

A Study of the Research Methods Used to Examine Design Patterns in Modern Chinese Architecture

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The design patterns of modern Chinese architecture have undergone frequent and complex changes within a short period. With one evolutionary trend alternating—and even crisscrossing—with another, any research on these trends is thus faced with certain difficulties. This study proposes a tripartite approach, namely, to focus on the local consciousness in the region under study, to combine historical views from the field of genealogy, and to draw on the classification of perspectives in social psychology, in order to examine research methods for modern Chinese architectural design in a novel fashion. The evolutionary path of the design patterns used in modern Chinese architecture is traced through a dynamically changing range of regions by studying the root cause for the formation of modern architecture's outward physical shape, and by adhering to the very phenomenon of architecture itself. In addition, the design patterns of modern Chinese architecture are classified based on the evolution of individuals, as well as of the communities' perceptions, emotions, and decision-making with regard to modern architecture, to approximate the in-depth cause of the formation of physical architectural forms and to shed light on the historical, artistic, and cultural significance of China's modern architecture.

Keywords: *Modern Architecture; Design Pattern; Methodology; Classification*

1 Introduction

In their clash with the rich tradition of Chinese architectural culture, flourishing colonial culture and western architecture styles have created a diverse range of styles and shapes in China's modern architecture. From about 1840 to 1949, China witnessed a vast number of architectural styles that leapfrogged through various stage of evolution. During this period, cultural exchanges of architectural styles also occurred, which influenced the different stages of development of region-specific architectural design patterns, including the self-protection and promotion of local architectural cultures, the social and psychological evolution, and the genealogical root and development of the architectural culture.

China's domestic research on modern architecture has made considerable progress, and the focus of the study is gradually transferring from the sorting of historical data and architectural

styles to an in-depth, interdisciplinary analysis of the architectural culture to discover the historical, artistic, and humanistic value of architecture. However, the overall academic quality still demonstrates some room for improvement, which is mainly reflected in the following three aspects. First, the majority of studies still focus on the architecture itself, and deeper analyses are needed. Second, the studies are often restricted in scope to one city and lack the idea of a region-wide system, which results in the absence of succession between discrete studies. The research on the evolution of China's modern architectural design has yet to form a cohesive system. Third, the scope is still narrow because the number of interdisciplinary studies is not enough.

First, China's modern architectural design patterns are not only influenced by western culture and Chinese traditions but are also closely linked to region-specific architectural culture. Therefore, simply examining one city alone is not sufficient to grasp the deep-seated cause of the evolution of architectural design patterns within the city. Efforts are needed to place architecture in the wider horizon of region-wide culture for analysis. Second, the evolution of architectural design patterns does not happen overnight, and there are often correlations that exist within the original design patterns. This genealogical study puts emphasis on details and pays attention to the coincidence of fragments (Michel Foucault, 2003), which are suitable attributes for a study on the origin and evolution of China's modern architectural design patterns. China's modern architecture has a long and complex history of colonial culture and is mixed with indigenous artistic styles, which fully demonstrates the rapidity of the drastic architectural changes of this period. Therefore, it is appropriate to dig deeper into the evolution of China's modern architecture designs by using ideas from genealogical studies. Thirdly, the evolution of architectural shapes depends on the development and propagation of culture, and the agents of cultural propagation are "human beings" and human psychological activities. Thus, the "human" influence on architectural forms opens up a gateway for studies to transform from uniform and stationary research on architectural shapes to dynamic research on the development of region-wide architectural forms. The dynamic overlapping and development of various architectural design patterns will be more clearly demonstrated through classification from the perspectives of social psychology and architectural taxonomy.

2 Research focusing on the local consciousness of the region under study

The passive nature of China's modern architecture, as it came into existence, has been widely recognized by Chinese academia. However, many politico-economic changes and developments take place within relatively small areas, and are not prevalent across the world (Wang Guobin, 2007). He claim that we should not only pay attention to the region and the outside world, but also the particularity of the region as a whole to focus on the internal factors of regional development. We should first acknowledge the existence of external factors and their significant impacts, but should also realize that their impacts do not absolutely exist in all times. This is the case seen in the self-protection, development, and breakthroughs of regional cultures when faced with stronger colonial cultures. Therefore, instead of focusing solely on the foreign cultures of colonists or the philosophical evolution of traditional Chinese ideology, studies on the design patterns of modern Chinese architecture should also pay attention to the evolution of regional cultures in the regions under study.

The significance of a region's localness does not reside in its size, but its homogeneity or heterogeneity. This has nothing to do with territorial integrity on the political level but is

related to the amalgamation of similar activities in the cultural sense. In the case of China's modern architecture, the main regions include the coastal commercial areas in Southeast China, the region of business, politics, culture, and bureaucracy to the south of Yangtze River, the region of business, politics, and military affairs around Beijing and Tianjin, the region of military and political affairs in the Northeast, and the more recently added south-central region of business, political/military affairs, and education. At present, relevant studies in the academic sphere mainly focus on the modern architecture of a certain city or buildings designed by a certain group of people. For example, in the case of coastal cities in the Southeast, the studies focus on colonial architecture, or modern architecture influenced by the culture of Hakka or overseas Chinese communities, rather than making deduction and comparison while considering the entire Southeast coastal commercial region. But at present, researchers mainly focus on Guangdong Province and Fujian Province, among which Guangzhou alone accounts for 41.9% of the research volume in Guangdong Province, and Xiamen in Fujian Province is also an important city, accounting for 64.3% (data source: Li Yinan, 2012). In fact, the commercial region along the Southeast coast is a traditional trading area, with active zones stretching from Fujian's Fuzhou in the north to Guangzhou in the south. Most of the port cities along the coastal line were opened during modern times, while the cultures of the Hakka and overseas Chinese merged with western architectural cultures in many cities to produce unique clusters of modern architecture. Therefore, when the focus of a study is expanded to incorporate the origin and development of modern architectural design along the entire southeastern coast, there should be an in-depth cultural analysis of the dynamic processes in which the local culture of this region accepted its overseas cultural cousins along with western culture. This is even more evident in the region south of the Yangtze River, which was the economic and cultural center of imperial China. With the ports opening as well as dual exposure to the impacts from the spheres of both new commercial forms and the political clout of the capital city, the long-standing local tradition of urbane and elegant styles took a hit, and an entirely new culture was born in the region during modern times. This region became synonymous with modernity and rapid development. A characteristic of this region during this phase is the joint development of politics, business, and culture, which is also the key to understand the different modern architectural styles of this region. Indeed, if a study focuses solely on Shanghai, the trend of western architecture does flourish there, but what is the reason for the appearance of such design patterns as the "grand roof"? This is inextricably linked with the "New Life" movement in Nanjing, the capital city at the time. At that time, Jiang Jieshi believed that while the Chinese people were accepting the new culture, they should not abandon the essence of the old culture (Zhang Chunxing, 2011). This shows that the influence of modern architecture on design patterns is not derived from a single unitary source, but rather from multiple complex ones. Additionally, although many accidental events may occur when a certain region's local culture and foreign ones are evenly matched while each has its merits, on the whole, the architecture will not spin away from the sphere of the region's local culture. Therefore, the development of a city's modern architecture is not only related to its background, but also to other cities within the homogeneous region in which this city resides. When the regional culture has a long history and abiding influence, the case could be more complex; thus, it is necessary to approach the study of modern architecture from the perspective of regional consciousness. However, there are more than one hundred Chinese literatures on the research of modern architecture in Shanghai now, while researches on modern architecture in Jiangnan as a whole region is in single digits (data resource: CNKI).

Moreover, the division of regions is not unalterable but varies along with changes in the spheres of regional culture. One sphere may merge with another one belonging to a homogenous culture, and may split off from a heterogeneous one; often, this does not dovetail with the regional boundaries on maps. For example, the region of business, politics, and military affairs around Beijing and Tianjin coincided with the sphere of the capital city's political clout. After the fall of the Qing Dynasty, the capital was moved to the south, and its status in terms of political and military affairs diminished drastically. When it came to commerce and trade, the region also paled in comparison with Shanghai. Cities within the area underwent a period of slow growth, and thus, the region's sphere reduced sharply. With the local consciousness becoming more fragile, the region also lost its momentum, despite certain revival resulting from the planning and construction of foreign settlements in concession zones. Therefore, studies on modern architecture should not only pay attention to the region's local cultural background but also the boundary of activity of the region's cultural sphere, as this directly affects the source of cultural influence upon modern architecture, and in turn, plays a decisive role in the physical architectural forms of a period.

3 Research in combination with the historical views of genealogical studies

Traditionally, genealogy refers to studies on the lineage and names of families and emphasize the continuation and consistency of historical ties. Inspired by Nietzsche, Michel Foucault takes a stance that is critical of traditional historical views and proposes that history is composed of a series of fragmentary and intertwining contingent events. Foucault believes that the interpretation of those with the power of speech is not real "knowledge" or the origin of history, and advocates the intermittent method for historical studies to determine truth from within contingent episodes (Wu Qi, 2007). This approach to history, although echoed to some extent in studies on the design patterns of China's modern architecture, is the closest to reality. China's modern architecture underwent a history of successive regimes of political and military forces, which means that those in power changed frequently. This demonstrates how the holistic history on which architectural history is based is itself fragmentary, and the "knowledge" of modern architectural design is also complicated. This is the root cause of rapid development and many variations of design patterns within short periods.

China's modern history is fraught with fluctuations. The style of modern architecture also experienced intensive periods of drastic changes, and sometimes multiple currents of transformation occurred simultaneously. Being largely contingent happenstances, these changes bear full testimony to the Foucauldian idea of genealogy. Therefore, the introduction of genealogical perspectives on history is necessary for studying China's modern architecture. On the other hand, the abovementioned idea of focusing on regionalist characteristics is a precondition of and the limit range for genealogical perspectives on history. As the research methods of genealogical opinions usually tend to involve the drudgery of digging through ancient texts, it is necessary to have a limited range. Consequently, it is possible for studies on China's modern architecture to break free from comparisons of architectural forms (China's modern architectural design patterns are frequently compared with classical western design patterns, then classified and given category names. "Western classical style, feeling Baroque, imitation of the Spain style or the British Style (Pan Guxi, 2009), imitation of Gothic style castle, imitative collection of Eclecticism (Deng Qingtan, 2009), Eclecticism combining classical and modern Europe, imitation of Renaissance (Chen Congzhou and Zhang Ming (1990))" are the vocabularies

used to describe these modern architectures.), and extend in more varied directions to stop being confined to the discrimination of visible material shapes, and to start inquiring after the very nature represented by the physical shapes. In other words, it has become imperative for current studies to search for the origins of architectural design and the course of evolution of later-stage variations by following the developmental pattern of modern architecture.

There are two reasons for the adoption of genealogical perspectives on history for studying China's modern architecture. First, milestones of historical buildings reflect historical development and human needs. Traditional architecture higher up in the hierarchy of status puts more emphasis on the reverence and aspiration for the heavenly realm and has memorial significance exceeding the utilitarian value. Subsequent generations also tend to adopt the same rituals and ceremonies by following the model of their ancestors, leading to obvious phases and successions in the development and substitution of architectural designs. However, the emergence of China's modern architecture is not due to veneration for deities, but because of the more secular needs of the people. This was a period when different countries and social communities all exerted a conscious impact on architectural forms and design. Therefore, the emergence of China's modern architectural design patterns is a contingent but conscious mass event. Second, certain specific building materials and techniques are employed in traditional buildings, both of which are owned by the ruling classes. The emergence and development of China's modern architecture coincided with various political powers jostling for domination. With a thriving scene for the development of building materials and techniques, designers and builders had ample room for creation, and with the absence of uniform patterns and judgment standards, individual building owners had a comparatively larger say. As a result, modern architecture displays more of a personal touch during construction when compared to traditional buildings. In this sense, the birth of China's modern architectural patterns is an independent and unconscious contingent event. To summarize, given the complex and convoluted alterations in the birth of China's modern architectural design patterns, and because of the existence of the group and independent contingency traits, it is appropriate to combine the historical conceptions of genealogical studies.

4 Taxonomical studies in combination with perspectives of social psychology

Even with the recognition of regionalism and the adoption of historical views of genealogy, it is still daunting to conduct studies on China's modern architectural design patterns, and taxonomical studies are urgently required. The traditional means of classification in architectural studies is more suitable for the discovery and analysis of early research on China's modern architecture; a classification of corresponding architectural shapes based on a known timeline could leave some blurry areas. Therefore, it is less useful for the mid-to-later stages in discussions of the historical significance and cultural value of architecture. This is due to the frequent changes, multiple variations, and crisscrossing development of modern architectural design patterns within a short time, which calls for an improved means of taxonomy for more comprehensive analyses. As mentioned previously in this paper, the evolution of architectural design patterns is dependent on the development and propagation of cultures, and the main carriers of culture are human beings and their psychological activities. As Juliet L.H. Foster (2014) said, people who use public buildings may also influence the architectures. Changes of the buildings reflect the knowledge and understanding during the past time. Therefore, architectural patterns change along with the

evolution of human psychological activities and the mindset of social communities during a building's time of construction could determine its pattern (Johann Joachim Winckelmann, 1727; G.W.F. Hegel, 1775); moreover, individual psychology manifests itself throughout a certain type of architectural design pattern. Heinrich Wölfflin (1950) considered a style expresses an individual disposition, and also expresses an age and a nation. Consequently, the outward attributes of a building are closely connected to the psychological consciousness of social groups as well as individuals; the latter exerts a guiding and decisive effect upon the former, whereas the former serves as evidence of the latter's dynamic changes. This interactive relationship between the two is the fundamental factor in the overall dynamic development of modern architecture within a region. Juliet (2014) also hold that "social psychologists of knowledge might find it helpful to explore architectural history in more depth." For this reason, it is necessary and inevitable to combine these two in architectural studies.

The psychological activities of human beings have implications for human decisions and strategies. "Human beings" are communal creatures. Tajfel, H. and Turner, J.C. (1986) found that individuals have some collective awareness of themselves as unique social entities and they tend to perceive and define themselves as a group. Therefore, it is necessary to pay attention both to the effects of evolution in individual psychology upon a single architectural pattern and to the self-classification and sense of identity of human beings within specific historical periods and against certain social backgrounds. The group to which one belongs and psychological changes in the group to which one mentally considers himself to belong are the main factors that influence the large-scale emergence of architectural shapes during a single period. When human beings are mentally and physically approached by an increasingly small margin, or already belong to a certain group, their individual thoughts and desires are assimilated into the will of the group (Rupert Brown, 2007); this uniform group will, on the other hand, is derived from individual thoughts and desires. Therefore, the two influence and change one another. During China's modern times, there was a quick succession of new ideas in economics, politics, and cultural spheres, in addition to the formation of new groups. Human beings, however, are also subject to the confines of the self, with the cultural context of their region exerting the most major and direct influence. The social psychology in different regions demonstrate diachronic similarities and synchronic differences; but the birth and development of China's modern architecture are, generally speaking, a process of the perception–acceptance–judgment–decision-making of the human beings native to a region, which is a process of passive psychological activities turning into active ones. Hence, a social psychological perspective will be widely applicable to the taxonomy of China's modern architecture.

To understand the influence of regional human psychology on China's modern architectural design patterns, it is possible to adopt the historical views of genealogical studies, and classify phenomena of modern architectural patterns that are already known in order to analyze the evolution as well as transformation of the perception, evaluation, and decision-making of individuals and social communities regarding modern architecture in a certain region. If the temporal development of the knowledge, emotions, and consciousness in the psychology of communities is considered the horizontal axis, and the temporal development of the knowledge, emotions, and consciousness in the psychology of individuals is taken as the vertical axis, a phasic curve can be formed demonstrating the different psychological understandings that a regional society has regarding China's modern architectural design patterns; thus, the major types of modern architectural design patterns can be classified. This is an ideal approach for combining the vast number of complex design patterns with the

internal causes for their emergence, and to avoid the deviations resulting from comparisons between different architectural forms. Some early church buildings, for example, used indigenous materials and conformed to the native architectural culture. Afterward, with the emergence of the idea of salvaging China from foreign subjugation, “grand roofs” became all the rage. In terms of architectural form, this design pattern belongs to the same category as some early church buildings; however, the cultural significance is categorically different. Therefore, the self-classification of a region’s modern architecture is possible by understanding the turning points in the social psychology of a region, and to recognize the correspondence between individual buildings or building clusters and the birth of individual consciousness, the emergence of class and group mentalities, and the growth of a national mindset. Such a taxonomical method is no longer limited to the time of construction or the visible architectural shape; rather, it is psychological anatomy of related characters (owner, architect, builder, etc.) and the groups they belong to, for the purpose of determining the type of a building. This approach illustrates the background, reason, and development of modern architectural design patterns, thus providing more clues to the exploration of in-depth historical significance and the cultural value of modern architecture design.

5 Conclusion

In conclusion, China’s modern architectural design went through drastic changes and multiple variations within a short period, due to architecture being at the forefront of the turbulent era of foreign invasion and domestic conflicts. Therefore, it is no longer appropriate to merely follow traditional research and classification methods; rather, a more interdisciplinary approach should be adopted based on the complex attributes of modern architecture itself. The target of a study should not be confined to a single building or a single city but should be extended to incorporate the wider dynamic changes of regional consciousness. Studies should pay close attention to the region boundary of influence, that is, the assimilation and divergence of boundaries. In addition, a lineage should be established in combination with developments in the multilateral relations in world and regional history; efforts should be made to go beyond a reliance upon the path of consistent historical development that is already known, and to adopt a regressive study considering the very phenomenon of the appearance of an architectural style during a certain period, thereby restoring from the phenomenon a comprehensive path of the architecture’s historical, artistic, and cultural evolution, and accentuating the contemporary significance of China’s modern architecture. Therefore, the focus of a study should not be limited to visible architectural forms, but should also include the dynamic evolutionary path of the social community and individual mindsets that affect the decision-making process for the shaping of architecture. By analyzing the interaction and transformation between individual and community mindsets, the evolution of recognition, evaluation, and decision-making regarding modern architecture within a certain region in modern times can be understood. On this basis, five major architectural types are proposed: forced recognition of self-change and sudden transformations, indiscriminate evaluation resulting from the bandwagon mentality and following suit in transformation, awareness of independent identity featuring succession and manifestation, active evaluation featuring activeness and development, and self-sufficient decisions featuring innovation and reconciliation. Such a classification prevents buildings with similar shapes but with completely different backgrounds of creation from being subsumed into the same category (which is seen in traditional classification methods),

thereby making it more likely to better analyze the design patterns of modern architecture and to discover their deeper artistic and cultural value.

6 References

- Michel Foucault (2003), translated by Du Xiaozhen. *Anthology of Foucault* (pp.157). Shanghai: Shanghai Far East Publishing.
- Wang Guobin. (2007). Regional World and World Regions. *Historical Review*, (5), 77-88. doi: 10.3969/j.issn.1007-1873.2007.05.007
- Li Yinan. (2012). The Region Difference and Unbalance in the Current Research of Chinese Modern Architectural History on the Basis of Data Analysis of International Conference on Chinese Modern Architectural History. *Huazhong Architecture*, (8), 14-17. doi:10.13942/j.cnki.hzjz.2012.08.011
- Zhang Chunxing. (2011). Jiang Jieshi and His New Life Movement. *Literary Monthly*, (5), 38.
- Wu Qi. (2007). Foucault Nietzsche Genealogy. *Huazhong University of Science and Technology Journal (Social Sciences)*, (6), 21-24. doi: 10.3969/j.issn.1671-7023.2007.06.004
- Pan Guxi. (2009). *A History of Chinese Architecture* (pp.343, 350). Beijing: China Architecture & Building Press.
- Deng Qingtan. (2009). *Illustration of the History of China Modern Architecture* (pp. 75, 107). Wuhan: Huazhong University of Science & Technology Press.
- Chen Congzhou & Zhang Ming. (1990). *Modern Architectural History of Shanghai* (pp. 40, 47). Shanghai: SDX Joint Publishing Company.
- Juliet L.H. Foster. (2014). What can Social Psychologists Learn from Architecture? The Asylum as Example. *Journal for the Theory of Social Behaviour*, 44(2), 131-147. doi: 10.1111/jtsb.12034.
- Johann Joachim Winckelmann. (1972). In Davis Irwin (Ed.), *Writings on Art* (pp.53). London: Phaidon;
- G.W.F Hegel. (1975). transl. T. M. Knox. *Aesthetics: Lectures on Fine Art (vol.2)* (pp.630-634). Oxford: Clarendon Press.
- Heinrich Wölfflin. (1950). transl. M.D.Hottinger. *Principles of Art History: The Problem of the Development of Style in Later Art* (pp.10). New York: Dover Publications, Inc.
- Tajfel, H. & Turner, J.C. (1986). The Social Identity Theory of Intergroup Behaviour. *Political Psychology*, 13(3), 7-24.
- Rupert Brown. (2007), translated by Hu Xin, Qing Xiaofei. *Group Processes* (pp.18). Beijing: China Light Industry Press.

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