The Study of the Changing Boundaries of Chinese Traditional Dwelling

A Perspective of Institutional and Behavioral Elements

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Abstract

The boundary of living space is the evidence of traditional Chinese dwelling, and its analysis helps to understand the relationship between institutional elements, behavioral elements and spatial structure in Chinese urban architecture. The study focuses on residential historical areas in Nanjing, which exhibit the diachronic and synchronic characteristics. The article first analyzes the spatial and social characteristics of the boundaries in different periods, and then elaborates on the historical residential boundaries with the literature, comparing and analyzing the way they evolve. Then, through the study of urban policies and institutions in different periods, the way of evolution at the institutional and behavioral levels is illustrated. Finally, the relationship among boundaries, institutions, and behaviors is analyzed by examining the interconnections of boundary change features and institutional change features.

Keywords

Traditional dwelling, institutional element, behavioral element, boundary

1. Introduction

As the threshold that distinguishes private property rights from urban space, the boundary of traditional Chinese residential space is a spatial line that reflects historical and cultural patterns, urban institutions and the modes of land division. Its coverage and structural form reflected the social status, economic level and lifestyle of the occupants, as well as the land tenure systems of the city. However, after the gradual disintegration of traditional society, the spatial structure of the boundaries has undergone drastic changes. The spatial ownership within the boundary became common to many people, and its private spatial properties gradually took on certain urban characteristics. The boundary began to lose its traditional role of spatial demarcation. However, as a kind of historical information and a representation of the scope of activities, the boundary still has a great significance in the traditional living space.

This paper mainly explores the close relationship between the evolution of urban dwelling boundary and variation of institutional elements, while focusing on the influence of residents' behavior. As the border between private space and public space, the boundary change reflects the compound superposition relationship between policy change and residents' behavior, and is an essential paradigm and exemplar for the study of the evolution of residential space in traditional Chinese cities.

58TH ISOCARP WORLD PLANNING CONGRESS
FROM WEALTHY TO HEALTHY CITIES
URBANISM AND PLANNING FOR THE WELL-BEING OF CITIZENS
3-6 OCTOBER 2022
BRUSSELS BELGIUM

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2. Background

2.1 Boundaries and Courtyards

The boundary of living space is an important spatial feature in Chinese urban architecture. In contrast to European urban architecture built along roads, individual buildings in Chinese cities are not the elements that enclose urban space. The courtyard system formed by the combination of buildings and wall enclosures constitutes an important feature of Chinese urban architecture. Boundaries do not only indicate a state of enclosure of material space, but also elaborate a form of social organization.

From the definition of courtyard, it is already not only the concept of physical space. The word "courtyard" is interpreted as "circumvallation," while "fall" expresses a residential behavior. According to this interpretation, "courtyard" in the Chinese context is an act of dwelling under the enclosure of space. Unlike the building as a unit of construction, the courtyard, as the smallest unit of traditional family dwelling behavior, embodies the conventional family system in its own spatial structure within the boundaries of the enclosed wall. Thus, it becomes a transcription of the strict master-subordinate, elder-child relationship in space. As a spatial expression of a social pattern, the courtyard structure itself and the process of repeated construction between them, while forming the urban lot, also embodies the traditional social characteristics. Secondly, the private ownership of land in the traditional society also kept the boundary of courtyard relatively clear. As a result, the boundaries and the courtyard walls above them became important boundaries, and the enclosed courtyard became an effective unit of analysis of the traditional land and social system.

After 1949, the spatial and temporal environment changed dramatically, from transformation of social systems and land and house ownership systems to intergenerational division of families and inheritance, all of which had a great impact on the boundaries of traditional courtyards. However, while the physical space reflects the changes in institutional, social and economic relations, it also lags behind the changes, and thus neither the redivision nor the integration of territorial units can strictly correspond to the spatial division, thus giving rise to "courtyards" with complex social relations and spatial structures. The boundaries of them are also gradually changing, from clear definitions of ownership to blurred and replaced by more fragmented ones.

2.2 Traditional Dwelling Boundaries in 20th Century Nanjing

Nanjing, one of the most affluent regions in China's history, has a large number of traditional dwelling buildings. In the course of modern development, the traditional residential buildings in the southern part of Nanjing have preserved their basic form or at least to some extent their basic spatial information. Therefore, the analysis of the spatial changes of their boundaries possesses historical value.

On the other hand, this paper is concerned with the mechanisms of change of traditional dwelling architecture in the 20th century. During this period, China went through the process of moving from a traditional society to a capitalist society, then to a collectivist society, and finally back to a market economy. During this period, the ownership and use of residential buildings have changed dramatically. Until now, it presents a variety of uses, such as belonging to schools or abandoned, etc. The analysis of the spatial boundaries of traditional dwelling buildings in Nanjing during this time period can reveal the spatial influencing elements and their influencing methods, which has certain research significance. (Fig.1)

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Figure 1. Traditional Dwelling in Nanjing. Source: Ziyu LIU

3. Research Methdology

This study employs a variety of methods to obtain details of the characteristics of boundary changes, as well as policies, forms of autonomous organizations, and ways of life of residents in different periods. First, historical documents were retrieved to understand the relevant forms and construction regulations of traditional residential buildings from different periods of history in order to grasp the universal structural patterns of their boundaries. Then, with the help of historical satellite images from the early 20th century, the locations and forms of representative traditional dwelling buildings were captured to obtain the structure and details of the historical space. By this means, the original spatial boundaries can be accurately determined and can be analyzed structurally and correlated with the nearby urban space at this time. For the policy and social organization of this period mainly relies on the relevant literature combing and the search of ancient texts to obtain, the research for the late Qing Dynasty to the early Republic of China has been quite fruitful, which can serve as an important basis for this paper to explore the elements of spatial influence.

The social system changes that occurred around 1949 are important, as private buildings and land were nationalized and redistributed during this period. By examining and compiling the official records of the Housing bureau (an official agency that managed the allocation of housing) on the allocation of residential buildings at this time, we understand how traditional dwelling buildings were used during this period. At the same time, the spatial structure and details of traditional dwelling at this time were compiled with the help of aerial photographs declassified by the National USGS in 1973, so as to infer the boundary patterns of traditional dwelling buildings. In this way, the boundary conditions of the traditional dwelling in the period of collectivist society are inferred. The policies of this period are available in government documents, and the lifestyles can be understood through interviews with existing residents.

A detailed study was conducted for the space of the contemporary traditional residential buildings. In cooperation with a specialized mapping company, the study conducted a first-floor plan to understand the functions and usage status of the building. At the same time, we interviewed and researched a

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number of current residents to understand their perceptions of the current boundaries and the state of use of the residential buildings.

4. The spatial Changes of the Boundaries

4.1 Boundaries of Traditional Dwellings in Classical Time

In traditional periods there were very strict guidelines for the construction of dwelling buildings. There are three distinctive features in the boundaries of these dwellings. The first, the most obvious, is the presentation of scale. According to the records in historical documents for the construction behavior of people of different social classes, the size of the boundaries of dwelling buildings was strictly regulated. For example, for officials of the first or second rank, the main hall could be 7 rooms, while for the houses of commoners, as long as they did not exceed 3 rooms, they could be "built as they saw fit"("随宜所盖") regardless of their depth and number of frames. This restriction on the shape and size of the building brought out the living patterns of different social classes. The second characteristic is the closed nature of the boundary. Traditional Chinese cities were built and governed according to the li-fang system, where the size of the street outline and the direction of the open door had to be controlled, and the private domain was divided from the city, thus a closed property was reflected in the boundaries of the living space. Of course, for some mixed residential and commercial buildings, there is also a partially open character. The third characteristic, the clear boundary property. Traditional society has clear rules for the trading of plots of land, so even if the buildings are not densely packed on the plots, the residents need to build walls to identify the land properties.

It is clear that the characteristics of the boundaries of living space in the traditional period are closely related to the traditional hierarchy of Chinese society and reflect the socio-economic structure as well as the method of governance at this time.

4.2 Boundaries and Traditional residential behavior

Traditionally, Chinese society was governed by rituals and institutions, and the proportion of its officials was low in the world at the same time. Therefore, as a living space for residents, dwelling's neutral symmetrical pattern is actually a microcosmic embodiment of a worldview. However, the boundaries of dwellings are not necessarily completely neutral symmetrical, but more a kind of boundaries related to roads and urban spaces, reflecting a characteristic of adapting to local conditions. At the same time, the boundary serves as a distinction between private land and buildings and public governance space, and its clear and definite material entity creates an internal world of dwelling within the boundary.

The relationship between residential behavior and boundaries is manifested in two ways. The first is that the boundary separates urban life and residential life, creating two separate systems. Urban life takes place in the space of commercial activities and public activities, and is clearly and distinctly delineated from residential space. The second aspect is the isolation of the physical space, i.e., the inability to clearly perceive the act of living in the city, and the inability to feel the concrete presence of the living space deep in the city. However, as clear and definite boundaries are not an absolute division in all cases. In the sequential arrangement of space, there is usually a screen wall in front of the first house of the dwelling, and the space formed between them, although in most cases there is a threshold of access such as a gate, most of them gradually take on the attributes of public activities as time progresses. This shows that the boundaries of traditional housing were in most cases clearly delineated, but they were also gradually blurred.

4.3 Redivision of Traditional Dwelling

After the original family form of gathering began to fade away, Nanjing's urban dwelling buildings began to be nationalized. They were assigned to residents in the form of individual rooms. However, the original spatial structure was not a pattern oriented to dense living, so the re-division of space became a specific operation. The information about the housing at this time can be clearly grasped from a map of Property from Housing Bureau with the map number 152035. (Fig. 2) This diagram reflects a common state of use of houses after communalization since the post-1949 collectivist society to the present. From some separate columns of numbers in the diagram such as 116.3, 33.6, etc., it is clear that the original building space was completely reorganized by dividing, mapping, and allocating the houses.
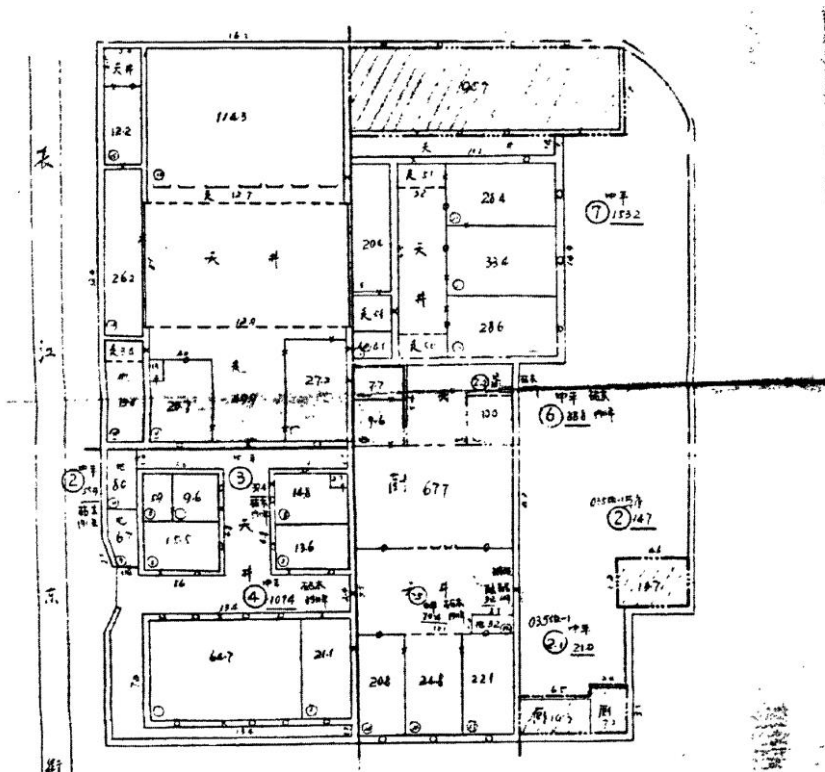

Figure 2. Map of Property. Source: Nanjing's Housing Bureau

The re-division of space has clearly led to three changes in the spatial structure. The first change is the fragmentation of space, with each individual room separating the original larger architectural space and forming a series of independent spatial sequences. The second change is the weakening of the original spatial sequence, a strong axial space for the reinforcement of ritual and hierarchy gradually disappears, replaced by an equal spatial relationship, and a relatively loose connection between individuals. The third change is the encroachment on the open space, where some activity space exists in the original space. However, when the functions are simplified, some outdoor spaces become meaningless and are gradually encroached upon.

This change in spatial structure becomes even more apparent when comparing aerial images from 1929 with property maps from the 1990s. (Fig.3) The re-division of space is a pragmatic combination of functions that produces a concept that approximates the minimal living space of modernism, allowing the individuals living in it to become independent of each other. This independence is also a response to the changing behavior of use.

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Figure 3. Comparison from 1929's Aerial Image to Map of Property in 1990s. Source: Drawn by Author

4.4 Transformation of The Boundaries of Traditional Dwellings

Starting from the traditional dwelling space, the boundary changes present a characteristic of blurring. The ambiguity of the external boundaries and the clarity of the internal ones became the main characteristics of the 20th century Nanjing traditional dwelling building boundaries.

The changing characteristics of the boundary are the external expression of the changing ownership relationship. In the traditional society, a whole dwelling unit belonged to a certain family community, so a clear and definite boundary was required on the outside, and this boundary was an important expression of exclusivity. Inside the dwelling, the family relationship was relatively close, so there was no need for internal boundary division. However, with the disintegration of family ties and the emergence of new fragmented residential relationships, the external boundary still exists, but it no longer possesses an obvious feature of exclusivity. As a result, the boundary becomes more and more blurred, and the internal space gradually becomes public and takes on urban properties. At this time, the internal boundaries of dwelling buildings begin to form, and these boundaries are based on the individual rooms in which the residents are located. Such boundaries are also exclusive in nature. In between the different boundaries, the original internal courtyard space gradually becomes an intermediate space between public and private, carrying the common life of different residents. It is worth mentioning that although this common living space is a shared space, because the external boundaries of the traditional residential buildings still exist, this common living space becomes a common living space with a certain degree of exclusivity.

5. Urban Institutional Elements

Changes in the land system have led to gradual changes in the elements that play a decisive role in spatial structure. In the early days of privatization, Nanjing's dwelling architecture was characterized by a distinctly ceremonial spatial structure. However, in 1949, the land and houses in the city were nationalized, which became the basis for the redistribution of land and houses. The original houses that were returned to the state became a grassroots social unit, which could be attached to a unit or managed by the housing authority. As a result, the originally connected buildings became fragmented and discrete in the convenience of distribution. This spatial characteristic was determined by the institutional elements at this time. However, despite the fragmentation, public service facilities were provided by the government, so the fragmented space maintained a stability for a certain period of time. However, after the property reform in 1988, the public service facilities provided by the units and housing bureau

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gradually disappeared, and the residents of public housing had to start thinking about their own needs such as washing and eating, which led to a renewed expansion of the fragmented dwelling units and the encroachment on public space to build the necessary space for living accessories. This kind of control over construction behavior and land ownership due to policy elements of different periods has led to drastic changes in space according to its regulations.

The control of the unit or the housing bureau over the building no longer has completely exclusive properties. Thus, the boundaries of traditional residential buildings no longer have a very strong practical need at this point. Instead, the ability to provide some degree of public service becomes an additional attribute of the redistributed traditional residential buildings. The blurring of boundaries thus has a very fundamental cause. On the other hand, the redistribution of urban living rooms is considered a social benefit, so that the ability to obtain a certain size of room to live in the city is a matter of personal interest. This orientation creates a more intensified border of small unitization.

6. Residential Behavioral Elements

The behavioral element does not have a decisive influence on space, as institutional elements generally do, and its influence is gradual. The change of usage changes with the times and the land system, especially after redistribution. Because of the need to satisfy the basic needs of life, and thus for reasons of basic physical needs, the behavior of occupants towards the use of space has led to changes in three ways. The first is decentering, as each resident is not related to the clan as in traditional societies, and thus a centripetal spatial characteristic gradually disappears. Residents are centered on their own dwelling units and use the public space in the ritual space as the activity space, forming a loose character. The second is the strengthening of private attributes, which is expressed in the gradual disappearance of public boundaries and the gradual clarification of unit boundaries. The clear boundary of the public boundary expresses that because of the loose behavior of living and activities, it no longer has an important meaning, and thus other residents in the city can freely access this boundary. On the other hand, the boundaries of individual units are clear, and each inhabitant moves within the confines of his or her own home in order to distinguish the different owners. This approach is the result of a long-term mutual compromise and struggle in a common living space that is not related by blood. The third aspect is the significant change in the flow of space use. This change makes public spaces and axes less of a traditional character and more of a convenience of use consideration.

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Figure 4. Boundaries of Internal Individual Units . Source: Author

7. Results and Discussion

The structure of a spatial evolution and its influencing elements can be clearly seen. As a material appearance, the boundary changes to reflect the residential behavioral elements behind it as well as the influence of institutional elements and their interrelationships.

The land system, housing system, unit system, household registration system, etc., as institutional elements, both during the Qing Dynasty and after the founding of the country in 1949, had a significant role in the shape, use, and construction of houses. This reflects not only the state governance system in different periods, but also the cultural and social views of Chinese society in different periods. The logic of the institutional dimension of change is the deeper reason behind its spatial change.

On another level, human behavior has a slower but more direct impact on space. Public activities require open space, while residential behavior requires relatively private space. The act of living transforms the space with its own characteristics, which are reinforced by the act of allocated living based on the public housing policy. Each resident lives in his or her own room, making the spatial sequence increasingly fragmented, and because the residents are no longer related to each other, the disorganization of the flow dissipates the original ritualistic space. The living behavior has a lot of influence on the space.

To sum up, the traditional residential architecture should conform to the traditional Chinese worldview at the early stage of its establishment, and as a result, different scales and forms were created, with boundaries being an important manifestation. This difference is not only reflected in the mandatory regulations, but also in the cultural perception. During the dramatic social changes in the 20th century, the institutional element, as the underlying element, determined the direction of spatial changes in traditional dwelling architecture in terms of ownership and distribution rights. The behavioral elements, on the other hand, as the base elements, played a role in its boundary changes at a more concrete level.

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8. References

Cerin, E., Sit, C.H.P., Barnett, A. et al. (2013). 'Walking for Recreation and Perceptions of the Neighborhood Environment in Older Chinese Urban Dwellers', *Journal of Urban Health*, 90(01), p. 56–66.

Chen, K., et al. (2016). 'A Study on the Space Characteristics of Ancient Ancestral Temples in the Taiping District of East China', *Journal of Asian Architecture and Building Engineering*, 15(3), p.365-372.

Deng, Z., et al. (2015). 'Collaborative planning in the new media age: The Dafo Temple controversy, China', *Cities,* 45 (6), p.41-50.

Fan, C. C. (1999). 'The vertical and horizontal expansions of China's city system', *Urban Geography*, 20, p. 493–515.

Faure, D. and Bo, Y. (2009), *Emperor and Ancestry: State and Lineage in South China*. Jiangsu People's Publishing House, Nanjing.

Harris, C., & Ullman, E. (1945). 'The nature of cities', *The Annals of the American Academy of Political and Social Science*, 242, p. 7–17.

He, S. J., Liu, Y. T., Webster, C., and Wu, F. (2009). 'Property rights redistribution, entitlement failure, and the impoverishment of landless farmers', *Urban Studies*, 45(9). p.1925-1949.

Hu, X. (2008). 'Boundaries and openings: spatial strategies in the Chinese dwelling'. *Journal of Housing and the Built Environment*, 23, p. 353–366.

Huang, T. (1997), *The Cultural Tradition of Chanshan*, Guangdong Higher Education Press, Guangzhou.

Li, D. and Xu, T. (2005), 'Space, institution, culture and historic narrative: a study of traditional settlement patterns and vernacular dwellings from a new perspective of humanism', *Architect*, 115(6), p. 8-17.

Li, S., & Siu, Y. (2001). 'Residential mobility and urban restructuring under market transition: A study of Guangzhou, China', *Professional Geographer*, 53, 219– 229.

Liu, D. (2000). *Chinese architectural history*. Chinese Architecture & Building Press, Beijing.

Liu, Y. T., & Wu, F. L. (2006). 'The state, institutional transition and the creation of new urban poverty in China', *Social Policy and Administration*, 40(2), p.121–137.

Pan, Y., Zhuo, X. and Shi, Y. (2015), '100 Years of two villages: study of modernization of rural settlements in Chaoshan area', *South Architecture*, 1(3), p. 71-78.

Solinger, D. J. (1999). *Contesting citizenship in urban China: Peasant migrants, the state and the logic of the market*. University of California Press, Berkeley.

Wang, Y. P. (2000). 'Housing reform and its impacts on the urban poor in China', *Housing Studies*, 15(6), p. 845–864.

Xu, P. (1998). 'Feng-shui models structured traditional Beijing courtyard houses', *Journal of Architectural and Planning Research*, 15(4), p.271-282.

Zhu, X., Zhang, J., & Chen, H. (2002). ,A case study on concentration and decentralization: Behavior and dynamic mechanism of spatial evolution in metropolitan area, Nanjing, China', *Chinese Geographical Science*, 12, p. 212–217.