

Design Path of Cultural and Creative Products with Regional Characteristics in Macao Based on Semiotics

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Abstract: Purpose: Under the background of the integration of culture and tourism , this paper takes the local culture and tourism resources of Macao as the research object, and constructs the design method of regional characteristic architectural cultural and creative products from the perspective of semiotics , so as to design cultural and creative products with Macao characteristics and promote the high-quality development of Macao's cultural and tourism industry . Methods: Firstly, the basic theory of semiotics is explained and the constituent elements of visual cultural symbols are analyzed; then the cultural and tourism resources in Macao are sorted and screened, and the most recognizable and artistic projects are selected; the graphic elements of visual cultural symbols are extracted from the two aspects of signifier and signified of semiotics, and the graphic elements are redesigned by borrowing and metaphor to form new signifiers and signifieds of symbols and apply them to the design of cultural and creative products . Conclusion: The design practice plan shows the effectiveness of using semiotic methods to design regional characteristic architectural cultural and creative products in Macao ; this method can be used to design rich and diverse cultural and creative products, realize the dissemination of regional culture, and provide a new path for the development and utilization of local characteristic cultural and tourism resources

Keywords: Semiotics; Visual Cultural Symbols; Regional Characteristics; Product Design

1. INTRODUCTION

1.1. Research Background

According to the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area (2019), one of the development strategies of the Greater Bay Area is to build an "international cultural and creative base and explore new models of cultural and creative cooperation". The development of the cultural and creative industry in the Greater Bay Area has attracted much attention. The current pattern of moderately diversified economic development in Macau, the transformation of the diversified operation of Macau's gaming industry, and the coordinated development of the Guangdong-Hong Kong-Macao Greater Bay Area have provided diversified and excellent opportunities for the development of Macau's cultural and creative industries. The Macau government pointed out in the

"Macau Special Administrative Region Urban Master Plan " that one of the city's development strategies is to establish Macau as a world tourism and leisure center. As a creative carrier of cultural communication, cultural and creative products play an important role in cultural communication in the strategy of establishing a world tourism and leisure city. In the process of development, Macau has derived a city culture with regional characteristics in view of its historical particularity. From the perspective of the culture generated by the city of Macau itself, since Macau has experienced several fluctuations in urban ideology during its long development, the main body of Macau's urban culture is not completely traditional Chinese culture, nor has it been completely assimilated by Western culture, but a unique culture that combines Chinese and Western cultures. Eclecticism is fully reflected in the city of Macau. The Historic District of Macau is the oldest existing Western-style architectural heritage in China and a comprehensive embodiment of Eastern and Western architectural art. The Historic District of Macau has witnessed the development of Western religious culture in China and even the Far East, and has also witnessed the historical origins of the spread of Chinese folk religions to the West. The Historic District of Macau is a unique reflection of the coexistence of Chinese and Western cultures, and is a very distinctive combination in Chinese historical cities. The Historic District of Macau is an orderly combination of Chinese and Western living areas, which is inseparable from the living customs and cultural traditions of residents from history to today. Culture is the sum of the material and spiritual essence created in the development of human society. After inheritance and development, it becomes the crystallization of human wisdom. This study integrates regional characteristics into cultural and creative products through the particularity of cultural and creative products themselves, that is, the two-dimensional attributes of the combination of cultural products and creative products , to promote the regional recognition of Macau culture while enhancing the innovation of Macau's regional cultural and creative products . It provides a foundation and guarantee for Macau to establish a world tourism and leisure center and cultural communication.

1.2. Research Objectives

The Historic Centre of Macao is the core part of the old city where foreigners, mainly Portuguese, lived in the past. The main streets and many "front squares" connect the important historical buildings of Macao, and it has basically maintained its original appearance. This large-scale building complex has a unified style and presents all the typical characteristics of a

port city and a traditional Sino-Portuguese settlement, including the characteristics of the integration and exchange of Chinese and Western cultures. The Historic Centre of Macao preserves the historical essence of the cultural exchange between China and the West in Macao for more than 400 years. It is the oldest, largest, most complete and most concentrated historical city in China, dominated by Western-style buildings, and Chinese and Western-style buildings complement each other; it is an important witness to the history of the spread of Western religious culture in China and the Far East; it is also the crystallization of the complementary and diverse coexistence of Chinese and Western cultural exchanges for more than 400 years. The purpose of this study is to integrate the world cultural heritage of Macao with the design expression of Macao's cultural and creative products. By extracting the cultural, artistic expression and spiritual core of the decorative patterns of Macao's cultural heritage buildings, the innovative design strategies for Macao's cultural and creative products that reflect the regional cultural characteristics are summarized, so as to broaden the design methods of Macao's cultural and creative products and enhance the competitiveness of Macao's cultural and creative products of material cultural heritage .

2. RESEARCH STATUS

By consulting and studying the existing relevant literature, books and other materials, most articles only conduct cultural value and inheritance research or architectural art characteristics analysis on Macao's regional architecture, and no research is conducted on extracting cultural factors from Macao's regional architecture and integrating semiotics to design cultural and creative products . Therefore, this article will systematically study Macao's material cultural resources, namely regional architecture, as an artistic whole. Cultural and creative products refer to intellectual property rights based on culture, extracting elements from culture, creating and improving cultural resources and cultural supplies through creative innovation and the use of modern scientific and technological means, and finally producing high value-added products. At present, there are many problems in the design of cultural and creative products in Macau, such as product homogeneity, lack of culture and aesthetics, etc. To solve the homogeneity problem of Macau's cultural and creative products , it is necessary to effectively utilize the unique regional cultural elements in Macau, conduct in-depth analysis from the aspects of cultural history, decorative style, customs and habits contained in it, explore and discover

the innovative points of Macau's cultural and creative product design; for the lack of aesthetic problems, specifically manifested in the lack of cultural connotation and artistic form, Macau's cultural and creative products have made certain breakthroughs in design, but there is still a lot of room for improvement in the expression of cultural connotation. Designers usually select traditional buildings or handicrafts as the extraction objects of design elements, select design patterns or shapes from them, and transfer them to product design after slight changes. Such designs are slightly empty and do not play an effective connecting role in cultural inheritance (Nong & Sirivesmas, 2024). Therefore, in-depth exploration and analysis of the culture, allusions, and folk customs contained in design elements and applying them to the design of cultural and creative products can effectively solve the problems of formalization and lack of cultural aesthetics in cultural and creative products. Domestic scholars have studied the integration of semiotics and design. Zhao Yiheng believes that art has always had a lot of materials and works, but lacks a pervasive theory, so art has become the most common discipline in applied semiotics. (Yu-Ming et al., 2023) Saussure believes that the inseparability of the signifier and the signified is the "identity" of the symbol, and believes that they are "homogeneous". (Xiao, 2015) Introducing semiotic methods into design, Li Leshan believes that the significance of product semiotics is that the product should "speak" by itself, telling users what functions it has and how to operate it. (Li, 2002) As a product design method, Zhao Zhiyong and Zhang Ye believe that metaphor is one of the most innovative and active creative forms, and it is also an important way in design rhetoric; rhetoric often determines the creative sensory evaluation of design works. (Xiao et al., 2021; Zhang Ye & Xin, 2018) These research results show that semiotics plays an important role in improving the effect of design expression. Combining regional cultural resources with cultural and creative product design is more practical for social development. Shi Aiqin and others proposed a path for the development of festival tourism cultural and creative products based on regional characteristics , providing theoretical guidance for designers. (Shi Aiqin et al., 2021) Zhang Xiaogang has elevated regional cultural and creative products to the level of city gifts.(Zhang, 2022) Li Hongchao and Xing Yalong conducted specific design research on Beijing and Macau respectively and achieved results; each region can create local characteristics based on different actual conditions, which also provides a paradigm reference for this study (Li et al., 2021; Xing, 2022). Based on the above analysis, this paper will conduct an in-depth study of Shaoguan's regional cultural tourism resources, select

representative cultural resources, and combine semiotics theory for design innovation, so as to design cultural and creative products with Shaoguan's regional characteristics and make efforts for the development of Shaoguan's cultural and tourism industry .

Table 1: Current Status Research

Years	Scholar	View Point	Overview
2002	(Li, 2002)	The significance of product semiotics is that the product should be able to "speak" for itself, telling users what functions it has and how to operate it.	These research results show that semiotics plays an important role in improving the effectiveness of design expression.
2021	(Xiao et al., 2021)	Metaphor is one of the most innovative and active forms of creativity, and is also an important form of design rhetoric; rhetoric often determines the creative sensory evaluation of design works.	
2024	(Nong & Sirivesmas, 2024)	Cultural and creative products should take cultural inheritance as their purpose in order to achieve the inheritance and innovation of Chinese traditional culture.	Domestic scholars have conducted extensive research on cultural and creative product design.
2022	(Zhang & Kluensuwan, 2022)	The commonly used design methods and process paradigms in cultural and creative product design are sorted out , which clarifies the direction for further research on cultural and creative product design and provides a reference for research methods.	
2021	(Shi Aiqin et al., 2021)	It proposes a development path for festival tourism and cultural creativity based on regional characteristics, providing theoretical guidance for designers.	Each region can create local characteristics based on different actual conditions, which also provides a paradigm reference for this article's research.
2022	(Zhang, 2022)	It elevates cultural and creative products with regional characteristics to the level of city gifts.	

3. RESEARCH METHODS

3.1. Semiotics Theory

Symbols are tools for expressing meanings and are interpreted as meaningful perceptions. Symbol cognition includes three processes: meaning, communication, and interpretation, corresponding to the sender, symbol text, and receiver. When we see a symbol, we need to pay attention to the who (identity), why (choice), what (marked items), and how (intention and interactivity) behind the symbol's meaning (Yiheng, 2016). "Symbols are perceptions that are considered to carry meanings. Meanings must be expressed by symbols, and the purpose of symbols is to express meanings." (Zhao, 2013) The structure, materials, patterns, and shapes that constitute a building are all symbolic expressions that meet social culture and carry important social significance. From a linguistic perspective, Saussure viewed symbols as a binary relationship between "signifier" and "signified". The signifier and signified of a symbol are composed of two parts: physical presentation and social meaning. Only when the two are combined can a complete symbol system be formed.

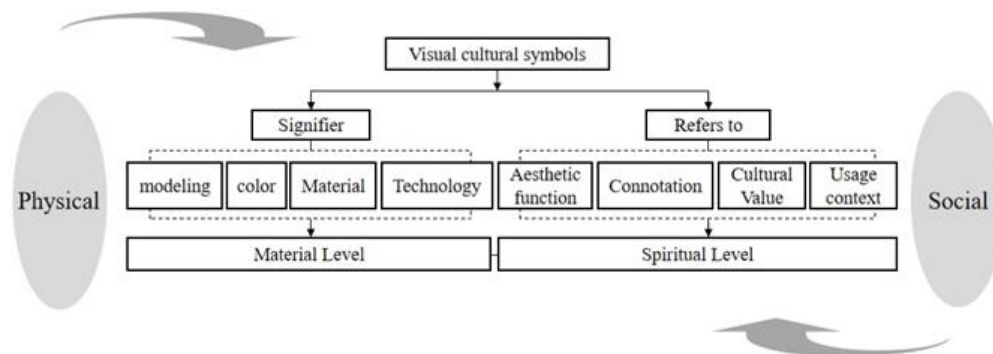


Figure 1: Visual Culture Symbol Composition System

3.2. Analytical Hierarchy Process

The weights of the extracted cultural factors are calculated by the analytic hierarchy process, and the most representative cultural factors are screened to provide a basis for constructing a system model of material cultural factors in Macau. In the early stage, the local cultural influence factors and foreign cultural factors in architectural decorative patterns were studied as the most representative cultural factors by constructing a hierarchical model. Based on the hierarchical model of the development factors of Macau's material culture, when scholars evaluate the development factors of each level (Hsun & Jie, 2022), they can position the importance between the two development and construction factors of the same level provided

by the superior factors according to the role of the superior factors, thus forming an evaluation matrix structure for the two. Combined with the theory of semiotics, through data collection, collation and analysis, Macau's regional architecture is divided into material and spiritual levels, thereby constructing a hierarchical model of Macau's material cultural resources, as shown in Figure 2. This study only conducts a hierarchical analysis of pattern symbols(HUANG & CHEN, 2017).

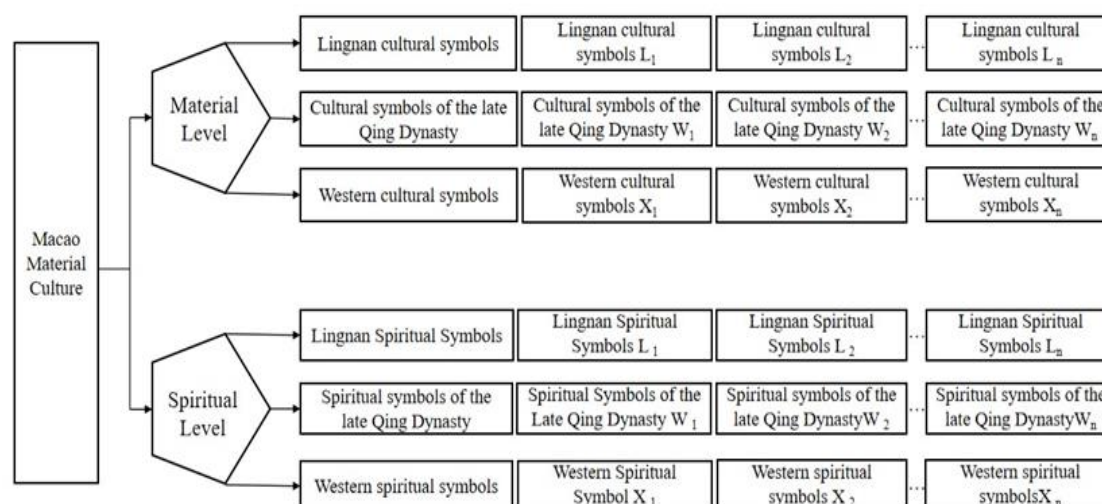


Figure 2: Hierarchical Model System

4. DESIGN PRACTICE OF CULTURAL AND CREATIVE PRODUCTS WITH REGIONAL CHARACTERISTICS IN MACAO

4.1. Arrangement and Selection of Macao's Regional Characteristic Material Cultural Resources

The decorative form of a building originates from the needs of its structure, construction, and modeling, that is, it comes from the objects that constitute the building, and at the same time becomes the object and carrier of decoration. Architectural patterns are distributed in various parts of the building. This study uses architectural components as the basis for analyzing patterns for coding. According to the data source of the Cultural Affairs Bureau of Macau, Macau's material culture is divided into architectural relics and historical urban areas. Architectural relics include 159 architectural relics, including monuments, buildings, buildings, and places with architectural and artistic value. The historical urban area includes 22 buildings and 8 squares. There are many architectural visual elements, clear shapes and color symbols, and strong recognition. See Table 2.

Table 2: Summary of Macao's Material Cultural Resources

Form	Category	Theme	Features
Material Culture		159 Architectural	
	Architectural Relics	Heritage Sites Including Monuments, Buildings, Complexes and Places of Architectural and Artistic Value	The Building has many Visual Elements, Clear Shapes and Color Symbols, and is Highly Recognizable.
	Historic District	22 Buildings and 8 Squares	It has Clear Shapes and Color Symbols, and is Highly Recognizable.

The first is to borrow the design of the signifier of the symbol, that is, to apply the cultural symbol graphics to cultural and creative products in a borrowed way. Borrowing can be to treat the cultural symbol as a component element of the product in its original form and directly apply it to the product; borrowing can also be to abstract the shape of the cultural symbol, fine-tune the graphics according to modern aesthetic rules, and apply it to the design of cultural and creative products. The second is the symbolic application of the signified by the symbol, to conduct in-depth research on the semantics of the signified by the symbol, and then transfer it to the design change at the signifier level. It emphasizes that after extracting the cultural symbol, the symbol should be broken up and reconstructed, and given new materials, so that the signifier of the symbol undergoes a fundamental change and has the characteristics of modern design elements; after application, the cultural and creative product design contains more regional cultural characteristics. See Figure 3.

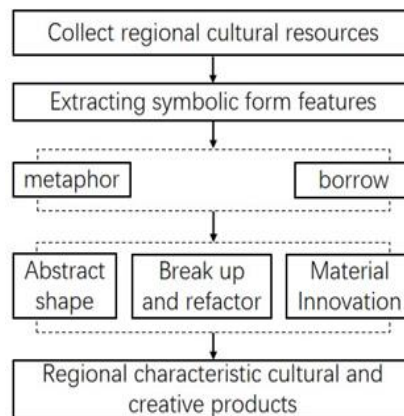


Figure 3: Application of Semiotics in the Design Process of Cultural and Creative Products with Regional Characteristics in Macau

4.2. Extraction of Macao's Regional Characteristic Material Cultural Symbols

Through the sorting and screening of the relevant literature on Macao's

material culture, the patterns of Macao's material culture, namely historical buildings, are divided into three types. The first is the patterns based on Lingnan culture, such as fish patterns, orchids, bamboo, etc., which are mainly derived from the Chinese culture of the Chinese people and homophonic images, and have metaphorical functions. The second is the patterns based on the late Qing Dynasty context, such as crabapple patterns, swastika patterns, cloud patterns, etc., which are mainly reflected in geometry, flowers and natural landscapes with auspicious meanings, and are the reproduction of patterns in the late Qing Dynasty. The third is the patterns based on Western culture, such as scroll grass patterns, buttercup stripes, etc. Macao's material culture, namely historical architectural patterns, is the external manifestation of Macao's cultural connotation. It also contains Macao's aesthetic values, social life and spiritual beliefs. It has a distinct symbolic meaning and is an important symbol of the cultural inheritance of Macao's historical buildings. The extraction of decorative patterns of Macao's historical buildings (partial) is shown in Tables 3, 4, and 5. The formation factors reflected in the patterns also reflect the historical changes of Macau in modern times. Macau is located in the southern tip of China and belongs to the Lingnan region. Therefore, it is deeply influenced by Lingnan culture, and the architectural patterns also reflect the characteristics of Lingnan. In the traditional houses of Macau, the decorative patterns mostly show the characteristics of Lingnan, so the cultural factors of Lingnan characteristics are extracted mainly in the form of flowers, animals, plants, geometry, etc. "Double fish" is taken as a homophonic meaning "abundance every year", and "orchid grass" is taken as an image metaphor to mean "noble and clean". The process of extracting the characteristics of Lingnan cultural symbols is shown in Table 3. In terms of time context, modern times are connected with the late Qing Dynasty, and there is cultural retention and inheritance. The patterns of architectural components are naturally affected by the times, reflecting the context of the Qing Dynasty. In the traditional houses of Macau, the decorative patterns with the characteristics of the late Qing Dynasty context are mostly reflected in the construction of partitions, etc. The decorative form of the partitions is similar to the indoor partitions of the buildings in the late Qing Dynasty, and the decorative patterns are mostly geometric, floral and other forms. For example, the image of "Begonia" is used to represent "autumn harvest", the image of "Wan Zi pattern" is used to represent "the power of life", the image of "diamond" is used to represent "wealth", and the image of "cloud pattern" is used to represent "promotion". The process of extracting the characteristics of cultural symbols of the late Qing Dynasty context is shown in Table 4.

Table 3: Extraction of Lingnan Cultural Symbols From Macao's Material Culture (Partial)

















Type	Pattern Name	Pattern Prototype	Symbol Extraction	Symbolism
Lingnan Culture	Fish Pattern			Year After Year Rise to Prominence
	Fruit Pattern			Many Children Bring Blessings Peace and Longevity
	Bamboo Pattern			Bamboo Brings Peace Rise as you Wish
	Orchid Pattern			Elegant and Noble Noble Character


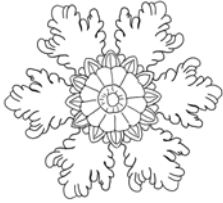



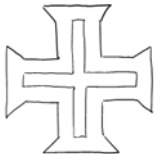


Table 4: Extraction of Cultural Symbols from the Late Qing Dynasty in Macao's Material Culture (Partial)

Type	Pattern Name	Pattern Prototype	Symbol Extraction	Symbolism
Late Qing Culture	Diamond pattern			Continuous Lofty Ambition
	Huiwen			Promotion
	Begonia pattern			Wealth and prosperity Perseverance
	Cross pattern			Latitude and longitude of heaven and earth The vast land

Macau's port location made it the first Chinese region to receive Western

culture. A large number of foreign merchants poured in here, and Western culture was exported and transmitted through trade. Western culture was also displayed in Lingnan architectural patterns. Due to historical and geographical reasons, Macau was influenced by Western culture to a certain extent. The architectural decorative patterns are mostly reflected in ceilings, iron windows, Manchu windows and other components. The most notable feature is the differences and similarities in architectural decorative materials. Most of them are decorated with materials such as plaster and iron art. Although there are shadows of Western style, Chinese auspicious patterns are also retained, such as the diamond decoration of Manchu windows. The process of extracting Western cultural symbol features is shown in Table 5.

Table 5: Extraction of Western Cultural Symbols from Macao's Material Culture
(Partial)

Type	Pattern Name	Pattern Prototype	Symbol Extraction	Symbolism
Western Culture	Buttercup Grass Pattern			Wisdom Art Resurrection
	Iris Pattern			Pure Freedom a Bright Future
	Cross Pattern			Rescue and Redemption Tree of Life
	Wreath Pattern			Happy and Contented Symbol of Power

4.3. Constructing a Model of Macao's Material Cultural Symbol System

The weights of the extracted cultural symbols are calculated by the analytic hierarchy process (AHP), and the most representative cultural symbols are selected to provide a basis for constructing the symbol system model of Macao's material culture. In the early stage, the symbols of local culture and foreign culture in architectural decorative patterns are studied as the most representative cultural symbols by constructing a hierarchical model. Based on the hierarchical structure model of the development symbols of Macao's material culture, scholars can evaluate the development symbols of each level according to the role of the superior symbol, and position the importance between the two development and construction symbols of the same level provided by it, thus forming an evaluation matrix structure for the two.

Taking the evaluation of the relative importance of Lingnan cultural symbols as an example, the architectural pattern symbols L1 and L2 extracted from Table 3 are used to design the importance evaluation table of Lingnan cultural symbols in buildings, as shown in Figure 4. Assuming two cultural symbols X_i and cultural symbol X_j , the meaning represented by X_{ij} is shown in Table 6. Several people with a deep understanding of Macao's material culture were selected for testing, and the weights and consistency ratios of various symbols were obtained through AHP calculation. The final results are shown in Table 7.

Table 6: Proportional Scaling Method in the Judgment Matrix of Macao Lingnan Cultural Symbols

Scale	X_i Compared With X_j
1	Both symbols have the same importance
3	Cultural symbol X_i is slightly more important than cultural symbol X_j
5	Cultural symbol X_i is significantly more important than cultural symbol X_j
7	Cultural symbol X_i is extremely important compared to cultural symbol X_j
9	Cultural symbol X_i is more important than cultural symbol X_j
2, 4, 6, 8	The middle value of the adjacent scale above

Note: If the ratio of the importance of X_i to X_j is x_{ij} , then the ratio of the importance of x_j to X_i is $x_{ji} = 1 / x_{ij}$.

Table 7: Evaluation Table of the Importance of Macao Lingnan Cultural Symbols



D	Symbol X _i	Scale	Symbol X _j
1	 Symbol L ₂	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	 Symbol L ₄

Table 8: Results of the Hierarchical Analysis of Macao's Material Cultural Patterns and Symbols

Name	Weight w _i	Consistency Index C _i	Test Coefficient Cr
Lingnan Symbol L1	0.120	0.119	0.094
Lingnan Symbol L2	0.517		
Lingnan Symbol L3	0.173		
Lingnan Symbol L4	0.190		
Late Qing Dynasty Symbol W1	0.140	0.097	0.077
Late Qing Dynasty Symbol W2	0.305		
Late Qing Dynasty Symbols W3	0.359		
Late Qing Dynasty Symbol W4	0.196		
Western Symbols X1	0.170	0.078	0.070
Western Symbols X2	0.109		
Western Symbols X3	0.295		
Western Symbols X4	0.426		

The analysis results show that the test coefficients of the judgment matrices of each cultural symbol are all less than 0.1, which means that the judgment matrix of this study meets the consistency test and the calculated weights are consistent, proving that the importance ranking test of Macao's material cultural symbols has achieved relatively satisfactory results and all passed the consistency test. Among the local cultural symbols, the importance of Lingnan cultural symbols is ranked as follows: L2>L4>L3>L1, indicating that among the Lingnan cultural symbols, the factor L2 "fruit pattern" symbol is more important; the importance of the late Qing cultural symbols is ranked as follows: W3>W2>W4>W1, indicating that among the Lingnan cultural symbols, the symbol W3 "Begonia pattern" symbol is more important. The importance of Western cultural symbols is ranked as follows: X4>X3>X1>X2, indicating that among the Western cultural symbols, the symbol X4 "garland pattern" symbol is more important. According to the results of the cultural symbol hierarchy analysis, the cultural symbols with the top three weights in each symbol are selected to form a new cultural symbol system model, as shown in Figure 4. The design application scope of the cultural factors of the decorative patterns of traditional residential buildings in Macao after screening covers many fields, such as product design, architectural

decoration design, etc. Decorative patterns not only have a beautifying effect, but also have cultural attributes. Taking product design as an example, by continuously improving the design of product form, color, material, function, connotation and other aspects, the cultural factor system model of the decorative patterns of traditional residential buildings in Macao is applied to the practice of cultural and creative design, showing the design cases of applying the cultural factors of traditional residential buildings in Macao in the development of regional characteristic products, as shown in Figure 5.

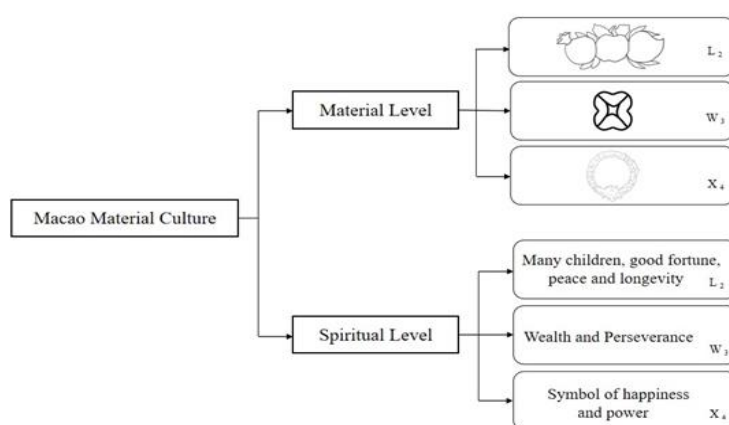


Figure 4: Model of Macao's Material Culture Symbol System

4.4. Design Cases of Cultural and Creative Products with Regional Characteristics in Macao

The reason why Macau's regional cultural and creative products have always been a shortcoming in Macau's tourism development is that Macau's own historical and cultural attributes are special. Through the construction of the Macau material culture symbol system model, it can also be seen that the cultural symbols of the extracted historical architectural patterns have the cultural attributes of other regions. In this way, how to highlight Macau's regional characteristics through cultural and creative products has become an issue that must be faced. However, based on the perspective of semiotics, the use of hierarchical analysis to screen out pattern cultural symbols with regional characteristics can still effectively focus on the symbolic expression of Macau's regional cultural and creative products. As a carrier of meaning and cultural attributes in architecture, patterns use decorative patterns to screen and extract their material and spiritual symbols, and make them into Macau's unique symbolic pattern elements, which have practical significance in the design of cultural and creative products. Since patterns have both material and spiritual attributes, they complement the signifier and the known in the visual cultural symbol

system, and also correspond to the dual attributes of cultural and creative products. Therefore, in the application of cultural and creative products, multi-field and diversified designs can be combined with products of different materials, different pattern composition rules, and different functions. As shown in Figure 6-1, independent patterns are used as symbol monomers and combined with metal materials, so that the spiritual attributes of the patterns themselves are attached to cultural and creative products, giving them the semiotic signified function, so that cultural and creative products can intuitively feel the artistic expression of regional cultural symbols at the material level of the signifier of the symbol, and at the same time, cultural and creative products have the product semantics given to them by the pattern symbols at the spiritual level of the signified of the symbol, so as to achieve the mutual communication and integration among patterns, visual cultural symbols, and regional cultural and creative products. Figure 6-2, Washi tape is a common type of cultural and creative products, and is also an everyday product where semantic symbols such as patterns are often used. When facing products with a fixed range, the application of pattern symbols will be designed in combination with different pattern composition rules, such as two-sided continuous, four-sided continuous and other pattern composition rules. In addition, innovative themes such as storytelling expressions can be compiled through pattern symbols to enable patterns to achieve innovative practices in daily product design. Figure 6-3, Coasters are products with functional uses. In previous designs, the functions of the patterns on coasters are often focused on visual beauty. However, the symbolic meaning extracted from the patterns in this study, that is, the spiritual level, is applied to functional products, which can not only provide aesthetic value visually, but also increase the spiritual experience of use, and further explore and spread the spiritual connotation and humanistic thoughts behind them.



(a)



(b)



(c)

Figure 5: (a, b & c): Collection of Macao Museum X MEEET : accessories, washi tape, coasters

5. CONCLUSION AND RECOMMENDATIONS

As consumers' demand for regional cultural and creative products increases, designers consciously use regional cultural translation methods, starting from the regional art characteristics that highlight the characteristics of Macau's intangible cultural heritage, to effectively solve the problems of homogeneity, monotonous experience, and shallow semantics of existing Macau cultural and creative products, and design excellent cultural and creative products, thereby enhancing the status of Macau's intangible cultural heritage in the hearts of consumers; regional cultural and creative products can integrate culture and design, and are one of the important components of the cultural tourism industry, which plays an important role in promoting the development of the local economy. This paper takes Macau's cultural and tourism resources as the research object, selects representative projects, uses the signifier and signified in

semiotics to analyze, finds design elements in architectural relics, extracts design concepts through hierarchical analysis, and applies them to cultural and creative products to improve the cultural attributes and regional characteristics of products. The semiotic design method used in this paper can provide reference for the design of cultural and creative products in other regions; it is hoped that it can enrich the current situation of monotonous types of Macau's tourism cultural and creative products and enable tourists to have a better consumer experience.

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References

- Hsun, W. P., & Jie, G. (2022). Systematic creation of a city's visual communication: logo design based on the phoenix flower in Tainan City, Taiwan. *Visual Communication*, 21(4), 542-559.
- HUANG, Z., & CHEN, J. (2017). Research on the application of traditional art symbol elements in the design of new media advertising. *Journal of Mines, Metals & Fuels*(13).
- Li, H., Wang, X., & Li, W. (2021). Research on symbol development and design strategy of Beijing tourist souvenirs. *Packaging Engineering*(12), 263-271.
- Li, L. (2002). Design ideas of product semiotics. *Decoration*(04), 4-5.
- Nong, L., & Sirivesmas, V. (2024). Chaoshan Guo Molds Culture under Semiotics Theory Creative Product Design. *Journal of Roi Kaensarn Academi*, 9(12), 2120-2135.
- Shi Aiqin, Cheng Cheng, & Jiaxin, L. (2021). Festival tourism cultural and creative development strategy based on regional characteristics. *Social Scientists*,(11), 55-60.
- Xiao, Y. (2015). The epistemological foundation of Saussure's semiotics: a study of the Manuscripts on General Linguistics. *Social Science Research*, , 155-161.
- Xiao, Y., Huang, X., & Shao, Y. (2021). Urban Cultural and Creative Product Development Based on Semiotics Theory. *International Journal of Frontiers in Sociology*, 3(9).
- Xing, Y. (2022). Research on the design of Macau tourist souvenirs from the perspective of cultural symbols. *Packaging Engineering*(04), 392-400.
- Yiheng, Z. (2016). Semiotics Principles and Deduction. In: Nanjing: Nanjing University Press.
- Yu-Ming, M., He-min, D., & Hao, Y. (2023). On innovative design of traditional Chinese patterns based on aesthetic experience to product features space mapping. *Cogent Arts & Humanities*, 10(2), 2286732.

- Zhang, H., & Kluensuwan, P. (2022). A Visual Semiotic Analysis of Graphic Chinese Character City and Provincial Logos.
- Zhang, X. G. (2022). Chinese experience and Chinese paradigm of ecological construction of “city gift” in the context of new cultural and creative industries. *Journal of Shenzhen University (Humanities and Social Sciences)*(02), 54-64.
- Zhang Ye, & Xin, Z. (2018). Twenty years of research on Chinese design rhetoric: origin and prospects. *Decoration*(11), 80-83.
- Zhao, Y. (2013). Redefining symbols and semiotics. *International Media*, 6, 6-14.