

# Strategies for the Study of Metabolism Theory in Regional Culture

## Taking Luozhou Ancient Town in Fuzhou as an Example

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**Abstract**—Fuzhou City pays more and more attention to the protection of old cultural heritage. In-depth research is conducted on the Luozhou ancient town, known as "Little Fuzhou", to dig out its local humanistic feelings and old marks of urban renewal. The survey found that the town's cultural revival policy and the organic renewal of street architecture still have much room for improvement. In the process of investigation, the author thinks that through the renaissance of local culture, the integration of commercial economy can be promoted, so as to promote the appeal of cultural activities and restore the cultural memory of the city again.

**Keywords:** Luozhou ancient town, imperial examination culture, de-spiritualization, investigation, metabolism

### I. INTRODUCTION

Luozhou Town ("Fig. 1"), located on Nantai Island in Cangshan District, Fuzhou, covers an area of about six square kilometers and has a population of 10,000 or 20,000.



Fig. 1. Map of Luozhou ancient town (drawn by the author).

The Luozhou area can be described as the greatness of a man lends glory to a place. It is said that the reason why this place is full of talents is inseparable from its fertile soil. In the memory of the local residents, the river is clear and rich in freshwater fish. Because the river water is fertile, the fruits are extremely delicious. The "Red Orange of Minjiang River" filmed in the 1950s recorded the beauty of Luozhou one by one. There is also a riverway winding around the ancient town, so it is often called "carps' cave land".

Luozhou Town carries Fuzhou's long-standing cultural and historical memory. In the early years, people called it "Flowers Fairy Island". It is shaped like a green snail. It is said that the real birthplace of the legend of Miss Snail is Luozhou, so it is also called Snail Island.

As a famous cultural town in Cangshan District, many men of letters and senior officials come from this Peach Garden, and because of this, its unique advantages have been known by people everywhere. The local cultural outlook confirms everything that has happened in this area. All patterns remain the same but no longer have the cultural grandeur of the time. In the development of intangible cultural heritage today, the protection planning of cultural resorts is a definite strategy to be implemented in the future. The local government has also proposed strategies for planning and protection for many times, but has been slow to act. Based on own investigations, the author made some discussions on this cultural phenomenon.

In recent years, Fuzhou has paid more attention to the organic renewal of ancient buildings. From the previous Three Lanes and Seven Alleys, to the Shanghang and Xiahang Streets, which are currently being renovated, it is enough to see the government's emphasis on the revival strategy of the building complex. Due to the early large-scale demolition and reconstruction of Fuzhou, major changes have taken place in the original cultural status quo, resulting in the lack of some cultural scenes in the urban area and the loss of unique cultural taste. ("Fig. 2")

Fuzhou purple line protection planning

luozhou historical features area - current features evaluation map

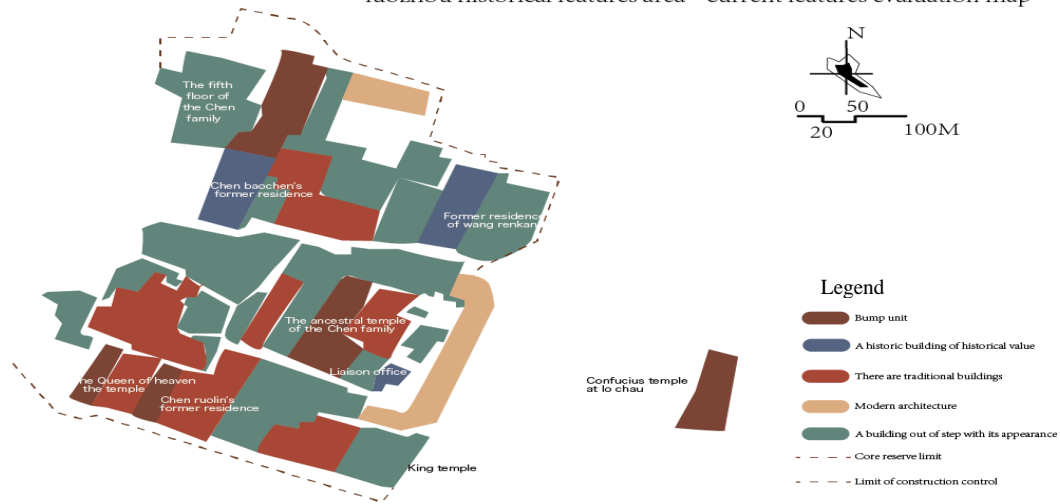


Fig. 2. Evaluation of the status quo of Luozhou ancient town (taken by the author).

II. RESEARCH ON ORGANIC RENEWAL AND TRANSFORMATION

In Zeng Zhaofen's "New Thoughts on the Development of the Old City — After Reading Mr. Wu Liangyong's 'Beijing Old City and Juer Hutong'", residential areas in the old city, the neighborhoods, alleys and quadrangle dwellings, their tiled beauty, their gray background against the magnificent architectural groups such as the Forbidden City as well as their peaceful living atmosphere is an organic part of the style of the ancient capital.

The "tiled" urban characteristics of the old city need to be maintained, the historical tone of the city is not be imposed, the entire city texture and human environment is not be damaged, the pattern of the old city is preserved, and the control of the additional damage of cement buildings on the original urban texture is strengthened. It has also achieved good management in vertical buildings to promote the overall environmental improvement of the old city. In the past, many construction and renovation work were the product of "inorganic" renewal, and it is necessary to follow the inherent laws of urban development and replace the old with the new. In his writings, Mr. Wu Liangyong proposed to protect the "integrity" of the old city pattern in development and "keep the characteristics of the tiled city of the old city". At the same time, Mr. Wu has also made many claims to limit the height of buildings in the old city.

Zhang Xiaojing said in "Urban Planning and Design (Landscape Design Direction) Organic Renewal Theory and Thinking" that organic renewal requires that urban construction should pay more attention to people and the environment, such as ecological environment and technical means. Secondly, it is also necessary to strengthen the awareness of historical protection. In addition, some aesthetic and cultural content should be included. The so-

called "organicity" in organic renewal emphasizes the organic integration of cities and nature. As the Chinese traditional view of nature believes, man and nature are unified, and the researches on the city need to be conducted with people-oriented thinking.

For the research on the development of urban organic renewal in traditional villages, researchers from various countries have already entered the research thinking ("Table I"). Howard proposed the Garden City Theory for organic urban renewal. Like the urban organic evacuation mentioned by Saarinen in the later period, Howard compared the town to an organism. The Garden City Theory has a stronger utopian color and is still of reference significance to the development of cities and society.

The Metabolism Theory is an updated thinking. It carries out the existing culture and connotation in a new way, which well illustrates the old saying of "taking the essence and removing the dross". All three people discussed the combination of man and nature, and all focused on a question that has been in people's thinking since ancient times, namely, how to control, coordinate and better develop the relationship between human and nature.

TABLE I. RESEARCH ON TRADITIONAL VILLAGE PROTECTION AND DEVELOPMENT PLANNING STRATEGIES BASED ON DARNING THEORY (DRAWN BY THE AUTHOR)

Organic renewal theory		
Scholar	Theory	Content / Impact
Howard (British sociologist)	"Garden City Theory"	It had a great impact on the later "Organic Evacuation Theory, Satellite City Theory, etc.", which laid the foundation for organic renewal theory and practice
Saarinen (Finnish American architect)	Organic Evacuation Urban Structure Theory	It thinks of cities as cells, directly affecting the organic entity
Represented by KenzoTange and Kisho Kurokawa	Metabolism Theory	It advocates the use of the latest technology and continuous improvement of living measures to adapt to new changes while maintaining the tradition
They all advocate the integration of man and nature, and aim at the comprehensive development of human society, and solve the coordinated development relationship between man and nature, man and society, city and village in cities.		

As for the question above, how to realize the symbiosis between man and nature is also a question that should be considered about how to maintain the original texture of regional cities and how to implement the strategy of "organic renewal" correctly in villages and cities.

It is necessary to continue the local context, respect the living habits of the residents, and oppose the commercial and economic erosion of cultural heritage; moderately mix functions, improve the interaction between people, and create some space environments that are conducive to people's contact and interaction, and increase the atmosphere of the city; efforts should also be paid to focus on the decaying old urban areas, start from the roots, find the social and economic background, grasp the nature of the decline; enhance the vitality of the city through public space, and restore the decaying urban neighborhoods to their original forms of context activation.

**III. ORGANIC UPDATE OF LUOZHOU**

Due to a preliminary investigation of Luozhou ancient town, it was found that the local environment is very different from the ancient town environment previously recorded in the books. Due to the limited protection and management of towns by the government and the people, and some misunderstandings during the management period, many cultural streets in the urban area were damaged, and a large area of buildings and streets inconsistent with the texture of the city appeared. The ancient town originally had a river winding around the ancient town. Due to the wrong implementation of the government's strategy, it was buried in the early stage, which has greatly changed the ecological environment of the ancient town. For the remaining problems of urban development today, the following sustainable methods are proposed:

*A. Protecting it from being destroyed repeatedly*

In the case of limited funds in townships, protection is a problem that must be solved at present. Many buildings in the ancient town have been rebuilt by residents. If this phenomenon continues to be ignored, the architectural form and style of the ancient town will disappear. In this case, the government must first take a friendly attitude, guide the

residents to protect the existing ancient building forms with reasonable compensation mechanisms and education, and refrain from excessive reconstruction and addition of illegal buildings. ("Fig. 3", "Fig. 4")



Fig. 3. Intention map of Luozhou ancient town (drawn by the author).



Fig. 4. Waterfront intention map of Luozhou ancient town (drawn by the author).

*B. Tailor-making cultural industries*

Due to the large removal of the original business population in the ancient town, most of the residents who settled first were agricultural production. Therefore, the government should launch a cultural mining strategy. If agriculture is still the main source of commercial economy, it is far from enough for local residents to maintain the status quo of urban areas. This should refer to the market research and marketing of cultural mining by Shanghang and Xiahang

Streets. Shanghang and Xiahang Streets leave the job to the merchants. While considering the profit points, the merchants are also thinking about innovation points. It is improper to consider economic operations with universal marketing. This is a good breakthrough. As long as business opportunities are seized, the ancient town's economy will be driven quickly.

**C. Implementing traditional cultural memorial**

The imperial examination culture has been developed for a long time. For the revival of the imperial examination culture, it must be considered in the form of organic renewal. The imperial examination system has been outdated for a long time, so this culture mainly implements the inheritance of cultural memory through memorial exhibition halls and public art so as to make the residents know what cultural flourishes the area once had.

**D. Carrying out folklore and art activities**

Due to the inspection of the ancient town, the ancient town has completely lost the form of cultural activities in the area. Due to the scarcity of the crowd, the crowd's activities in the area are in a poor state and the population is unevenly distributed, which makes the entire urban area appear a kind of lightly populated dreariness.

Folklore culture is a very lively form of revival of block culture. It also brings people together in this form. How this works is the focus of this assumption. The lively form of cultural activities will increase the popularity of the district. It can be linked to many aspects during the organization process, such as shops, bistros, tea rooms, cultural and creative products, and forms of publicity. This approach covers the local endemic cultural ambience and will better introduce culture to the crowd.

**E. Connecting high-density population area**

Today, the Luozhou ancient town has also been planned into the ecological corridor planning strategy. An ecological corridor in Taijiang District has been almost completed. At

present, most citizens have paid a visit to this area. For this kind of assumption, Fuzhou had a similar plan in the first two years — Fudao. Fudao's design is to introduce crowds to some sparsely populated blocks through this ecological corridor. The design of this ecological corridor received great acclaim in the first place. By word of mouth, people flocked to the corridor after witnessing its charm.

**F. Integrating ancient buildings with Urban Darning Method**

Many cities in Chinese urban renewal use the Darning Theory, for example, Zhuzhou Old City Renewal Project, a prefecture-level city. Due to the limitation of the natural topography, Zhuzhou is highly fragmented in terms of urban land, infrastructure, ecological greening, and culture. For this reason, in the update, they first adjusted the industry and space structure reasonably; secondly, they rationally allocated service facilities standards, increased public service facilities, and then improved urban transportation as well as the transportation environment. They made great efforts to darn the texture of the city, shape the characteristic spatial pattern, darn the social structure of the city; and finally implement the implementation strategy of classification, transformation and improvement.

The darning method is also used in the Zhenhai Old Town Renewal Project. Zhenhai Old Town is located in the east of Ningbo Central City. The old town has a long history of 2000 years. Since the reform and opening up, the rapid industrialization process has made the old town of Zhenhai gradually marginalized by the new city. The urban spatial pattern has undergone great changes with the adjustment of the industry, and traces of fragmentation of urban texture and style are everywhere. To this end, Zhenhai Old Town implemented some darning measures, relying on "process darning" to build a spatial network framework suitable for the old city, followed by "ecological darning" to restore the old city's ecological environment. Driven by the "urban texture and contextual darning", the process of historical city evolution continues.

TABLE II. RESEARCH ON TRADITIONAL VILLAGE PROTECTION AND DEVELOPMENT PLANNING STRATEGIES BASED ON DARNING THEORY (DRAWN BY THE AUTHOR)

Comparative analysis of Darning Theory and other theories			
	Theoretical name	Source of theoretical works	Theoretical focus
Foreign countries	Humanistic Theory	"History of Urban Development" published by Lewis Mumford in 1961	It emphasizes the principle of putting people first
	Urban Diversity Theory	"The Life and Death of Big American Cities" published by Jan Jacobs in 1961	It advocates small and flexible update models, and emphasizes the importance of city vitality
	Preservative Urban Design Theory	Epilede proposed "preserved city renewal"	The preservative urban design emphasizes the continuity of historical context and the spirit of preservation places in urban renewal.
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	Collage Theory	The "Collaged City" published by Colin Law in the 1970s	It has an inclusive spirit of urban thinking and promotes the coexistence of multiple collages with multiple orders and characteristics.
	Historical District Revival Theory	"The Renaissance of Urban Historic Blocks" published by Steven Tiersdale and Tim Heath in 1996	Revitalizing and protecting blocks and buildings

Comparative analysis of Darning Theory and other theories			
	Theoretical name	Source of theoretical works	Theoretical focus
In China	Wu Liangyong's "Organic Renewal" Theory	The Organic Renewal Theory	The first is the organic integrity of the city, the second is the organicness of the cell tissue renewal, and the third is the organicness of the renewal process.
	Ruan Yisan, "Ancient City Protection" Theory	"Protection Theory and Planning of Historical and Cultural Cities"	Authenticity, integrity, readability, sustainability
	Darning Theory	Developed from Collage Theory to the present	It deals with various inconsistencies in the process of the transfer of old and new urban and rural areas, preserves historical sites, preserves the urban and rural history, optimizes the spatial structure, and inherits the urban and rural context

Relevant theories at this stage are all derived from urban renewal or old city protection, with different emphasis. Due to different social stages and development needs, urban protection also has different protection requirements and objective conditions. Related theories are in line with the requirements of society at that time for urban or rural protection. The protection and development requirements of traditional villages are different from those of cities and other villages. They focus on the protection of physical space or historical and cultural protection, which is difficult to meet the needs of traditional village protection and development planning (see "Table II").

Through comparative analysis, the Darning Theory pays more attention to the inheritance of the context than other theories, which uses the integration of the historical tradition and modern life of the Luozhou ancient town to maintain a balance between ancient culture and architectural protection and urban development.

1) *"Darning" originates from collage, but it is not a simple "collage"*: Darning Theory comes from Collage Theory. It was originally applied to urban renewal. For the collage processing of urban blocks, it can well preserve the historical rudiment of urban development. However, the dynamics and diversity of cities far surpass the rural ones. The ecological environment, historical and cultural environment of villages and towns are relatively fragile, and the texture and style of villages are relatively single. Therefore, they can only start with point-type darning, and it is not appropriate to carry out diverse collage processing. In the protection of the village, it is not appropriate to simply collage a large number of typical traditional features in the village, and appropriate darn patchwork should be carried out according to the different current conditions of the building.

2) *"Darning" is not a "pseudo" tradition*: Most of the famous historical and cultural villages have become local business cards, marking the heritage of the local culture and representing the local image. For the places that have been named, under the comprehensive guidance of social mission and industrial promotion, a large number of cultural protection units and historical monuments are restored, and their development is expanded on this basis. Part of it was completely built into a scenic area, and the traditional

"superficial" and "vulgar" seemingly inherited the context and obtained economic benefits. But in fact, it lost the significance of authenticity and integrity, which led to the disorder of the traditional context and created a lot of cultural shells. As time passes, it has been reduced to "all in the same key", "all in the same scenes" and "all in the same traces". To darn villages and towns, it is necessary to firstly emphasize that the ultimate goal of darning villages and towns is to inherit the traditional context of Luozhou and improve the living environment.

3) *"Darning" advocates preservation-repairing-continuing*: Darning Theory first advocates the preservation and protection of buildings (structures) with traditional features such as cultural relics and historic sites, and the restoration and improvement of environmental elements, buildings (structures) with harmonious features, and the reconstruction of environmental elements, buildings (structures) with uncoordinated features. On this basis, according to the villagers' needs for the production and living environment, functional weaving is carried out, and finally the traditional style is continued, and the traditional context is lively inherited.

#### G. Making use of Metabolism Theory

Research on Future Urban Metabolism from the perspective of the former and the status of the existing updates, it is necessary to further study the transformation of the internal mechanism of urban metabolism, and integrate the research concepts of urban metabolism in the early stages of urban resource and environmental early warning and sustainable development policy formulation to build a reasonable and effective urban metabolism index system. In the development of the concept of urban metabolism, concepts such as social metabolism, industrial metabolism, and ecosystem metabolism should seek common points while reserving differences with urban metabolism. "Table III" is an analysis of these concepts.

TABLE III. RESEARCH ON TRADITIONAL VILLAGE PROTECTION AND DEVELOPMENT PLANNING STRATEGIES BASED ON DARNING THEORY (DRAWN BY THE AUTHOR)

Differentiation and Analysis of concepts related to urban metabolism				
Concept	Definition	Research object	Research methods	Focus
Social metabolism	The process of the exchange of matter and energy between human society and the natural environment system	City, country or larger scale objects	Multi-scale comprehensive assessment of material flow analysis and social metabolism	It focuses on the efficiency evaluation of material input and output during the social macroeconomic development process
Urban metabolism	The process of inputting resources and energy as well as outputting waste in urban systems	City	It mainly includes material flow and energy analysis, etc.	It focuses on a systematic analysis of material, energy and resource flows within the boundaries of urban systems
Industrial metabolism	The process by which raw materials are extracted and processed into products and wastes	An industrial process	Material flow analysis, useful energy analysis, etc.	Elemental or product flow analysis at different scales
Substance metabolism	The flow of material elements in a specific space-time system	Element, compound or product	Material flow analysis	An analysis focusing on one or more elemental flows; uncertain spatial boundaries
Eco-economic metabolism	Direct or indirect energy input and output during the production of products or services	Eco-economic systems, such as cities, villages, woodlands, water bodies, etc.	Emergy analysis method, emergy ecological footprint method	It expanded the scope of system accounting, but issues such as double counting and service accounting are controversial

H. Thinking about effective communication strategies

It is necessary to increase publicity, which is mainly about in what form, what kind of strategy to attract the masses, and how to promote the Luozhou culture. It is necessary to integrate local characteristics to carry out publicity. The purpose of publicity is to take the ancient town culture as the core. Publicity should be based on the

core points to integrate the streets in a planned way and to use the surrounding resources. Commercial propaganda is also possible, but it can't be carried out blindly and excessively, which will be counterproductive. To build an exclusive Luozhou brand image, it is needed to work hard to build a good image of the ancient town and carry out some original folk arts and cultural activities appropriately.



Fig. 5. The waterfront bridge direction map in Luozhou ancient town (drawn by the author).

IV. CONCLUSION

In the early years, Luozhou ancient town has been regarded as a village and town worthy of cultural protection and transformation. There have been some problems in its development and protection, as well as in the government and residents' supervision and implementation strategies, which has resulted in the stagnation of the planning strategy and the inability to pool funds for reforming of the ancient town. Many scholars have also made suggestions for this.

The old man with the memory of the ancient Luozhou has gradually aged and entered his homeland. It is sincerely hoped that before these memories disappear completely, Luozhou will return to the prosperity of the towns and cities of the past, so that a piece of cultural land will not be submerged in the newly built new buildings and private houses. The growth of Fuzhou should leave Luozhou a cultural homeland, and the present generation should recover the old hometown style for the older generation in Fuzhou. The idea of organic renewal of Luozhou ancient town still

needs to be further weighed. ("Fig. 5") It is hoped that Luozhou can revive its cultural pomp in the near future.

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