

Article

Exploring the Transformation in the ‘Spirit of Place’ by Considering the Changed and Unchanged Defensive Spaces of Settlements: A Case Study of the Wugoushui Hakka Settlement

Yanfeng He ^{1,†}, Chie-Peng Chen ², Rung-Jiun Chou ³ , Haifeng Luo ^{4,*} and Jing-Shoung Hou ⁵

¹ Ph. D. Program in Design, Chung Yuan Christian University, Taoyuan City 32023, Taiwan; yanfeng@cycu.org.tw

² Department of Interior Design, Chung Yuan Christian University, Taoyuan 32023, Taiwan; chiepeng@cycu.edu.tw

³ Department of Landscape Architecture, Chung Yuan Christian University, Taoyuan 32023, Taiwan; rungjiun@cycu.edu.tw

⁴ School of Cultural Resources, Taipei National University of the Arts, Taipei 11201, Taiwan

⁵ School of Architecture, Tianjin University, Tianjin 300384, China; hounfu@nfu.edu.tw

* Correspondence: d10651006@chai.tnua.edu.tw

† Current address: Department of Landscape, Fujian Fanya Vision Environmental Design Engineering Company, Fuzhou 350028, China.



Citation: He, Y.; Chen, C.-P.; Chou, R.-J.; Luo, H.; Hou, J.-S. Exploring the Transformation in the ‘Spirit of Place’ by Considering the Changed and Unchanged Defensive Spaces of Settlements: A Case Study of the Wugoushui Hakka Settlement. *Land* **2021**, *10*, 490. <https://doi.org/10.3390/land10050490>

Academic Editor: Keith Halfacree

Received: 15 February 2021

Accepted: 1 May 2021

Published: 5 May 2021

Publisher’s Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Abstract: Over generations, economic development has accelerated traditional settlements in Taiwan while losing traditional culture. In Hakka villages, this is manifested in the changes in defensive spaces, the ‘spirit of place,’ and land use. Although some progress has been made through research into related issues, a correlated view has been missing. To explore the connection between the ‘spirit of place’ and defensive spaces in Wugoushui, a traditional representative settlement in Taiwan, this paper probes three questions: What are the changes in defensive spaces? What are the changes in the spirit of place? What are the connections between them? Taking the sixteen criteria of secure defensive space as the theoretical foundation, through more than a year of structured observations and in-depth interviews with ten representative residents, and based on context analysis and site analysis of the information collected, this paper has concluded that, although the actual functionality of Wugoushui settlement’s spiritual, behavioural, and physical defences have disappeared, cultural characteristics related to the settlement traditions, including religious beliefs, trust, sense of belonging, street network, nodes, institutions, territory, and social networks, constitute a concrete manifestation of the defensive space and the spirit of place as of today. This research contributes to developing a theory of the relevance of the spirit of place to the defensive space of settlements from a sustainability perspective and improving the cultural preservation and land management of traditional settlements.

Keywords: Fengshui landscape; crime prevention; safety environment; place identity

1. Introduction

With the rapid development of commercialisation, urbanisation, and globalisation, traditional settlements have been homogenised to gradually abandon their original geographical features and traditions, resulting in the loss of the sense of place [1,2]. Among them, globalisation promoted population shift, resettlement, and cross-cultural exchanges [3], which resulted in the degraded physical environment, homogenisation of settlements, and the loss of residents’ memories. Meanwhile, urbanisation undermined the life functions of streets and alleys in settlements [4]. Such geographical features and traditions are distinctively characteristic and are referred to as the spirit of place [5]. If a place’s characteristics are homogenised, its spirit of place is likely to change drastically. Indeed, spirit of place plays an important role in the diversity and sustainability of globalisation [6]. The spirit of place is also the driving force for the sustainable development of traditional settlements [7],

while the defensive space constitutes an integral part of traditional settlements' culture and layout [8]. Thanks to the rational planning and use of land and natural resources, traditional settlements in Taiwan have not only shaped defensive spaces but also established the spirit of place [5,9]. What are the changes in the defensive space of a traditional settlement? What impacts do the changes in defensive elements pose on the spirit of place? Answers to these questions are essential in studying the changes in defensive spaces and the spirit of place.

Specific achievements have been made in studying the spirit of place and traditional settlements' defensive space. While discussions on the former have usually integrated with urban preservation, cultural preservation and environmental conservation [10], discussions on the latter have primarily focused on urban design, environmental psychology, architecture, Fengshui or religion [11]. Both areas have attracted researchers' attention, but no exploration has been made so far into their relationship. This paper focuses on the current administrative area of Wugou Community, Wanluan Township, Pingtung County [12] to discuss the spirit of place of historical sites in changes in the key criteria of defensive spaces. As the times and the land use changed and they faced the challenges of inheritance and preservation, the spirit of place and the defensive space of Taiwan's traditional settlements tended to change [13,14], which hindered the sustainable development of settlements. Fortunately, the implementation of Taiwan's Law of Cultural Assets Preservation has constantly been improving the protection of cultural assets and standardising the related land-use [12] while creating favourable conditions for preserving the spirit of place and defensive space of Taiwan's traditional settlements. Wugoushui settlement is located in Wanluan Township Pingtung County, Taiwan. The local environment's characteristics, a historical context worthy of preservation and the artistic values of Wugoushui's architectural forms make it the only multi-surname Hakka traditional settlement in Taiwan with an identifiable cultural heritage [15]. This creates objective conditions for the preservation of the settlement's defensive space. Although traditional buildings in Wugoushui are relatively well preserved, the ageing of residents and the young's central outflow are widely recognised [16]. Besides, the use of agricultural land in Pingtung County has constantly been changing due to the collective impact of land use policies, socio-economic development and urbanisation [17], which may result in changes in the defensive space of settlements, changes in the spirit of place and difficulties in passing on cultural traditions. This paper carries on the research made in the safety key factors for the traditional settlement landscape. In theory, this research based on the key elements of traditional settlements' security layout, which includes three aspects and sixteen criteria [18]. For the case study, the representation of the Wugoushui Hakka settlement's critical security elements was analysed to explore further the changes in the spirit of place.

It takes an approach that combines structured observations, in-depth interviews, site analysis, content analysis and key security criteria of a defensive space to explore the relationship between Wugoushui's spirit of place and its defensive space. The research results broaden the horizon of discussions on the relationship between the settlement defensive space and the spirit of place under the impact of agricultural land-use changes and provide valuable insights for settlement managers, culture and history professionals regarding land-use management and preservation of traditional culture. The rest of the paper is structured as follows. Section 2 pays attention to the spirit of place and defensive space theories and makes an initial exploration of the relationship between the two. Section 3 describes the empirical research and analytical methods. Section 4 presents the research results concerning the changes in the spiritual, physical and behavioural aspects of Wugoushui's defensive space. Section 5 explores Wugoushui's spirit of place changes based on the changes in its defensive space. The last section briefly presents the main conclusions and outlines the directions for future research.

2. Literature Review

The literature review here mainly covers definitions and research into spirit of place, defensive spaces of traditional settlements, and the relationship between defensive space and spirit of place.

2.1. Definitions and Research into ‘Spirit of Place’

This paper explores the spirit of place, including the definitions and current research.

Concerning the definition of “spirit of place”, it is a concept that originated from Rome, also known as *genius loci*. Norberg-Schulz suggested the academia’s understanding of spirit of place varies as time and the research perspective change, whereas on the whole, a tendency of continuous improvement is demonstrated. He believed the spirit of place consists of two parts, the structure and the significance. The former consisted of the essence, form, texture, and colour of things. At the same time, the latter referred to the relationship arising from the interactions between people and the place, including the sense of direction and the sense of identity [5]. ICOMOS (International Council on Monuments and Sites) believes the spirit of place consists of tangible (physical) elements and intangible (spiritual) elements. The former covers five aspects, including site and buildings, and the latter covers eight aspects, including memory and oral narration [3]. The spirit of place covers three levels: the original, the changed, and the public’s spiritual expectations [19]. The spirit of place refers to the sense of direction and sense of identity that people obtain in the place, where place includes the natural, the human-made and the human environment [20]. From the various definitions of the spirit of place mentioned above, it can be said that the researchers had different focuses, so their definitions are incomplete. Norberg-Schulz discussed the spirit of place focusing on the aspects of the physical environment and people but did not cover residents’ behaviour. At ICOMOS, Tang and Ye interpreted the spirit of place from the physical and spiritual aspects but did not touch on the relationship between people and the place. The researchers primarily focused on spiritual and behavioural aspects of the spirit of place but rarely mentioned the physical aspect. Therefore, the spirit of place means that objects interact with the place and develop characteristics and atmosphere different from other spaces. The spirit of place consists of physical, spiritual and behavioural aspects.

Regarding the current researches on the spirit of place, Brook explored the spirit of place from human geography and the design of the landscape and architecture [21]. In terms of the current research on the spirit of place, the available literature shows that scholars have mainly explored the spirit of place from human geography and the design of the landscape and architecture [22]. Entrikin, Cojanu, and Yu discussed places from the perspective of human geography. They believed that there are physical, logical and imaginative relationships between the space where people live and their culture and highlighted the importance of location, proximity and traditional elements of a place to the spirit of place [23,24]. Wang talked about the spirit of place from the perspective of landscape design and believed that the spirit of place and the landscape characteristics influence each other. Therefore, the changes in time of the spirit of place will adjust the landscape design philosophy [25]. Others have discussed the spirit of place from an architectural perspective, believing that place was subject to the impacts of the physical environment, cultural factors, and human behaviour [26–28]. Scholars have studied it from various aspects. However, these were defective and insufficient to pay too much attention to traditions and fail to develop joint and objective standards for their studies [29]. Most scholars explored the spirit of place from their perspective of space, behaviour and psychology of place or a combination, while few discussed spirit of place with all the three aspects under consideration. These very characteristics constituted the main aspects of a defensive space [18]. Therefore, this paper intends to explore the spirit of place from the space, behaviour, and spiritual aspects.

2.2. Defensive Spaces of Traditional Settlements

This section mainly covers the theories about defensive space and the researches on defensive space.

Concerning the theories and definitions of defensive space, the academic's understanding of defensive space has evolved from the territoriality of animals to the defensive space of human settlements, in an improving trend in general. From the perspective of territory, Hall analysed the reasons for forming defensive spaces as being, on the one hand, to grab the spaces of others and, on the other, to protect one's territory from infringement [30]. He proposed animal's defensive space from the territoriality aspect. Jacobs presented the significance of "natural monitoring" of streets, alleys, plazas and other public spaces for settlement security [31]. Indeed, settlement-based ethnic groups, for the considerations of security, live nearby [32] and build defensive spaces. The functions of defensive space include surveillance, guarding, refuge, and fierce counter-attack [33]. In traditional settlements, people constructed safe living environments with spiritual, physical and behavioural defences [18]. Jacobs and Hu believed that a defensive spatial layout is of great significance to a safe living space. What is a defensive space? What is the relationship between defensive space and safe settlement? The defensive layout of traditional settlements involves three defence levels: external spaces, internal structures, and house/building spaces [34]. In this sense, settlement defensive spaces are defined as collective image-embedded living places designed to resist the invasion of foreign enemies, provide shelter from natural disasters and construct secure locations; all of which are related to the environment, climate, regional cultures, and living habits of the settlement [7]. Therefore, a defensive space is the basic element of a safe place, and people's direct feeling of a defensive space is the sense of security.

About the current researches on defensive space, researchers have realised the importance of defensive space in traditional settlements and explored defensive space from different perspectives. Defensive spaces have been studied separately or as two-factor combinations of the physical environment with behavioural and psychological aspects and have rarely explored to integrate all three. Taking "small forts" and neighbourhoods for example, Zhang and Song discussed the layout of settlement's physical defensive spaces [35]. Wang and Hou interpreted the layout of a settlement's defensive space from the standpoint of physical and spiritual defences but without a behaviour-based exploration [36]. From the perspective of environmental psychology, Wang believed that reasonable environmental planning could reduce crime and people's crime-fear psychology. In doing so, they suggested that settlement boundaries, public spaces and private spaces affect the settlement's defensive layout [37]. The researchers explored defensive spaces involving buildings, courtyards, streets, alleys, public spaces and other physical environments [38]. However, such critical defensive spaces are facing a crisis of decline and a failure to preserve. For example, affected by environmental factors and urban development, the defence works of Panama's Caribbean coast were included in UNESCO's List of World Heritage in Danger in 2012 [39]. Defensive space has been discussed by researchers from different perspectives. However, few have explored defensive spaces based on the relationship of the three. Although researchers believe that places are vital to security, they have seldom discussed the spirit of place from the defensive space perspective. It can be seen that a defensive space is a secure place built by humans for the purpose of safety, which makes it an important place to study the relationships between different people, between people and nature, and between people and society. Therefore, defensive space is very important on the one hand and is difficult to preserve on the other.

2.3. Relationship between Defensive Space and Spirit of Place

The relationship between the spirit of place and defensiveness is reflected in the following: the sense of security in the spirit of place and the defensive space's spirit of place.

Regarding the sense of security in the spirit of place, researchers studied different subject areas to explore security and the sense of safety of places. Tuan proposed a “sense of place” based on the concepts of home [18,22] and studied the relationship between people and place from the perspective of topophilia [40]; the security of a home is the spirit of place. Norberg-Schulz proposed that the spirit of a place contains a sense of its identity and direction [5]. The sense of identity and sense of direction constitute security elements. Astuti believed that the definition of actions and geography in spaces revealed the relationship between behaviour and residence [41]. Astuti demonstrated that the physical, spiritual, and behavioural aspects of a place influence the spirit of place. Space definition establishes the territoriality of a place. Jorgensen and Stedman proposed place attachment, place dependence [42] and believe security to be one of the fundamental conditions of place attachment. Relph proposed that the sense of belonging and rootedness affects the spirit of place and involves three major elements: the physical conditions and buildings, the activities happening in the physical environments and the scope of their meanings [43]. These researchers mentioned the relationship between security and the spirit of place from the aspects of home, sense of identity, and space definition, but they did not identify clearly what relationships exist between security and spirit of place. Therefore, this paper discusses the spirit of place from the perspective of defensive space.

Concerning the spirit of place of defensive spaces, defensive space is vital to the spirit of place, and researchers have discussed the relationship between the two from different aspects. Norberg-Schulz suggested that a human residence is used to secure the living space and reflect places’ spirits in terms of space features, memory, and other aspects [5]. Moreover, the spirit of place is the impetus for the world’s sustainable development, which plays a guiding role in the sustainable development of traditional settlements [3]. Traditional Hakka settlements show strong external defensive layouts [44,45], and their landscapes have been characterised by features including buildings and layout morphologies [46]. Maslow believed that material needs and psychological safety constitute the basic needs of human survival [47]. According to Maslow, safety is a key factor of the spirit of place, and the safe environment created by a defensive space is a basic human need. Therefore, it is reasonable to discuss the spirit of place from the changes in the defensive space. We suggest that defensive spaces are closely related to the spirit of place. Exploring the transition of the spirit of place over time from the changes in defensive spaces is an important question that should not be overlooked. Therefore, to discuss the spirit of place in defensive space settlements, it is necessary to return to key criteria for traditional settlements’ security layout.

In summary, research on defensive space’s spirit of place should aim at sustainable development, considering how to promote settlement’s cultural preservation and improve residents’ quality of life while protecting cultural traditions. This paper explores the changes in Wugoushui’s spirit of place through data collection, data analysis and provides a reference case for the sustainable development of settlements.

3. Research Methods

Two data collection methods (structured observation and in-depth interviews) and two data analysis methods (content analysis and site analysis) are used in the paper. The steps of this research include the collection of theories, field investigation, and data analysis (refer to Figure 1). The theories cover the spirit of place and defensive space, while data collection includes structured observations and in-depth interviews, and data analysis provides text analysis and places analysis.

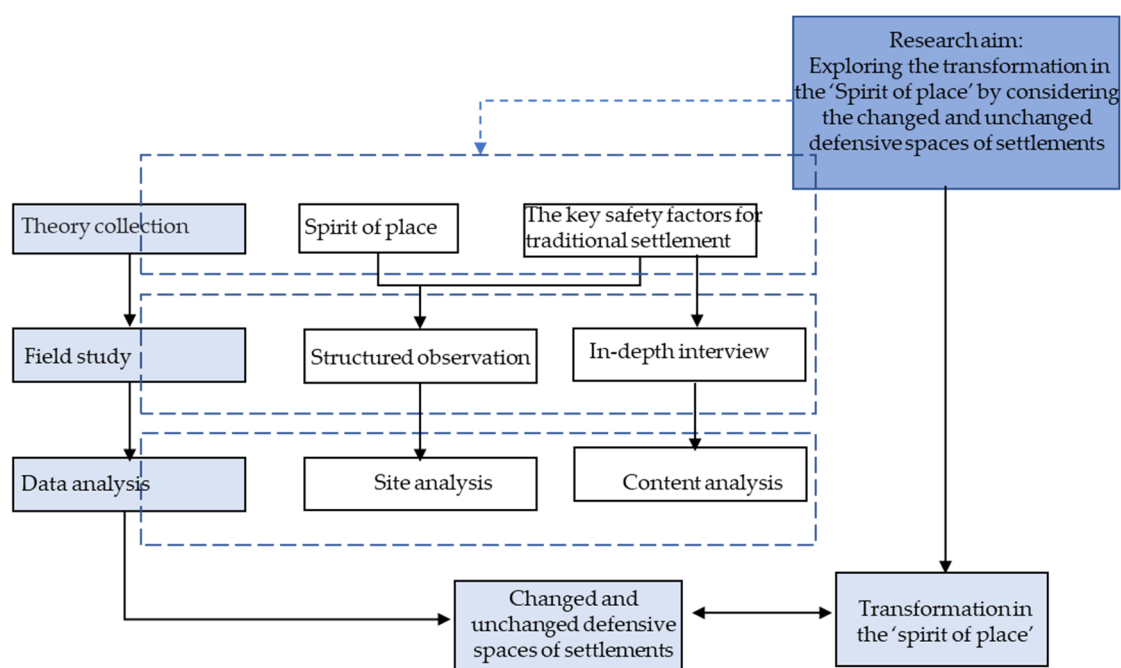


Figure 1. The research framework.

3.1. Structured Observation

Structural observation is a scientific method of data collection that falls within the scope of observation survey. It allows researchers to collect information and resources by observation [48]. Usually, it is used in the field stage and can be integrated with visible checklists for relevant visual information during observation tasks [49]. With the 16 key security criteria of a defensive space [18] as the checklist, the researcher carried out ambulatory observations on the Wugoushui Hakka Settlement repeatedly for more than a year to collect information concerning the physical, spiritual, and behavioural defences within the settlement's defensive spaces, thus providing materials for later in-depth interviews with the residents.

3.2. In-Depth Interviews

In-depth interviews are a unique qualitative research method in which an interviewer probes interviewees' answers by asking further detailed questions [50]. In the field investigations, in-depth interviews allow the researcher to collect data in a more profound or more integrated way [51]. In this paper, using the 16 key security criteria of traditional settlements [18] as the foundation, structured and semi-structured questionnaires were used for the in-depth interviews. Ten interviewees were selected based on the following principles. First, they are willing to be interviewed, and they understand the 16 key security criteria of traditional settlements; second, they have been living or working in Wugoushui for more than ten years and have gained solid understandings of the settlement; third, they are somehow related to the security criteria in terms of their interests, hobbies, and occupations. The ten purposively selected interviewees included the former Village Chief Song (I1), the current Village Chief Li (I2), Director Liu (I3) and staff Liu of the Wugoushui cultural heritage administration (I4), Director Li of the seniors' activity centre (I5), Wang of the seniors' activity centre (I6), resident of the collective Huofang Zhong (I7), resident/carpenter Lu (I8), Liu of the Bogong Association (I9), retiree Madam Liu (I10). The interview involved the following questions: What are the changes in the 16 security criteria? What are the changes in residents' understanding of the 16 security criteria? (June 2019 to June 2020). Every interview lasted for about 2–4 h. Sound recording and notes were used as supplementary tools, and the interview information was then transcribed for analysis.

3.3. Content Analysis

3.3.1. Method Introduction

Content analysis is one of the essential research methods in social sciences in which words, images and other data are analysed to reveal certain social phenomena [52]. Krippendorff believed that with content analysis, researchers could make valuable inferences according to certain words, themes, concepts or other aspects of existing texts [53–55]. In this paper, the content analysis based on the key criteria of defensive space [18]. For example, in the Wugoushui Settlement, 40% of interviewees mentioned their faith and worship at the Bogong Temple, suggesting that the temple and the related culture are essential elements in the defensive spaces of Wugoushui as well as the spirit of place of the settlement.

3.3.2. Process

Three coders (CO1, CO2, CO3) are assigned in this paper: the academic supervisor, one of the ten interviewees (randomly selected), and the first author. They work together to classify and evaluate the interview content. As the first step, transcripts are classified into sixteen categories based on the sixteen criteria of traditional settlements' security layout [18]. Then interviewees' talks are summarised by theme, and themes of the same attribute are put into the same category. After that, mutual agreement (P) and reliability (r) are made according to the following formula proposed by Holsti [56]. Among them, the mutual agreement result is reliable if the value is greater than or equal to 0.7 [56]. The reliability result is reliable if the value is greater than or equal to 0.9 [57].

3.4. Site Analysis

Site analysis addresses the purposes of land development and site design more effectively through the analysis of the site and its environment [58]. Site analysis includes physical, biological, and cultural attributes, such as land use and open space [59], and it plays an essential role in sustainable environmental design. The site analysis of this research is based on the map plotted during the Japanese occupation and modern maps. Analysis maps of Wugoushui's defensive space are plotted with the history, natural environment, traditions, and culture of Wugoushui being integrally considered (refer to Figures 2–7 for details). Take Figure 2 as an example. It is a map from the old times which depicts Wugoushui's defence layers based on structured observations and in-depth interviews.

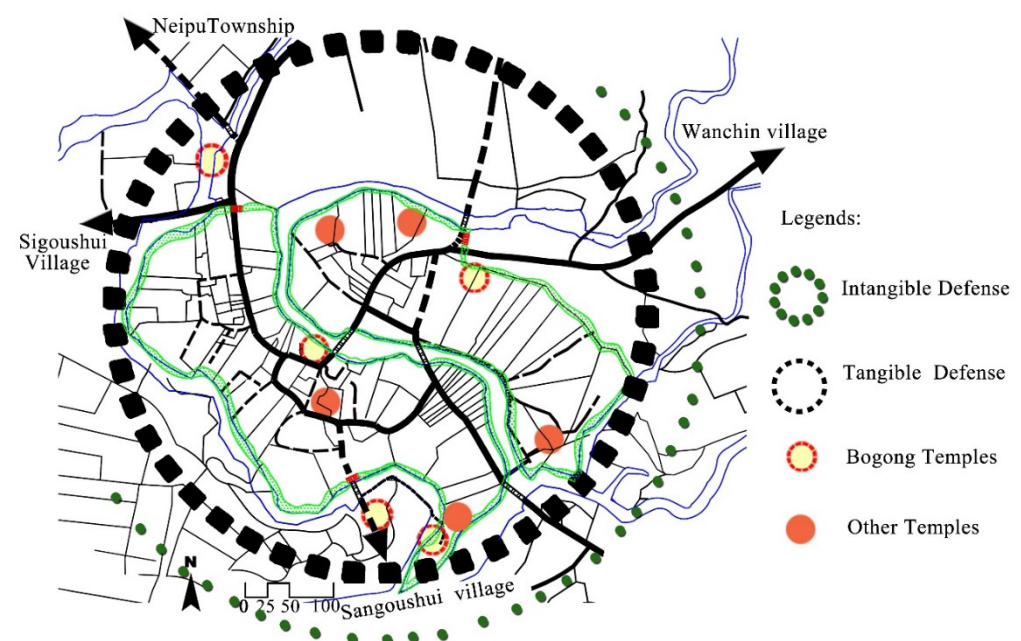


Figure 2. Defence Hierarchy of Wugoushui Settlement.

4. Analysis and Changes in Wugoushui's Defensive Space

The section mainly covers content analysis and changes in wugoushui's defensive space.

4.1. Reliability Analysis and Content Analysis

This section consists of reliability analysis and content analysis. For reliability analysis, three appraisers analyse interviewees' content. They consolidate interviewees' content into different themes for content analysis.

4.1.1. Reliability Score

This paper takes the first criterion Fengshui Landscape (A1), Topography (B1), and Institution (C1), respectively from the three aspects of traditional settlement's safe layout as the scope of reliability analysis in this research. Because the three criteria account for about 19% of the sixteen criteria, the number of samples taken is about 19% of the total number of samples [60]. Such a sampling percentage is in line with what is suggested by Wimmer and Dominick for reliability analysis, which is 10–25% of the number of samples after coding. Three coders then summarise the themes related to the three criteria from the transcript of ten interviewees' recordings and identify the number of interviewees that mention each theme.

The theme consolidation results show that three coders have summarised the same number of themes with similar semantics from the three criteria, but the number of interviewees that mention each theme varies. This paper takes the count of related themes being mentioned by interviewees as the benchmark and calculates the mutual agreement of the three codes when calculating the mutual agreement; themes extracted by coders from interviewees' recording must be the same to reach a mutual agreement.

The calculated P-value of A1, B1, and C1 is 0.88, 0.87, and 0.87, respectively; all mutual agreements are more significant than 0.7. The calculated r-value of A1, B1, and C1 is 0.96, 0.95, and 0.96. All reliabilities are more significant than 0.8. Therefore, the content analysis result of this research is highly reliable.

4.1.2. Content Analysis

The themes consolidated by three coders from the transcript of ten interviewees' recording are as follows. Themes that more interviewees mention have higher reliability and significance. For example, in Fengshui Landscape, blocking intruding enemies and blessings are mentioned seven times, indicating that in the Wugoushui settlement, residents believe that blocking intruding enemies and blessings are relatively significant.

To making more focused and persuasive, some themes are taken from the above table for further discussion. Themes that are mentioned by more than half of the interviewees (that is, six and above) are used for analysing the changes in Wugoushui's defensive space (refer to Table 1).

Table 1. Themes concluded in the research.

Aspects	Criteria	Themes
Spiritual defence (A)	Fengshui Landscape(A1)	1.Blocking intruding enemies; 2. Blessings; 3. Modern Yang/Yin-dwellings' lower Fengshui dependence and lower defensive roles.
	Religious Beliefs (A2)	1. Praying for peace; 2. Deterring foreign enemies.
	Symbol of Physical Defence (A3)	1. Warning foreign enemies; 2. Providing mental comfort; 3. No defensive symbols on new buildings.
	Trust (A4)	1. Resisting foreign enemies in an untied way; 2. Promoting mental security; 3. Declining trust.
	Sense of Belonging (A5)	1. Reinforcing attachments to the homeland; 2. Enhancing the awareness of defending the homeland; 3. Strengthening united resistance against intrusion.

Table 1. Cont.

Aspects	Criteria	Themes
Physical defence (B)	Topography (B1)	1. Living along the river; 2. Making the settlement safer.
	Boundary Defence (B2)	1. Physical defence roles in early days; 2. Boundaries defined with bridges and stone tablets; 3. No defensive function.
	Access Control (B3)	1. Pass gates at entrances as a defence; 2. Entrances remain unchanged nowadays; 3. The defensive function disappears.
	Street Network (B4)	1. Defensive function of narrow roads; 2. Roads are widened, pavements are upgraded; 3. The defensive function of roads disappears.
	Nodes (B5)	1. Defensive facilities in ancestral halls, temples or houses to fight intruders; 2. Activity centres, caring centres, etc. added to the list of nodes; 3. The defensive function of nodes disappears.
	Planting (B6)	1. Thorny bamboos have almost disappeared nowadays; 2. Changed to river bank defence; 3. Defensive function of stopping intruders.
Behavioural defence (C)	Institution (C1)	1. Providing human resources for defence; 2. Providing material and financial support for defence; 3. The defensive function gradually disappears.
	Social Norm (C2)	1. Conventional norm (unwritten codes and practices) to warn intruders; 2. The standard defensive function has gradually disappeared.
	Territory (C3)	1. Natural boundaries define the defensive space; 2. Human-built boundaries define the defensive space; 3. The defensive function of boundaries has gradually disappeared.
	Affordance (C4)	1. Enhancing collaboration; 2. Less participation in activities; 3. Improving cohesion; 4. Good for resist foreign enemies.
	Social Network (C5)	1. Improving cohesion; 2. Good for resisting foreign enemies.

4.2. Changes in Wugoushui's Defensive Space

The Wugoushui Hakka group mainly came from Jiading Prefecture of Guangdong Province (currently Meixian City in Guangdong Province). Today's Wugoushui residents have nine major surnames, including Liu, Zhong, and Wu. Villagers bearing these surnames account for 79% of the total population, among which Liu accounts for 45%, and Wu 20%. The financial status of villagers with different surnames fluctuates. Liu is currently the dominant surname in this multi-surname village [61]. The Wugoushui defensive space involves spiritual, physical and behavioural aspects and has been investigated based on the 16 criteria mentioned above. The changes in this defensive space will be discussed based on these aspects. This study uses in-depth interviews, context analysis and site analysis to detect the changes in the spiritual, physical, and behavioural defences of the Wugoushui settlement's defensive space, as follows.

4.2.1. Changes in Wugoushui's Spiritual Defences

Other ethnic villages geographically surround the Wugoushui settlement. In order to create a safe living space, it built into a typical defensive village with high security.

A1—Fengshui Landscape

Content analysis suggests that the Fengshui of Wugoushui mainly involves the Yang-dwelling (residence for the living) and the Yin-dwelling (graveyard for the dead). Fengshui's defensive function is primarily reflected in stopping intrusion and blessing the residents. I7 and I8 give related comments on the Fengshui of Yin-dwelling. For the Yang-dwelling, the influence of Fengshui is reflected in the orientation of the buildings. Most of the Hakka Huofang (a traditional Hakka house for a big family) in Wugoushui settlement faces the water, forming an architectural layout that is "spacious in the front and practical in the back", which corresponds to the "jade belt water" in Fengshui (refer to Figure 2 for details). The Hexing Huofang is a perfect example, I7: "One could see the

five elements of metal, wood, water, fire, and earth on the eaves" (of earlier buildings). Families would place on the horseback-shaped eaves whatever elements they believed to be lacking and used patterns and characters to deliver a complementary result. Wugoushui residents believed that the harmonious water layout (Sanhe), the eastward flow of the brooks and the natural springs jointly establish the Fengshui foundation of Wugoushui. However, as Taiwan's economy boomed, thatched cottages and Hakka Huofang were rebuilt into more modern buildings that faced the streets for convenient access. For the Yin-dwelling, when the elderly passed away in earlier days, their offspring would invite a Fengshui expert over to pick a place with appropriate orientation and location so that the dead could be buried. According to I8: "Fengshui was not prioritised when picking the location of a Yang-dwelling, but it was mostly considered when picking the location of a Yin-dwelling". Therefore, the Fengshui layout in the early days of settlements may establish an impregnable situation in the case of a confrontation or bless the descendent in peacetime to seek good fortune and avoid bad luck. Graveyards in Wugoushui were government property, and the government planned to reclaim them and transform them into parks. As cremation emerged after 2000, families invited a Fengshui expert to pick a Yin-dwelling for their deceased less frequently. Consequently, most Wugoushui residents now believe that Fengshui has become increasingly less important.

A2—Religious Beliefs

Wugoushui settlement adhered to a folk belief based on the Bogong Temple (also known as Earth God/Tu Di Gong, a place (Temple) where people worship the God of Land), Ciyun Hall and other local gods. Such a belief plays the role of praying for peace and deterring enemies. I3 gives an example of that. In the east, west, south, and north and the centre of Wugoushui, ancestral halls were built to safeguard the village's lifeline. Residential houses were located in the village's Mingtang (refer to Figure 3 for details). I3 believes that "during the traditional farming period, the belief in local gods not only provided residents with a sense of peace but also intimidated intruding outsiders". In Wugoushui, the praying rite was intended to ask Bogong to take care of the crops in the coming season, while the completion rite was to thank Bogong for taking care of the crops this year. According to the interviews, Guangquan Temple, Yingquan Chansi Temple and other places for worshipping local gods were rebuilt in their original locations. When the East Bogong Temple, West Bogong Temple, and South Bogong Temple were rebuilt, the orientation was changed from outward-facing to inward-facing so that villagers could worship Bogong conveniently. I3 believed that "the outward-facing temples in earlier days demonstrated a defensive function by mentally intimidating foreign invaders". After 1895, the adversarial relationship between ethnic groups decreased, and villagers started to seek cooperation instead of confrontation. Therefore, the defensive function of religious beliefs gradually diminished, with residents mainly praying for peace.

According to field investigations, there have been only slight changes in the overall religious beliefs of Wugoushui. In the 1970s, for the convenience of worship, residents built a private Bogong Temple close to Yingquan Chansi Temple, which is now the Grand Bogong in the community park, including the new the previous base. Residents take care of the daily maintenance of the temple, such as cleaning, in rotation. It can be observed that the religious beliefs of Wugoushui residents have not changed too much.

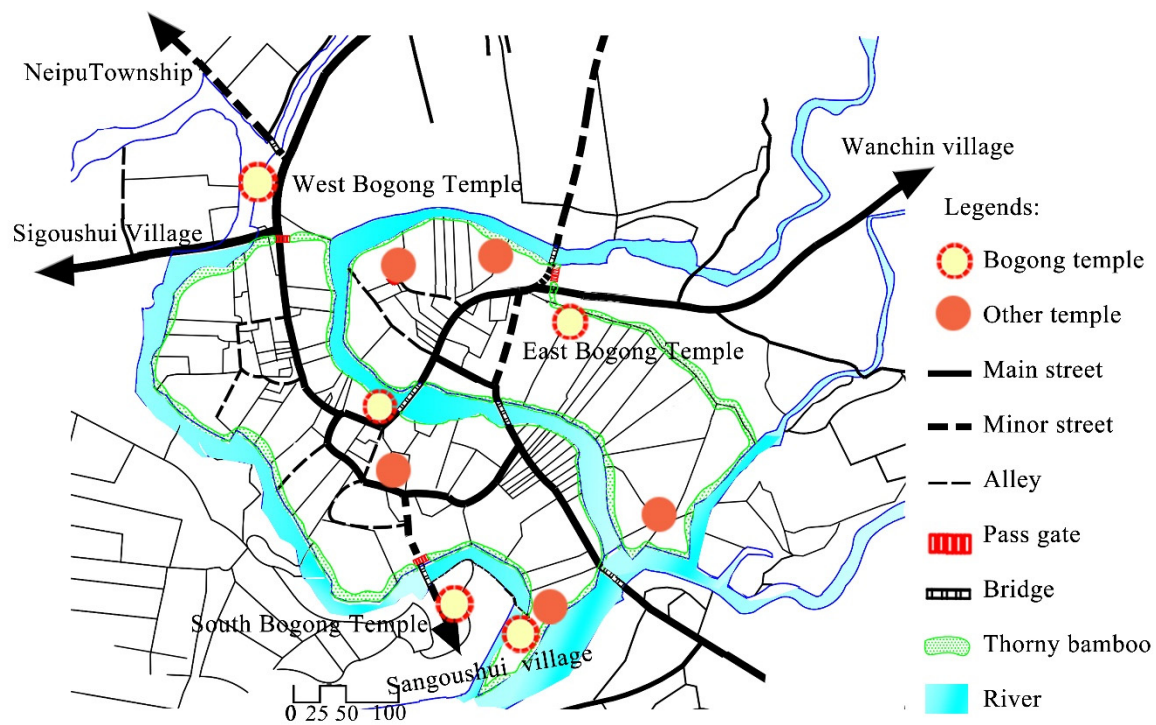


Figure 3. Wugoushui settlement before 1895.

A3—Symbols of Physical Defence

Traditional houses in Wugoushui mostly bear defensive symbols for comforting the residents and intimidating outsiders. While traditional settlements' physical defensive layout implies warning to intruders, the characters and patterns of defensive symbols provide residents with mental comfort. Such defensive symbols are still seen on some buildings in Wugoushui, such as the Hakka Huofang buildings, temples, and cemeteries (Figures 2 and 4), but most of the residential houses nowadays are in modern style, with horseback-shaped eaves no longer seen and characters and patterns less frequently used for defensive purposes.

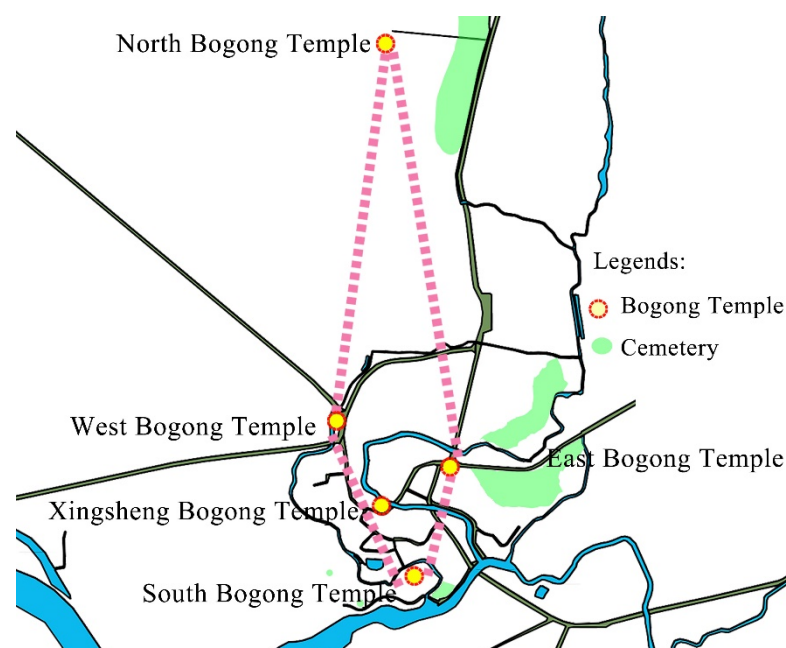


Figure 4. Location of Bogong in the East, West, South, North and Centre of the Wugoushui Settlement.

A4—Trust

Senior residents in Wugoushui have a higher level of trust among each other, based on which the residents jointly resist intruders and cultivate mental security. I2 and I1 made representative comments on the changes in trust among residents. Wugoushui is a settlement that integrates both production and life. In regular times, Dongxing, Xisheng and other areas were independent farming organisations. In case of an attack by other ethnic groups, villagers would join forces based on mutual trust to fight against invaders. I2 believes that “residents born after 1970 are less trusting”. According to I1, “the trust among modern residents is not as good as before”. When the price of areca fruit was reasonable, residents would steal from each other, and they trusted their neighbours less because of the influences of the outside world. When rice remained the dominant crop, residents didn’t need to close their doors at night because of the community’s higher level of trust. Nowadays, they build fences around their areca fruit plantations to prevent the fruit from being stolen. In short, Wugoushui residents believe that there was a higher level of trust in the past. However, under the impact of industrialisation, young people left the settlement for work and interacted more with people in the outside world, and the trust among residents began to be jeopardised by external factors and started to decline.

A5—Sense of Belonging

In Wugoushui, the sense of belonging is mainly reflected in how ancestral halls play a significant role in the residents’ folk beliefs. It mainly serves to enhance residents’ attachment to their homeland, promote collaboration among residents, and reinforce the sense of protecting their homes. I2 and I1 give representative explanations. I2 says that “young residents regularly come back to offer sacrifices to their ancestors, while the elderly do that daily”. I1 reckons that “people living here feel very happy and proud”.

4.2.2. Changes in Wugoushui’s Physical Defences

Physical defence covers six criteria: topography, boundary defence, access control, the street network, nodes, and planting.

B1—Topography

Wugoushui’s topography is mostly reflected in the location and direction of houses, and it serves the role of providing a defensive barrier for the residents. For example, traditional houses in Wugoushui are built facing the water, forming a so-called Daoqianniu layout to guard against intrusion (refer to Figure 3 for details). While the topography of Wugoushui remains stable primarily, the landscape has greatly changed. In the early days, the brooks of Wugoushui had more significant flows. Hence, residents planted thorny bamboos (Thorny bamboo is a kind of bamboo with thorns. A thorny bamboo fence marks the boundary of traditional settlements, and it is one of the essential defensive measures since the Han people entered Taiwan) along their banks to prevent people from accidentally falling into the water. After dams and dykes were built along the brooks, residents started to build houses in places that used to be low-lying. For example, residents raised funds to rebuild the Guangquan Temple and built a recreation centre for the senior residents next to it. It can be seen that, although the topography of Wugoushui has remained mostly stable, significant changes have been experienced in other aspects of its physical structure.

B2—Boundary Defences

Wugoushui has a visible perimeter and an invisible one. They act as the outermost defence of the settlement, for which I3 makes a representative comment. Pass gates, roads, and thorny bamboos planted along the brooks form a visible physical defence. In the days when resources were insufficient, villagers planted thorny bamboos along the brooks and used them as a defensive barrier. Because of their thorns, closely planted thorny bamboos can effectively prevent humans and animals from passing through (refer to Figure 4 for details). The invisible perimeter is mentioned above in the section on spiritual defences. I3

recalled that “the boundary defences disappeared after 1980, but the pass gates remained”. According to him, changes in the settlements’ needs and defensive objects result in the collapse or diminishment of the boundary.

B3—Access Control

In Wugoushui, pass gates and Bogong Temples marked the entrances to the settlements, which mainly served the defensive purposes of resisting intrusion and access control. In the years before 1895, defensive pass gates were set up at the entrances. After 1895, these defensive gates were demolished. A comparison of Figures 3 and 5 reveals that entrances to the Wugoushui settlement remained essentially unchanged. According to the interviews, residents believed the entrances were widened, and the original Bogong Temples in the east, west, south, and north of the settlement were well preserved. Changes in access control were reflected as follows: the road leading to the South Bogong Temple used to connect to Sigoushui, but now it has become an orchard path because a road was built between Wugoushui and Neipu. A decade ago, there were essential services such as grocery stores in the settlement and Wanchin next to the East Bogong Temple, where people could buy daily necessities. Now residents of the settlement buy daily necessities in Neipu via the west entrance. In short, access control of the settlement has not changed much in terms of spatial location, the Bogong Temples in the east, west and south are still present, but the direction and size of the traffic flows have significantly changed. The physical control of barricades in the past has now transformed into CCTV surveillance, as shown in Figures 3 and 6, so access control as part of the physical defences is no longer in existence. The entrances’ location to Wugoushui has remained unchanged, but defensive facilities such as the pass gates and thorny bamboos at the entrance no longer exist. New alleys leading to the entrances of the settlement have been added (Figure 5).

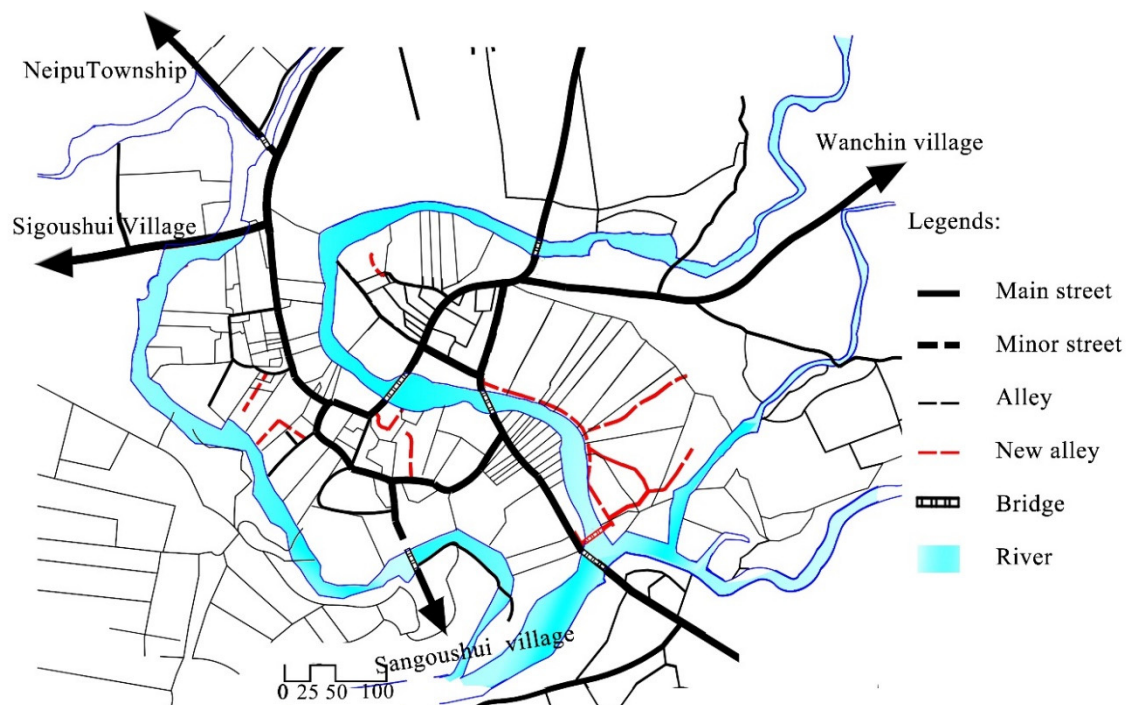


Figure 5. Road System of the Wugoushui Settlement.

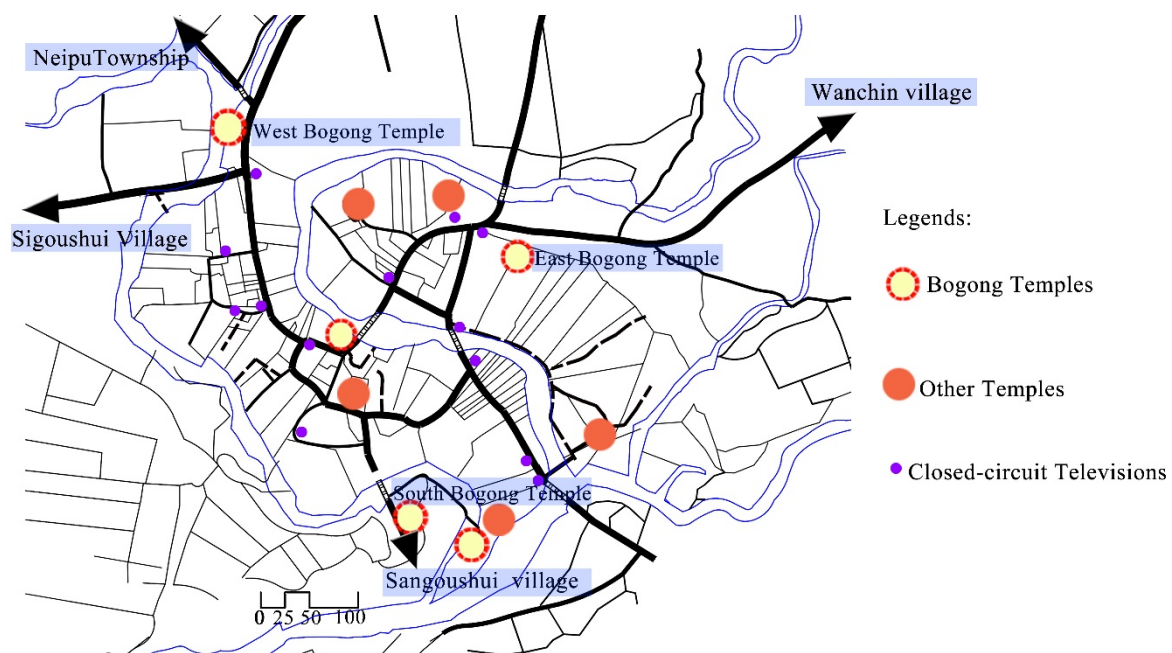


Figure 6. Current Status of the Defences of the Wugoushui Settlement.

B4—Nodes

Residential houses, ancestral halls, Bogong Temples, and other buildings constitute the nodes of the Wugoushui settlement. They serve the major roles of physical defence and shelter. I3 and I5's comments are quite representative. In the days of rice growing, Wugoushui residents spent a lot of time on farming and aggregated mostly in houses or fields. Therefore, the fields and houses were designed to be defensive. For example, shooting positions are still seen on the outer wall of Zhonghan Tower. The settlement's nodes have not changed much as of today, but their defensive function no longer exists. Activity centres, gathering spot of caring facilities are added to the list of the settlement's nodes. I5 said, "One needs to be above the age of 65 before he/she is admitted to the caring centre".

B5—Street Network

In the early days of the Wugoushui settlement, Hakka Huofang were built with a river to the front and roads behind. This unique design of traffic flow was intended to be defensive, and the winding streets and alleys formed the defences inside the settlement that effectively prevented intrusion. I10 and I9's comments are quite representative. I10 noted that "the alleys used to be paved with stones, now they are paved with asphalt" whilst I9 observed that "in the period from 1950 to 1960, fewer people were leaving the settlement". When someone passed away, every family would send one person to help with the funeral. With the transition from an agricultural to an industrial society, fewer people were living in the settlement, and more industrial roads were built. The regular roads were widened, but the number of roads did not increase. Buildings nowadays are facing the street, and their defensive function no longer exists. It can be seen that the street network in Wugoushui has largely remained unchanged, although some roads have been added (refer to Figure 5 for details). The older roads have been upgraded from the previous stone pavement to the current asphalt pavement and also widened, but the defensive function has disappeared.

B6—Planting

Thorny bamboos in Wugoushui established a defensive enclosure to keep intruders away. The comments of I3, I9 and I4 are quite representative. I3 believed that in around 1977, thorny bamboos' defensive role gradually declined because the adversarial relationship

between ethnic groups diminished, especially since the arrival of the National Government in Taiwan after 1945. I9 believed that thorny bamboos disappeared in the 1960s for two reasons. First, the riverbanks collapsed; second, thorny bamboos' use was limited, so they gradually disappeared around 1980. I4 thought that the thorny bamboo defence shifted to the riverbank defence. It could be seen that the disappearance of thorny bamboos marked the gradual collapse of Wugoushui's physical defence.

4.2.3. Changes in Wugoushui's Behavioural Defences

Behavioural defence exists as institutions, social norms, territory, affordance and social networks.

C1—Institutions

Some institutions in Wugoushui played an important role in aggregating forces to protect the people when fighting intruders and natural enemies. Such a role was reflected in providing human resources, material and financial support for defence. The Wugou Training Square (a local armed organisation) and the Sacrifice Establishment (a clan sacrifice organisation) were two representatives. In terms of human resources, the Wugou Training Square picked a strong male from clans of different surnames and offered them regular training defensive skills. In terms of material and financial support, the Sacrifice Establishment spared some of the clan's fund to stock up defensive and disaster relief supplies to fight intruders and natural disasters or provided financial support directly.

C2—Social Norm

The defensive role social norms play in Wugoushui is mainly manifested in the unwritten rules for outsiders. In Wugoushui, there were no written social norms in existence, and those social conventions accepted and established through common practice in the early days of the settlement gradually disappeared with the transformation of traditional agriculture. However, the practices such as offering sacrifices, praying for blessings (Hakkas' Bogong-praying rituals) and completion rites have been well preserved to this day.

C3—Territory

The territory is mainly reflected in the visible sense, that is, the natural barriers and human-built restrictions to keep intruders out. The former includes rivers and hills, while the latter consists of thorny bamboos, fences, cemeteries, and Bogong Temple. In the years before 1895, such a territorial definition ruled outsiders' behaviours as going beyond the territorial boundary without consent was considered intrusive. Nowadays, the defensive role of the territorial boundary has gradually disappeared.

C4—Affordance

Wugoushui's affordance consists of the worshipping of local gods such as Bogong and other festival traditions (see Figure 7). Its defensive role is mainly manifested by how it improves the cohesion and cooperation among residents so that all establish sufficient tacit agreement in resisting the foreign enemies. In this regard, I9, I3, I5 and I6 made representative comments. I9: "The community development centre is not being used, the community development association ... The older generation gather in the village office, while the younger generation in the Bogong pavilion." I3: "In Xisheng, completion rites are held in October of the lunar calendar ... Autumn blessing falls on 2 August of the lunar calendar, spring blessing on January 11th and 12th of the lunar calendar ... The praying rite is to pray for a good harvest in the coming year, and the completion rite is to thank Bogong for taking care of the crops." Today, every morning before 10 o'clock, the elderly gather in the activity centre to have a chat. On Tuesdays and Fridays, activities are arranged in the caring centre. I5 said, "One needs to be above the age of 65 before he/she is

admitted to the caring centre”; I6: “Activities increase to provide leisure and entertainment venues for the elderly”.

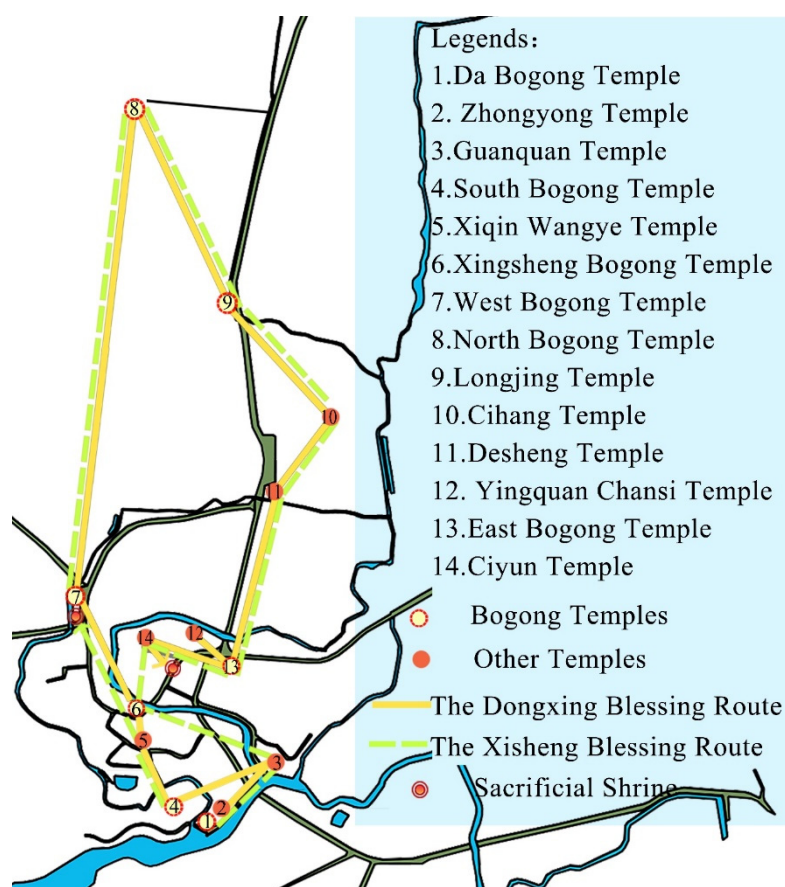


Figure 7. Route and Scope of Blessing Rites in Dongxing and Xisheng of Wugoushui. (Source: plotted based on [61] and field investigation.)

C5—Social Networks

The interpersonal network in Wugoushui is mainly maintained by the religious blood relationships, which played the role of uniting the residents in fighting against foreign intrusion. The bloodline-based interpersonal network refers to clan relatives, while the geography-based interpersonal network involves activities and daily communication. I3 made a representative expression on the Yin-dwelling. I3: “In the past, villagers under the same surname lived in the same Huofang and wandered around to visit the others.” Now, the emotional attachment remains unchanged, but the interaction is reduced. Social networking is enhanced inside the settlement through worship activities.

To sum up, economic, social, and environmental changes have affected Wugoushui’s spiritual, physical and behavioural defences. Residents’ spiritual defence against intruders shifted to the need for mental security, in which the key criteria of the Fengshui landscape and defensive symbols changed drastically. During the interviews, the interviewees mentioned those religious beliefs related not only to security but also to the farming society, indicating that religious beliefs played a significant role in the spiritual defence of residents. Physically, the disappearance of ‘thorny bamboos’ as a measure of physical defence marked the collapse of traditional settlements’ physical defensive spaces. In this aspect, topography, access control, boundary defence, and planting are critical for significant changes. Defensive behaviour disappeared, but a large part of the behavioural rituals was retained. In this aspect, the key criteria that have significantly changed are social norms and affordance. Where major changes are found with the elements of a defensive space, the spirit of place changes greatly. Although the settlement’s spiritual, physical, and behavioural aspects

have undergone some changes, the elements with minor changes reflect the residents' sense of identity and the sense of direction. The spirit of place is explored below based on the degree of change in the defensive space's key elements.

5. Transformation in Wugoushui's Spirit of Place

5.1. *Wugoushui's Spirit of Place*

The spirit of place consists of the structure of the place and the significance of the place. The former constantly changes over time, and it more or less affects the changes in the significance of place [5]. Therefore, changes in the spirit of place are discussed from the changes in the defensive space. In the process of embracing modernisation, the traditional elements of Wugoushui's defensive space have experienced changes which can be categorised as 'minor', 'major' and 'some changes'. As mentioned earlier, the development of the spirit of place is closely related to the sixteen key criteria of a defensive space. Therefore, the changes in these elements apply to the traditional spirit of place. Additions to the traditional elements help shape a new spirit of place. After 'minor' and 'some' changes, the spirit of place is still recognisable in its traditional form, while major changes appear to create a new spirit of place. In this paper, the former is considered the traditional spirit of place and the latter the new spirit of place. Whereas the focus of this paper is the spirit of place of settlements in historical sites, that is, the spirit of traditional places, a discussion of the new spirit of place lies outside the scope of this study. In this chapter, the author mainly analyses the changes in the spirit of place through the changes in the defensive space. Firstly, the changes in the sixteen key criteria of Wugoushui's defensive space are captured (refer to Figure 8 for details). Secondly, the connections between the changes in the sixteen criteria and those in the spirit of place are explored; lastly, the causes of changes in the spirit of place are identified. The first two points are related to the relationship between the defensive space and the spirit of place, and the last one is related to the causes of changes in the spirit of place. The changes in the sixteen criteria of the settlement will discuss the spirit of the place below.

In terms of spiritual defence, 'some changes' lie in the settlement's sense of belonging, while 'minor changes' lie in trust and religious beliefs, as can be seen from the changes of Wugoushui's key defensive elements (refer to Figure 8 for details). Therefore, the traditional spirit of place is mainly reflected in the sense of belonging, religious belief and trust. Residents tend to form a sense of identity more easily on the premise of trust [62]; meanwhile, the sense of identity lays the foundation for the sense of belonging, and they both constitute important elements of the spirit of place [5]. As a result, there is a close connection between the sense of belonging and trust. Although I1 and I2 reckoned that residents trust each other less than they did in the traditional farming period, the level of trust among residents remains high. Residents who work and live outside the settlement will come back to Wugoushui for festivals and holidays to visit relatives and friends, demonstrates the trust among Wugoushui residents and their mental sense of belonging. Wugoushui's spirit of place in terms of religious belief is mainly reflected in daily activities, such as offering sacrifices to ancestors and worshipping local gods. During migration, Hakka people developed a psychological identity based on shared beliefs [63], while religious beliefs and rituals reflect the relationship between people and places in a settlement [64]. Wugoushui residents' daily worshipping at the Bogong Temple and festival rituals have been carrying on from the traditional farming society to the present day and have blended into residents' daily lives, which shapes the distinctive spirit of place of Wugoushui.

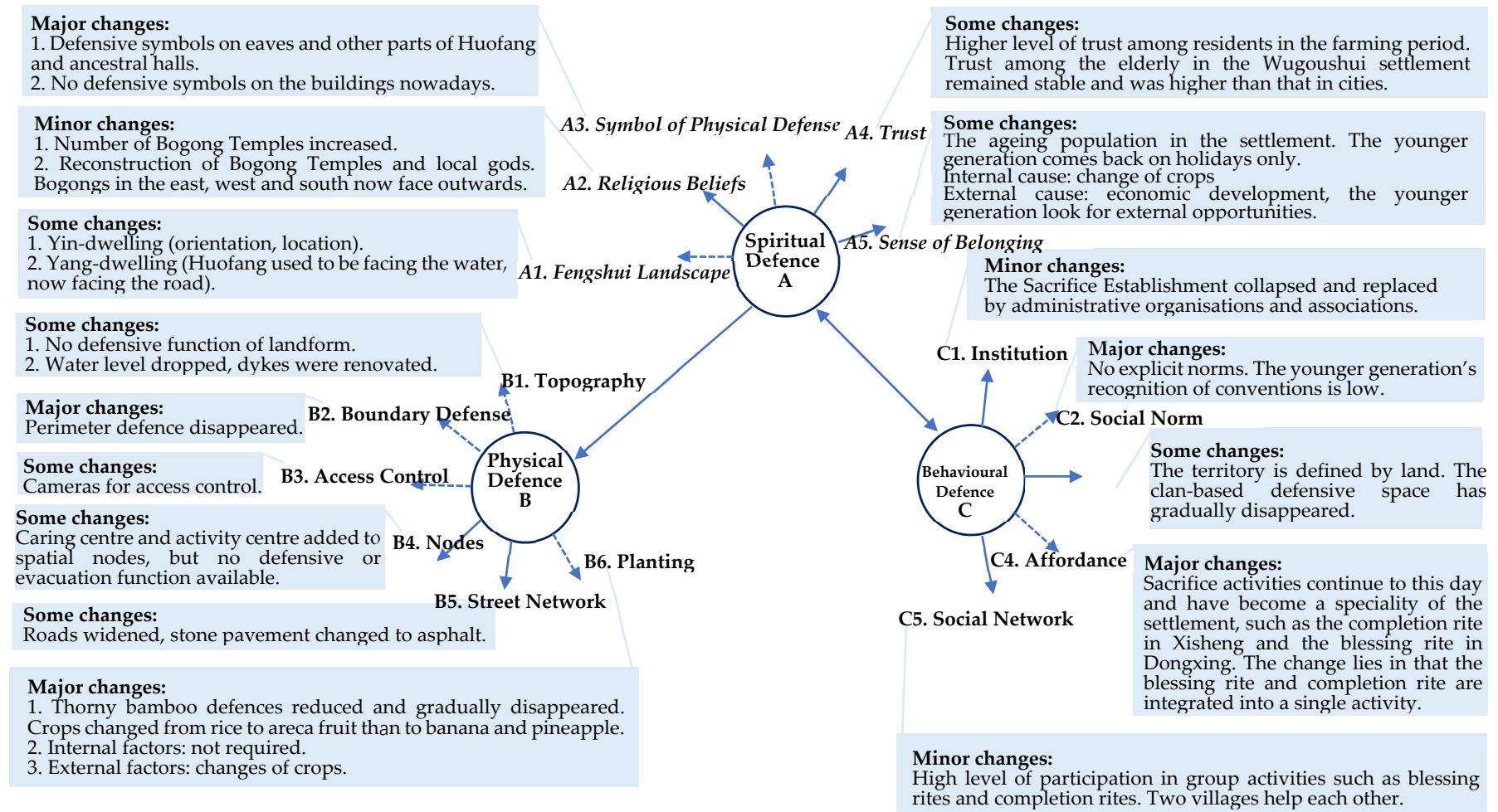


Figure 8. Changes in Wugoushui's Defensive Criteria (Source: plotted in this study).

In terms of physical defence, nodes and the street network are the two elements in Wugoushui's physical defences that have experienced minor changes but which still embody the physical aspects of the traditional spirit of place of Wugoushui. Nodes highlight the major venues of a settlement [14], and they are also places for residents' daily activities [65]. In Wugoushui, the space surrounding the temples is where residents' daily leisure activities take place. For example, Xizha Bogong is not only a place where residents meet and chat during the day but also one of the four Bogong temples in Wugoushui. Street networks assume the roles of movement paths and security [66]. Wugoushui's street networks consist of streets interfacing the outside and internal alleys. The former is mainly for outbound transportation, and the latter is built for security following the brooks, hence their winding form. Although the existing nodes and street networks of Wugoushui no longer play a defensive role, they contribute to the characteristics of the settlement's spatial layout.

In terms of behavioural defence, the institutions, territory, and social networks are the elements in Wugoushui's behavioural defences that have experienced some changes, yet they still reflect Wugoushui's traditional spirit of place. Traditional settlements' institutions involve cultivation, sacrificial offerings, clans, families, etcetera [14]. The land reserved by Wugoushui's Sacrifice Establishment is available for cultivation by future generations, who are only required to pay a small amount of rent. In terms of territory and social network, farming festivals, sacrificial rituals, memorial ceremonies, celebrations, and other folklore activities not only define the range of interactions between residents but also reveal the level of intimacy among people [66]. Daily activities not only pass on cultural traditions but also provide a place for residents to communicate. In Wugoushui, residents cooperate and help each other on the occasions of local gods' birthdays, blessing rites, completion rites, etc. The interpersonal network between residents reflects the boundaries between them. For example, Xisheng and Dalin hold blessing (returning) activities at different times, include the different time of the events and activities. Route (see Figure 7 for details) As a result, the residents' social networks are mainly embodied in interactions between geographical and blood relationships, traditional customs, and rituals.

5.2. Causes of Changes in the Spirit of Place

The author has explored the economic, social and environmental causes of changes in Wugoushui's spirit of place.

The economic cause: Traditional settlements' deficiencies in economics and social freedom restricted the settlement's growth [25]. Before 1895, rice was grown in the settlement as the major economic crop, which required an extensive labour supply. As a result, external labour moved in and worked as hired labour to make a living. From 1945 to 1974, Taiwan's economic foundation shifted from traditional agriculture to industry, and consequently, traditional farmers switched from growing rice and soybeans to growing areca palms. After 2000, the price of areca fruit continued to decline year on year. According to the author's field investigation in 2019, the price of 500 g of areca fruit fell sharply. Therefore, farmers started to grow bananas and pineapples in their fields. Wugoushui's agricultural planting has shifted from the traditional rice and soybean to areca palms and then to bananas and pineapples. The changes in the ways that land is utilised in Wugoushui mark the settlement's transformation from a traditional agricultural society to an industrial society and demonstrate the changes in the spirit of place of Wugoushui as a historical site. Although traditional settlements' strategy of prioritising economic development promoted rural economic growth, it ignored the cultural features such as local diversity and traditional rural settlements' ecological characteristics.

The social cause: At the end of the 18th century, the settlement was faced with a challenging internal security situation and constant border conflicts. Out of security concerns, the Liou-Duai Self-Defence Force was established, thereby forming a defensive space. The Wugoushui settlement took brooks as the natural perimeter barrier, planted thorny bamboos and set up pass gates to the east, west, south and north for access in

daytime only. In the days before 1895, when the relationship between ethnic groups was still adversarial, thorny bamboo was the most common plant used when a Hakka village tried to establish spiritual, physical and behavioural defences. After 1895, confrontations between ethnic groups reduced, as thorny bamboos were mandatorily removed, marking the disappearance of a physical defensive space enclosed by such a plant. Pingtung County was classified as a special agricultural zone around 1960. Since then, more and more young people from Wugoushui started to look for external employment opportunities, leaving behind the older residents, mostly around 65 years of age, in the settlement. As a consequence, Wugoushui's agriculture switched from being tradition-based to becoming mechanised, and the emotional connection between people and the land changed accordingly.

The environmental cause: Urbanisation has led to changes in population, concept, land use, production, facilities, etcetera, of rural settlements. It has also resulted in the integration, aggregation, qualitative change, and disappearance of settlement spaces. The survival of traditional settlements under such threats has received further attention from the industry and academia [67]. Under the macro background of urbanisation, the industries, living environment, and arable land resources of traditional settlements are affected. Wugoushui has been acknowledged as having a group of buildings with a strong cultural heritage. The cultural heritage administration has been guiding local speciality production, industrial operations and local culture. In terms of cultural popularisation, residents' awareness of Hakka culture's historical context and characteristics has been raised. Nowadays, more and more residents have become aware of the significance of Hakka Huofang and developed a sense of pride in them. Subject to the social and economic impacts, Wugoushui's spirit of place as a historic site may be substituted by the new spirit of place. However, the Wugoushui Association, the cultural heritage administration, and the residents still play a leading role in preserving the culture of the historical sites, which promoted the sustainable preservation of the Wugoushui settlement.

The changes in Wugoushui's defensive space and the changes in its spirit of place are tangible manifestations of intangible culture. Along with the changes in the economy, society and environment, Wugoushui residents embrace the new culture while holding on to their original traditions. The 'minor changes', 'some changes', and 'major changes' in the key elements of Wugoushui's defensive space revealed the spirit of place of the historical site, which is mainly reflected in eight criteria, including religious beliefs and trust. The research on the spirit of place of historical sites aims to provide a theoretical reference for exploring the Hakka settlement's preservation and management of its spirit of place.

6. Conclusions

With the methods in structured observations, in-depth interviews, context analysis, and site analysis as the research methods, this paper examines the changes in the spiritual, physical, and behavioural defences of the Wugoushui Hakka settlement, explores the changes in its spirit of place, and draws the following conclusions:

In terms of changes in the defensive space, the analysis of the 16 key criteria of Wugoushui's defensive space reveals the following: (a) Physical defence has been deeply affected by the changes since the time of the formation of the settlement. As Taiwan's economy rocketed up after the 1960s, the society proliferated, the industries adopted at a fast pace, and Wugoushui's physical space went through significant changes. The functional role of traditional physical defence gradually shrank and even disappeared. Such a change was marked by the disappearance of thorny bamboos and the emergence of closed-circuit television after 1971. The former announced the end of physical defence, while the latter indicated the beginning of technological defence. (b) The role of spiritual defence against hostile intrusion has disappeared. However, its functions of blessing the settlement and protecting the residents are still valid today. For example, religious beliefs feature the roles of intrusion prevention and peace blessing. While the former meaning no longer exists, the latter is still recognised by residents today. (c) Behavioural defence consists of defensive behaviours and cultural customs. Although the former has

disappeared, the latter is retained mostly by the elderly residents. For example, praying for blessings, completing rites, and other rituals that have lasted for centuries remain important folklore events in the settlement.

In terms of changes in the spirit of place, the analysis of the changes in defensive space using the 16 key criteria of a defensive space reveals the following: (a) Spiritually, religious beliefs, trust, and sense of belonging reflect the characteristics of residents' daily life and interaction play the roles of mentally comforting and preventing others from intruding, and complement the physical defence. (b) Physically, nodes and street networks reflect the local characteristics of the settlement's spatial layout. They are intuitive and visible structures of a place that provide residents with material-based mental security. (c) Behaviourally, institutions, territory, and social networks reflect the settlement's cultural characteristics by connecting the society, operating institutions, and managing organisations. It can be seen that the establishment of the spirit of place depends on the objective environment and the subjective perception, and the development of a defensive space reflects personal needs and objective threats. Therefore, a close causal relationship exists between changes in defensive space and changes in the spirit of place. That is to say, different defensive spaces produce different spirits of place. In summary, changes in defensive space bring along changes in the spirit of place.

This research aims to provide a theoretical reference for the land management and cultural preservation of settlements and act as an important benchmark for settlement activation, restoration and sustainable development. However, subject to the constraints in the research methods and research objects, the following deficiencies exist in this paper: (a) The relationships between the key criteria of Wugoushui's defensive space are not identified. (b) The difference in the spirit of place and defensive space between non-Hakka settlements and traditional Hakka settlements is not covered. Therefore, the following topics are suggested for follow-up research: (a) Leverage the Dematel method to analyse the relationship between the sixteen key criteria of a defensive space in Wugoushui and plot a relationship network diagram. (b) Explore the difference in the spirit of place and defensive space between the Wugoushui Hakka settlement and the Lutaoyang Southern Fujian settlement.

Author Contributions: Y.H. conceived and designed the research, collected the data, performed the data analyses, and drafted the manuscript. C.-P.C. and R.-J.C. helped to recheck the data and revised the manuscript. H.L. collected the data, supervised this revised manuscript and provided feedback. J.-S.H. rechecked the data and revised the manuscript. All coauthors contributed to improving this revised manuscript. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: Not applicable.

Acknowledgments: The manuscript is partly selected from the Ph.D. thesis: Exploring the Changes in Genius Loci from the Development of Defensible Space of Settlement—A Case Study of Liou-Duai Hakka.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Shafiei, M.; Leardini, P. The spatial functionality of rural spaces to urban needs. *Int. J. Interdiscip. Glob. Stud.* **2018**, *13*, 45–60. [CrossRef]
2. Wu, K.-L.; Jin, M. Exploring the ecological wisdom, genius loci, and multiple values of vegetable cellars in the rural villages of northeast China. *J. Archit* **2017**, *101*, 161–184. (In Chinese)
3. ICOMOS. 2008. Available online: https://www.icomos.org/images/DOCUMENTS/Charters/GA16_Qaimenuebec_Declaration_Final_EN.pdf. (accessed on 16 January 2021).
4. Wei, Z. Residents' collective memory of urban street and lane spaces: A case study of the confucius temple block in Nanjing city. *J. Landsc. Res.* **2016**, *8*, 61–72.
5. Norberg-Schulz, C. *Genius Loci: Towards a Phenomenology of Architecture*; Rizzoli: New York, NY, USA, 1980.

6. Petzet, M. The Spirit of Monuments and Sites, 16th General Assembly of ICOMOS, Quebec, Canada, 30 September 2008. Available online: http://www.international.icomos.org/quebec2008/cd/toindex/papers_ouverture/inaugural-Vortrag_Petzet.pdf (accessed on 28 April 2021).
7. Rajković, I.; Bojović, M. Revitalization of traditional architecture towards sustainable development of the Skadar lake area. *Archit. Urban Plan.* **2016**, *11*, 32–42. [\[CrossRef\]](#)
8. Wang, X. Analysis on the defensive space of traditional fortress settlement. *Archit. J.* **2003**, *4*, 64–70. (In Chinese)
9. Wang, X.; Huang, W.J.; Hou, X. A study on the traditional baozhai settlement in Shanxi. *Archit. J.* **2003**, *8*, 59–61. (In Chinese)
10. Ling, H. A review on the development of spirit of place. *Gard. Landsc.* **2017**, *14*, 274. (In Chinese)
11. He, Y.F.; Chen, C.P. A literature review of the traditional settlement defensive space. *J. Des. Sci.* **2019**, *22*, 61–84. (In Chinese)
12. Law of Cultural Assets Preservation. Available online: <https://law.moj.gov.tw/LawClass/LawAll.aspx?PCode=H0170001> (accessed on 16 January 2021).
13. Hung, J.T. Genius Loci Probing into the Spatial History of the Rural Settlements in Taiwan—A Study on Rihnan. Master's Thesis, Dayeh University, Taichung, Taiwan, 2006. (In Chinese).
14. Liang, Y.Y. *The Configuration of Beipu Hakka Settlements in the Late Qing Dynasty*; Cultural Affairs Bureau of Hsinchu County Government: Hsinchu, Taiwan, 2000. (In Chinese)
15. Public Data of Wugoushui. Available online: <https://nchdb.boch.gov.tw/indigenous/assets/overview/groupsOfBuildings/20080519000001> (accessed on 26 January 2021). (In Chinese)
16. Chu, Y.C.; Hsu, M.F.; Hsieh, C.M. A field assessment on natural ventilation and thermal comfort of historical district—A case of the Wugoushui settlement in Taiwan. *J. Earth Sci. Eng.* **2015**, *5*, 463–472.
17. Lee, C.C.; Chen, Y.X.; Wu, Y.L.; Yeh, W.C.; Liang, C.M. Multilevel analysis of the pressure of agricultural land conversion, degree of urbanization and agricultural land prices in Taiwan. *Land* **2020**, *9*, 474. [\[CrossRef\]](#)
18. He, Y.F.; Chen, C.P.; Chou, R.J. The key factors influencing safety analysis for traditional settlement landscape. *Sustainability* **2019**, *11*, 3431. [\[CrossRef\]](#)
19. Zhou, X.D.; Shen, Y.; Xiao, F. From object to field: A strategy for cultural landscape protection and integration. *Chin. Landsc. Archit.* **2011**, *27*, 4–9. (In Chinese)
20. Tan, H.L.; Ye, B.J. Research on the central exterior space of traditional village in southern Fujian based on the spirit of place. *Urban. Archit.* **2020**, *17*, 133–136. (In Chinese)
21. Brook, I. Can 'spirit of place' be a guide to ethical building. In *Ethics and the Built Environment*; Fox, W., Ed.; Routledge: London, UK, 2000; pp. 139–152.
22. Tuan, Y.F. *Space and Place: The Perspective of Experience*; University of Minnesota Press: London, UK, 1977.
23. Entrikin, J.N. *The Betweenness of Place: Towards a Geography of Modernity*; The Johns Hopkins University Press: Baltimore, MD, USA, 1991.
24. Cojanu, D. Homo localis, interpreting cultural identity as spirit of place. *Procedia Soc. Behav. Sci.* **2014**, *149*, 212–216. [\[CrossRef\]](#)
25. Wang, H.J. Spirit of place: The core of landscape design. *Art Des. Res.* **2007**, *4*, 10–12. (In Chinese)
26. Cai, Y.F. The Method Research Built by "Genius Loci" in the Renew Strategy of the German Industrial Inheritance. Ph.D. Thesis, Zhejiang University of Technology, Hangzhou, China, 2016. (In Chinese)
27. Wang, Q. Meaning of research—Comments on Christian Norberg-Schultz's architecture theory. *World Archit.* **1997**, *4*, 73–77. (In Chinese)
28. Ling, M.B.Z.; Wu, Y.D. The "Spirit of Place" and contemporary Japanese architecture. *World Archit.* **1996**, *4*, 52–53. (In Chinese)
29. Chen, Y.X. Introduction and criticism of Norberg Schulz's "place and place spirit" theory. *J. Chang. Univ.* **2003**, *20*, 30–33.
30. Hall, E.T. *The Hidden Dimension*; Doubleday: New York, NY, USA, 1966.
31. Jacobs, J. *The Death and Life of Great American Cities*; Vintage: New York, NY, USA, 1961.
32. Hu, Z.Z. *Human Geography*; Sanmin Press: Taipei, Taiwan, 1977. (In Chinese)
33. Wang, X.; Hou, X. Study on the category of traditional stockaded village in Shanxi. *Hum. Geogr.* **2006**, *6*, 35–39. (In Chinese)
34. Wei, J.; Wang, Y.P.; Wang, Y. Analysis on the defensibility of tunpu settlements and buildings in Anshun, Guizhou province. *Huazhong Archit.* **2010**, *28*, 157–160. (In Chinese)
35. Zhang, K.Y.; Song, K. The research of li fang system and bao in pingyao shanxi. *Architect* **1996**, *4*, 50–54. (In Chinese)
36. Wang, X.; Hou, X. Study on the Classification of the Traditional Defensive Settlements. *Architect* **2006**, *2*, 75–79.
37. Wang, F.Z. *Urban Crime Space*; Southeast University Press: Nanjing, China, 2012. (In Chinese)
38. Chen, F.; Kong, J.; Zuo, Y. Spatial Characteristics Analysis of Traditional Defensive Settlements: Wangnao Village, Shahe City. *Mod. Urban. Res.* **2017**, *11*, 31–37.
39. Panamanian Fortifications Inscribed on List of World Heritage in Danger. Available online: <http://whc.unesco.org/en/news/892> (accessed on 28 January 2021).
40. Tuan, Y.F. *Topophilia: A Study of Environmental Perceptions, Attitudes, and Values*; Columbia University Press: New York, NY, USA, 1990.
41. Astuti, R. "The Vezo are not a kind of people": Identity, difference, and "ethnicity" among a fishing people of western Madagascar. *Am. Ethnol.* **1995**, *22*, 464–482. [\[CrossRef\]](#)
42. Jorgensen, B.S.; Stedman, R. Sense of place as an attitude: Lakeshore owners attitudes toward their properties. *J. Environ. Psychol.* **2001**, *21*, 233–248. [\[CrossRef\]](#)

43. Relph, E. Spirit of place and sense of place in virtual realities. *Techné Res. Philos. Technol.* **2007**, *10*, 17–25. [[CrossRef](#)]
44. Lin, Z.H. An initial exploration into the relationship between the appearance of “ke” in historical materials and the development of the Hakka tribe. *Bull. Acad. Hist.* **2006**, *10*, 1–61.
45. Liu, P.L. *Traditional Settlement Cultural Landscape Gene: Deep Reading on Genetic Map about Traditional Settlements Landscape*; The Commercial Press: Hongkong, China, 2014. (In Chinese)
46. Liu, P.L.; Liu, C.L.; Deng, Y.Y.; Sheng, X.Y.; Hu, Z.; Li, B.H. Study on the identification of hakka traditional village’s landscape genes and analysis in the perspective of geography. *Hum. Geogr.* **2009**, *24*, 40–43. (In Chinese)
47. Maslow, A.H. *A Theory of Human Motivation*; Simon and Schuster: New York, NY, USA, 2013.
48. Bailey, K.D. *Methods of Social Research*, 4th ed.; Free Press: New York, NY, USA, 2007; pp. 241–274.
49. Rydberg, A.; Ericson, B.; Lindstedt, E. Use of a structured observation to evaluate visual behavior in young children. *J. Vis. Impair. Blind.* **2004**, *98*, 172–179. [[CrossRef](#)]
50. Kvale, S.; Brinkmann, S. *Interviews: Learning the Craft of Qualitative Research Interviewing*; Sage publications: New York, NY, USA, 2009.
51. Guan, X.S. *Design Research Method*; Chuan Hwa Publishing Ltd.: Taipei, Taiwan, 2006. (In Chinese)
52. Krippendorff, K. *Content Analysis: An Introduction to Its Methodology*; Sage Publications: New York, NY, USA, 2018.
53. Krippendorff, K. Validity in content analysis. In *Computerstrategien für die Kommunikationsanalyse*; Mochmann, E., Ed.; Campus-Verlag: Frankfurt, Germany, 1980; pp. 69–112.
54. Krippendorff, K. *Content Analysis*; Barnouw, E., Gerbner, G., Schramm, W., Worth, T.L., Gross, L., Eds.; International Encyclopedia of Communication; Oxford University Press: New York, NY, USA, 1989; pp. 403–407.
55. Krippendorff, K. *Content Analysis: An Introduction to Its Methodology*, 3rd ed.; Sage Publications: New York, NY, USA, 2013.
56. Holsti, O.R. *Content Analysis for the Social Sciences and Humanities*; Addison-Wesley: Boston, MA, USA, 1969; pp. 602–611.
57. Wimmer, R.D.; Dominick, J.R. *Mass Media Research: An Introduction*, 9th ed.; Cengage Learning: Boston, MA, USA, 2011; p. 175.
58. LaGro, J.A. *Site Analysis: Linking Program and Concept in Land Planning*; John Wiley & Sons: Hoboken, NJ, USA, 2001.
59. LaGro, J.A., Jr. *Site Analysis: A Contextual Approach to Sustainable Land Planning and Site Design*, 2nd ed.; John Wiley & Sons: Hoboken, NJ, USA, 2008.
60. Wimmer, R.D.; Dominick, J.R. *Qualitative Research Methods*; Wadsworth Publishing Company: Belmont, CA, USA, 1993.
61. Chiou, Y.J. Wugoushui Wetland: A Study of the Physical Environment of a Liuk Tui Hakka Settlements. Master’s Thesis, TungHai University, Taichung, Taiwan, 1989. (In Chinese)
62. Du, S.C. From tribes to society-as-a-whole: Democratic elections at township level and the mode of generalized trust in rural China. *J. Soc. Dev.* **2017**, *4*, 125–147, 240.
63. Chang, H.B.; Chang, W.A.; Lee, L.S. The belief in god, human relations and social organization: Penang Tanjong Tokong Thai Pak Koong and its ritual organizations. *Glob. Hakka Stud.* **2014**, *3*, 111–138. (In Chinese)
64. Wang, P.F.; Ho, M.C. To explore the model for designing the field of sacred space. *J. Des.* **2012**, *17*, 21–44. (In Chinese)
65. Geng, H.; Zhou, Z. Research on public space of traditional village influenced by folk-custom: Case study of villages in Tunpu of Guizhou. *Huanzhong Archit.* **2010**, *28*, 96–99. (In Chinese)
66. Peng, Y.G. *Landscape Analysis of Traditional Villages and Towns*; China Architecture and Building Press: Beijing, China, 1994. (In Chinese)
67. Xing, G.R.; Xu, Y.L.; Zheng, Y. Rural settlement spatial evolution types and features in the process of urbanization. *Econ. Geogr.* **2007**, *27*, 932–935. (In Chinese)