation of different audience. There is need to distinguish and define the type of films, which in its release phase is divided into: literary, action, war, emotion, ethics, science fiction, animation, drama, comedy, tragedy, etc. Film type has been set as the design direction of fixed thinking, and if the originality itself is out of this defined category, the final effect will deviate from the design theme. This study designed three levels of assessment criteria for influencing factors in the creative space of film types: 2D design, 3D design and comprehensive design. First, 2D design is the analysis of the influencing factors of originality conception of animation film posters, under which design elements of 3D scenes cannot be integrated; therefore, there are certain limits in the extension of the originality (Liu and Bao, 2016). Secondly, 3D design is the evaluation direction of the reference variables based on the film type, especially IMAX films. Poster design of 3D films needs to highlight the visual effect or shock power of the film, and specific requirements of space visual effect should be put forward for graphic design, which can be measured as an influencing factor. Finally, comprehensive design elements refer to the cultural originality extension direction of different film types. Classification of film types can be regarded as the reference for fuzzy types, while comprehensive design direction is the specific indicator for evaluation, which can be regarded as cultural definition or constraining factor of film type.

4. CONSTRUCTION METHOD OF GRAPHIC ORIGINALITY INFLUENCING FACTOR MODEL

4.1 Selection of influencing factor matrix

The results of graphic originality in the film poster design can be clearly defined by multiple observation indicators, including audience, film reviewer, producer, media, theater, the Ministry of Culture, etc. All reference variables involving subjective judgments are expressed in the observation matrix as follows:

\[ S_{ij} = [s_{i1}, s_{i2}, ..., s_{in}] \]  \hspace{1cm} (1)

where \( i \) is the primary variable, \( t \) is the time limit, and \( n \) is the secondary reference variable interval. Among the influencing factors, the originality sensory evaluation of the optimized results can be conducted based on \( t+1 \),
\( K_{t+1} = H_{t+1} S_{t+1} \) + \( \omega_{t+1} \) \hspace{1cm} (2)

In the formula, the value range of the concern \( K \) can refer to the corresponding change of matrix \( S \), and \( H \) represents the time dimension of the market feedback situation from the release of the film to the showing of it.

### 4.2 Matrix mean value timely manner and reference value

As there is a time variation interval for periodic changes in matrix \( S \), such as audit by the Ministry of Culture or change of film release information, etc., set \( \gamma_t \) as the corresponding variation region in the originality variable, and the situation of \( \gamma_t = 1 \) can be regarded as the stable factor without significant fluctuation. The stable value calculation equation is:

\[ S_{t+1} = \varphi_{t+1} S_t + \gamma_t \] \hspace{1cm} (3)

In the influencing status where multiple factors are similar or close to each other, set the optimal estimated value of \( S \) as \( \hat{S}_t \), but its originality indicator does not obtain the immutable parameter setting; as the information of its freedom degree of the vector series is high, it is necessary to make assumption of the state vector, which is set as \( S_{t+1} \) temporarily, and its calculating formula is:

\[ \hat{S}_{t+1} = \varphi_{t+1} \hat{S}_t \] \hspace{1cm} (4)

### 4.3 Graphic originality factor model and verification method

The verification mode of the originality dimension measurement value \( K_{t+1} \) of the audience's focus may not be taken as the approximation of \( \varphi \), and variance can be used for the evaluation to introduce the Kalman filtering gain for the optimized research, with the following formula:

\[ \hat{S}_{t+1} = \hat{S}_{t+1/t} + K_{t+1} (\hat{S}_{t+1/t} - H_{t+1} \hat{S}_{t+1/t}) \] \hspace{1cm} (5)

\[ K_{t+1} = P_{t+1/t} H_{t+1}^T (K_{t+1} P_{t+1/t} H_{t+1}^T + R_{t+1})^{-1} \] \hspace{1cm} (6)

In the formula, \( P \) is the reference value of the secondary variable, and \( R \) is the analysis result of the specific variable. In the above calculation, a preliminary estimate of the feasibility and influence factors of the originality can be made, and it should be verified; the verification formula is:

\[ P_{t+1/t} = \varphi_{t+1/t} P_{t+1/t}^T + Q \] \hspace{1cm} (7)

\[ P_{t+1} = (I - K_{t+1} P_{t+1/t}) P_{t+1/t} \] \hspace{1cm} (8)

In the process of verification, \( Q \) represents the acceptance degree of the originality factor within a certain period of time, and \( \varphi \) is the variation range for measuring this time dimension. Finally, the influence direction or influence degree of its graphic design on the originality effect can be obtained.

### 5. Model Application Analysis of Graphic Originality Influencing Factors in Film Poster Design

The factor analysis of the corresponding reference variables in the calculation formula should be based on the measurement standard for the corresponding expression forms of the four primary variables to determine the proportional weight of the influencing factors. As such kind of influencing factor model is still at the research stage, the concrete influencing factor analysis still needs to be analyzed in a comparative way through empirical study; therefore, in the process of research, the audience's demand and producers' demand can be taken as the basic design demand, and the practical application effect of the evaluation model can be audited by the film
marketing effects finally. In addition, the study did not design variables for designers' psychological change or artistic foundation, etc., and the influencing factors of artistic creativity in this respect were difficult to evaluate. Relevant studies need to be done for further improvement to fully measure the relevant factors of the originality effect. In addition, economic factors were not considered as a measurement standard. In fact, the average profit of the design team in the film poster production industry in Europe and America is 70% higher than that in China (Luo, 2016). This potential factor may indirectly affect the designers' income as well as the investment for the cultivation of the designers; however, as its inner link is lack of relative basis and measurement standard, this study does not involve it. Analyzed from the real output efficiency, the rapid development of cultural originality industry is closely related to the economic support; without the investment of a large amount of supporting funds into the originality of film poster graphic design, the development pace and work efficiency will be hindered to some degree (Zhang and Liu, 2017). Therefore, a more complete system evaluation model is needed to provide a better measurement standard for the influencing factors of graphic originality.

6. CONCLUSIONS

By analyzing the relevant elements of the design of film posters in the process of forming the originality idea, this paper summarizes the corresponding variables that affect the graphic originality, including four definition scopes in the primary variable: cultural philosophy, team factor, producer's demand and film type. At the same time, 14 secondary reference variables were designed in the primary variables, and the related content of influencing originality factors was analyzed through the construction mode of matrix S. It summarizes the model and verification method of graphic originality factors, but the current research model is still in the experimental stage and should be corroborated by a lot of empirical evidence. In particular, factor orientation judgment should be conducted on the subjective factors of designers and the macro categories of economic support of film industry, so as to obtain more accurate influencing factor model design and use such model to improve the judgment standard for the influencing factors of graphic originality influence in film poster design, and provide a better measurement system for film poster design to achieve higher standards of film poster design and offer cultural support for the further development of the film industry.

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