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Study on Influencing Factors of Rural Human Settlements from the Perspective of Neurourbanism

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ABSTRACT: *A stressful external environment may cause various mental diseases. It is become a hot subject to figure out how to handle the tense link between the environment and health. The mechanism of human-environment interaction may be studied, and a conceptual model of the connection between rural human settlements and health can be developed by referencing relevant ideas and approaches in neuroscience. For rural human settlement health research, a framework is given based on this model, which begins with a conceptual model. The theoretical support system, the substance of research, and the techniques used to convey it are sorted out in a normative way. It has the potential to fill in the gaps in rural-related research and provide a new research approach and theoretical framework for the study of the link between a rural environment's impact on health.*

Key words*: Health impact mechanisms, Landscape gardening, Neuroscience, Rural habitat, Urban and rural research.*

1. Introduction

Previous research has focused chiefly on urban residents' health, whereas rural populations' health has gotten less attention. China's rural population currently accounts for 36.11 per cent, and the rural population still accounts for a third; since the new millennium, the number of people engaged in agriculture has dropped to 884 million, accounting for 27 per cent of the global labour force; compared to this, it was 1.05 billion in 2000, accounting for 40 per cent. [1] We can't deny that China and much of the world are still home to a substantial agricultural population. As a result, the relationship between rural health and the environment demands our sustained attention. Rural people are less likely to suffer from mental illness and high-risk disorders, making it easier to study how the environment influences health. These discoveries have a more substantial impact on what is true. Rural areas are less congested and louder than cities, have better air quality and less distracting physical settings, and fully allow people to explore their relationship with nature.

Habitat and mental health are intertwined in a complex manner. Interdependence and symbiotic relationships have yet to be thoroughly analyzed and explored. Mental health stressors must be better defined, and patterns and variables that impact pathogen reduction in habitat environments must be identified and studied more thoroughly. The present study makes it feasible to use the idea of "neuro-urbanism" to evaluate the interaction between neuroscience and multidisciplinary domains like landscape gardening and rural planning and highlight breakthrough points that need to be addressed.[2] There has been a growing interest in how neural circuits formed during development perceive their environment and carry out behaviours. This interest has led to theoretical connections between brain science, cognitive psychology, computational neuroscience, and systems theory. These fields try to figure out how neural circuits get perceptions from memory and act on them when retrieved.

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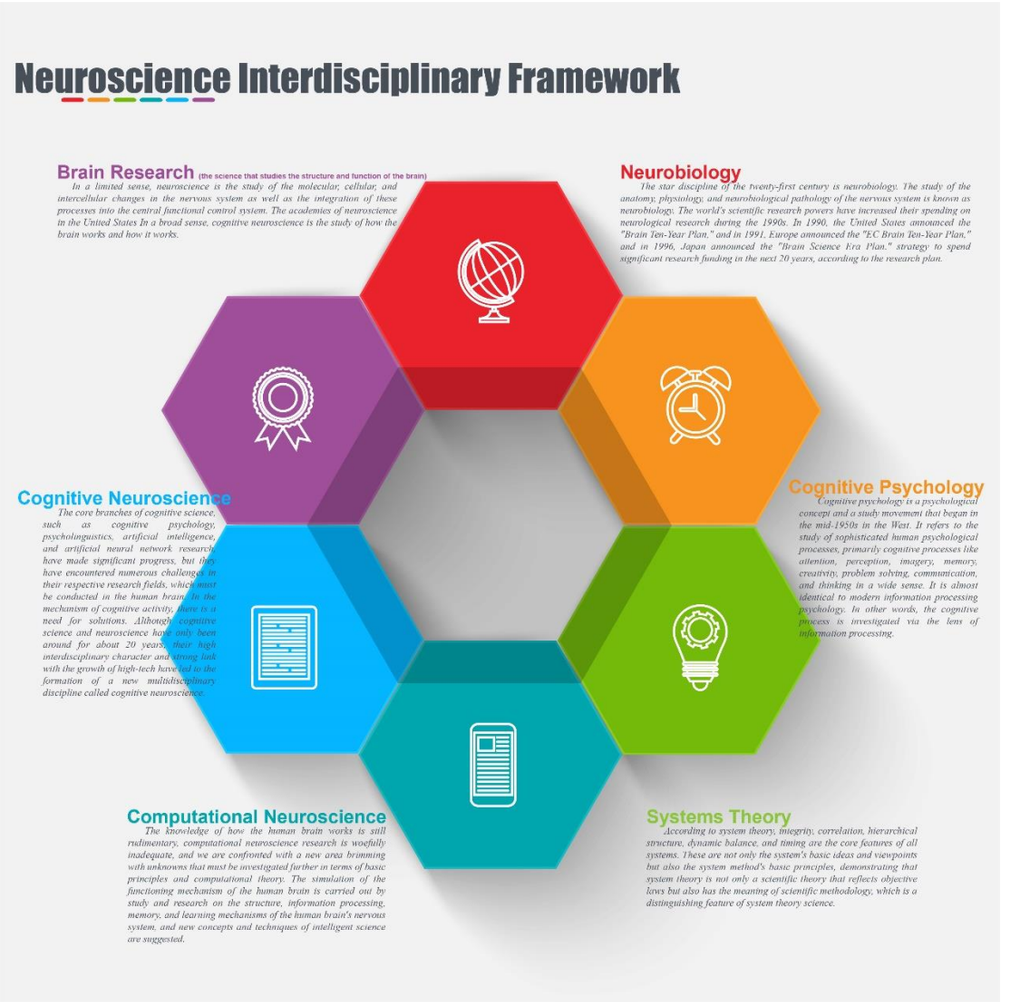


Figure 1.
A framework for the intersection of neuroscience disciplines.

2. Overview of Healthiness Research in Rural Populations

2.1. Progress In Research on the Rural Environment and Population Healthiness

The rural environment has a tremendous influence on people's health. According to Yu Fazhan, the three systems of rural ecological environment, agricultural production environment, and rural habitat environment all have their health concerns, and the material health of rural people can only be ensured by guaranteeing the health of all three systems [3]. Wang Xiaoyu et al. discovered that habitat environmentalists Jingjing Ma and Juxin Zeng investigated the link between rural longevity and the environment in detail, using the objective phenomenon of rural longevity as a starting point by analyzing the impact of the rural landscape environment on farmers' health in China.[4] A considerable favourable connection between longevity and environment was discovered [5]. A suitable habitat environment positively impacts people's physiology and psychology, such as lowering blood pressure, boosting cognitive ability and attention, psychologically minimizing destructive emotions, relieving mental stress, and increasing happiness [6].

2.2. The Influence of Habitat Factors on Healthiness

A person's physical, mental, and spiritual well-being in connection to their physical environment must be included in a more significant definition of health than only illness and physical weakness. According to the World Health Organization, the risk of infection may be significantly decreased in an independent setting (WHO). People with psychological problems and low moods may be prevented from developing by

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constructing a habitat environment built out and expanding to apply rational design [7]. This ensures that the residents of the area are receiving adequate health care. For a healthy household, how do you do this? This has been a significant issue for academics in landscape architecture for as long as anybody can remember. Real-world developments need the development of new hypotheses often. Western mainstream psychologists have long favoured "pathological psychology" when treating mental illness" to define this activity. [8] In a formalized paraphrase Researchers in the United States and throughout the world have recently begun investigating the relationship between landscape and neuroscience. An innovative new concept known as "healing space" proposes that an excellent physical and mental environment may help individuals remain healthy.

It takes a variety of things to create a rural habitat situation, though. An integrated rural habitat health system requires more than a study of the single-chain link between habitat healthiness and psychological health; it also calls for the development of assessment indicators that can be used to support rural habitat health.

3. Neuroscience: The Intersection of Garden Science and Rural Health Research Fields

3.1. Cross-Fertilisation of Neuroscience with the Fields of Architecture and Landscape Architecture

According to scientific consensus, we are now in the age of biology and brain science [9], which has been in full swing since the turn of the century. Because modern neuroscience is only a few hundred years old, it is a highly cross-cutting field that is more multidisciplinary and integrated than traditional fields like psychiatry, biology, ergonomics, etc [10]. Starting with a gradual acceptance of neuroscience as an entrance point for study in areas like geography, architecture, and rural planning, and it is also becoming more popular. Brain science has three main study axes in which it meets the human habitat: To better the health and well-being of the people who live in these environments, the Academy of Neuroarchitectural Sciences (ANFA) researches the neural mechanisms that operate in these environments. Neuron morphological architecture begins with artificial intelligence and uses information technology to build architecture and brain-like interaction. Certain architectural aspects may stimulate aesthetic perception patterns in the human brain, and neuromorphic architecture investigates how these elements affect the human brain [11]. Research in landscape architecture has recently focused on incorporating neuroscience into the design of therapeutic landscapes known as "healing spaces." Through this intersection of neurology and design, it is possible to understand how healthy environments work and to help solve the age-old problem of helping people and nature live together in peace.

Local health systems should be examined as a possible option for the future. It has been common practice to include the concept of health in the design of the countryside, including physical, mental, and social health, as well as moral health, into the design of rural areas. Natural resources, social resources, plants, land, buildings, and other infrastructure all have a role in determining people's health. There are various ways to exert influence on the environment, and as a consequence, a variety of outcomes occur. Rural ecology, production, and habitat should be included as part of the "trinity" in establishing a health system based on human requirements in rural environments, as should a neuroscientific evaluation system to promote cross-sector communication and cooperation [12]. Using this method, the cognitive effects of rural living may be appropriately investigated. This evaluation approach also has the advantage of simulating the physical and mental impacts of being exposed to the environment in a controlled setting.

3.2. Theoretical Support for The Healthiness of Rural Populations

Interdisciplinary field integration has resulted in a rural habitat environment assessment technique that relies on the theoretical framework and technical methodology of neuroscience to provide a sound platform for evaluating rural healthiness. It may be conceivable to find out whether an entire system for assessing sustainable rural habitats can be created by merging neuroscience, neurobiology, and cognitive psychology.

3.3. Neurobiology

Neurobiology studies the nervous system's interaction with brain tissue and the central nervous system to understand better the material foundations of brain function, human behaviour, and mental activity [13]. Neurobiology is known to study brain tissue mobility, and the effectiveness of the environment's mediated reactions on human beings' physical and psychological systems via feedback and responses produced by the biological mind and body. Because of the complexity and refinement of its subject matter, neurobiology may

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explain the input of the environment on the body and mind by carefully observing the trajectory of movement between the body and objective social reality. The direct effect of the external environment, the mediated comparisons and feedback, and the influence of this deep mechanical element on the external environment all contribute to a thorough comprehension of the habitat environment's complexity. Even if it is just a few molecules of change, the coherent influence of central neural transmission on the body's mechanical reaction may be employed as a theoretical basis for researching the habitat environment and advancement. By investigating the "environment-psychology" link, landscape and gardening [14] may dive further into the "external environment-central nervous system-bodily feedback-psychological modifications" interaction.

3.4. Cognitive Psychology

With a distinct theoretical approach, cognitive psychology began in the mid-1950s and has grown important as a field of study for higher mental processes in humans [15]. In a broad sense, cognitive psychology entails a more in-depth examination of cognitive functions such as sensory perception, consciousness, attention, learning and cognitive memory, language, emotions, and social behaviour, all of which are crucial in humans' understanding of the relationships that exist between themselves and their surroundings. Information processing psychology is the adoption and reprocessing of information in the cognitive process, as defined by research organizations worldwide [16]. Regarding disciplinary integration, cognitive psychology is founded on psychology and cross-pollinates with other sciences to create its theoretical paradigm.

The history of cognitive psychology shows that the Gestalt school is known for believing that the "whole" is more important than the sum of all the parts. Solving an issue in which the problem's constituent components seem unconnected may be accomplished via a creative "epiphany" [17]. It's also relevant to the problems we face as a species in our natural home. Many of our early plans for dealing with environmental issues may seem comparable or irrelevant in an ecological context. However, each component plays a crucial role in resolving environmental issues when taken as a whole and after careful consideration. Studying cognitive psychological changes between ecological elements and human emotions in rural habitats through mental health lenses is critical to studying peaceful cohabitation between people and nature based on a knowledge of cognitive psychology. It may also lay the theoretical groundwork for neuroscientific studies of rural settings.

3.5. Tools For Rural Habitat Planning from a Neuroscience Perspective

New options for designing rural architecture and landscape gardening have been opened up by the multidisciplinary character of neuroscience, notably with the employment of neuroscience approaches in urban development in recent years. Scientific ideas and research methodologies in neuroscience are being applied to the study of landscape gardening as a means of providing a new theoretical framework for understanding human habitat complexity. Images and data are presented in digital visual representations to examine the effects of environmental change on humans using the appropriate neuroscience techniques Table 1, as seen below.

Neuroscience theories and rural habitat healthiness still have gaps, which is where we are right now. It is possible to get fresh insights into the logic of rural environmental governance by bringing together researchers from different fields.

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Table 1. Planning and inspection tools for rural habitats from a neuroscience perspective (drawn by the author).



	Methodological System		Theoretical Basis	Empirical Research
Landscape garden planning tools	Create a system of "inheritance + innovation" in rural settlements.		Agricultural workers' villages in rural areas serve as a long-term source of productivity and living for rural inhabitants. Location, climate, mountains, water, and vegetation make up the second stage of the rural settlement environment system. Both the natural and human space levels, which are mostly made up of vernacular architecture and folk culture, work in harmony to create a beautiful and peaceful rural settlement setting.	Think about Dubei Township in Shijiazhuang's "one river and six villages" example. Based on local culture, the "One River and Six Villages" planning and design project focuses on energizing the streets and alleyways of traditional villages and creating a diversified and unique rural environment. A planned and designed project focuses on creating an urban green space, coordinating the neighboring farms, and correctly changing the conventional planting mode into a productive landscape, which not only shows integration of land and landscape but also accomplishes land diversification.
	Create a "control + quality transformation" rural productive landscape system.		The fundamental ingredients for a productive landscape are a range of production factors, and it serves a specific role in terms of the output of production materials while also meeting the aesthetic demands of the public in terms of landscape color and shape. A landscape type that is both environmentally friendly and visually pleasing.	
	Create a "protection + usage" green space system in rural areas.		There are four kinds of green space in the new "Urban Green Space Classification Standard" (CJJ/T 85-2017) released in June 2018: scenic/recreational/ecological conservation/regional facility/production green space (EG1), regional green space (EG2), and production green space (EG4). Highlighting regional green space as a frontier for urban and rural development, addressing the tension between urban and rural dual economic systems, and accomplishing the merger of city and country is the focus of this new iteration.	Consider the growth of Xianju National Park as a case study in this regard. By using regional overall planning and zoning management, the Xianju National Park project implements class and graded protection and secures the park's benign growth. To protect the park's general well-being, non-environmentally friendly initiatives are strictly prohibited.
	Create a rural scenic road system that is "continuous + open."		Roads designated as scenic byways serve a variety of purposes in addition to transporting people and providing scenic views. Setting up scenic roads between different towns helps protect the ecosystem of the area. These roads form an interconnected regional spatial network that gives visitors a great view of the surrounding landscape and helps each town along the route grow in the long run.	Ulanqab Scenic Road, for example, was meticulously planned and designed. The village's location in relation to the region's natural resources is a fundamental component of rural development. A rural planning pattern's "ecological beauty" is affected by how the area is being developed and by the natural environment in the area.
	Detection Method	**Detection Indicator**	**Technical Principle**	**Scope Of Application**
Neuroscience Techniques	Electrocardiogram	Number of heartbeats	Heart disease and changes in heart rate go hand in hand. Patients with heart disease are more likely to have a heart rate of 160 beats per minute or lower. Palpitations, a tight feeling in the chest, and other symptoms should be checked out as soon as possible to find out what's wrong.	Heart rate maps may be used to measure people's perceptions of their surroundings and to examine changes in their heart rate maps before and after changes in the environment. This can help you understand the preferences and requirements of various groups on a particular terrain.
	Electroencephalogram	Brain waves	Using electrophysiological indications, brain waves may be used to capture activity in the brain. Postsynaptic potentials, which occur simultaneously in a large number of neurons while the brain is active, are added together and create The surface of the cerebral cortex, also called the scalp, shows how the nerve cells in the brain are working electrophysiologically and records the changes in electrical waves that happen when the brain is working.	Instruments that measure changes in brain waves can be used to find out what people are doing and, as a result, their comfort level and emotional state, as well as how much their bodies and minds are changing.
	Biosensing	Biological chemicals are sensitive and transform electrical impulses based on their concentration.	It is possible to record brain activity using electrophysiological indicators derived from recordings of brain waves. While the brain is active, a huge number of neurons produce postsynaptic potentials, which are joined together and form a single spike. The skull surface displays how brain nerve cells perform electrophysiologically and documents variations in electrical waves that take place while working in the brain.	Biosensors can be used to pick up on small changes in a person's physiological data, which can then be used to create the right kind of landscape for different groups of people.

5. Construction of a Conceptual Model of the Impact Mechanism

To build an operational mechanism for the rural habitat's healthiness, a clear understanding of the mechanisms that influence its healthiness is required, as well as an understanding of the ways and processes by which various components interact in the system's operation.

5.1. Components: a Triadic System for a Healthy Rural Sexual Environment

Components that make up the elements must be clearly defined in the mechanism's workings. Using the three pillars of triadic epistemology, methodology, and practice found in landscape gardening [18], Professor Liu Bingyi explains how to develop an ontology in landscape gardening that includes "environmental ecology," "behavioural activity," and "spatial form" (Figure 2). The triad's understanding of things is centred on harmony, which is the medium of its connotation in terms of the philosophical dimension of "unity of

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opposites," making it reasonable for the triad to exist in the dimensions of "environmental ecology" and "behavioural activity." A spatial morphology meta-system mechanism may be used as part of the binary mediation of intuitive phenomena and objective items in the 'activity' dimension. Rather than relying on one mediator to link all three meta-systems together, as shown in the diagram, each one acts as a mediator for the other two, creating a trinity of meta-mediated commonalities. This trinity includes criteria and adjudication functions related to landscape garden planning and environmental creation. The meta-systems for environmental ecology include:
Aspects based on the physical reality of our planet.

5.2. Research on Ecological Preservation
The chain of reactions establishes a healthy environment that nourishes the human mind.

A person's "behavioural activity" is how their environment impacts their conduct and influences the subject's and the object's behaviour in the landscape garden. It is via the "spatial form" that the environment's ecology and behavioural activities are preserved. So, it can be used as a guideline for figuring out the stability part of the triadic balance.

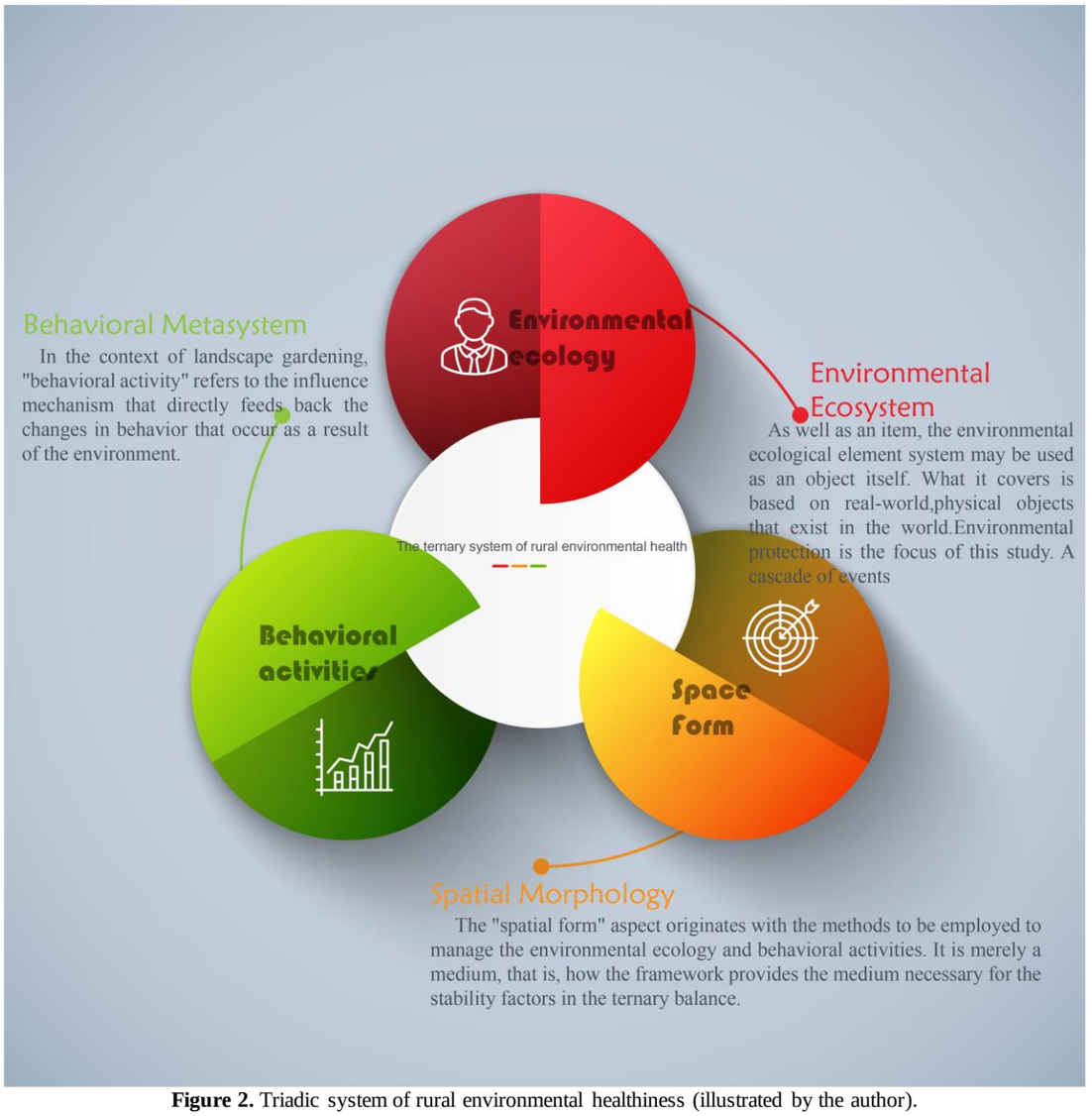


Figure 2. Triadic system of rural environmental healthiness (illustrated by the author).

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5.3. Mechanism of Influence: "Environmental Change - Central Transmission - Body Response."

The interactions between the different elements influence the mechanisms' workings. When it comes to the workings of the brain's neuronal network, the human body is merely a mediating variable. The component elements' action methods would not be possible without the mediating variable. It is crucial to define how the environment is connected to health outcomes. The human body's reaction to changes in the background might work in a "micro-state" regarding the manifestation of emotions.

In contrast, the brain's perception of changes in consciousness is usually clearly expressed. Thus we can see that the fundamental pathway of bodily feeling in a healthy rural environment is played out through the awareness of one's environment and the tracks that produce change [19]. In the same dimension as it is, and each person has distinctive elements of characteristics and different modifications to perceptibility, this can be used as a moderating variable that can be made one of the indicators of the determination of the influence of the factor mechanism. In contrast, the interpretation of the variables arising from the instrument and the pathways of the whole conceptual model can be characterized independently by determining the global synthesis.

As discussed above, to integrate a healthy environment into rural environmental governance, it is possible to fully use the transmission effect between "environmental change-central transmission-human response" to activate the health impact mechanism. Based on preliminary research in the neurosciences, a conceptual model of the impact mechanisms of liminal life spaces (Figure 3) was developed. The causal relationship between the instrument and the body's response and feedback is the mediating variable that explains the pathway of the rural environmental health impact mechanism system. The impact mechanism operates through the organization of the triadic system of "environmental ecology, behavioural activity, and spatial form," which determines the health effects. This means that the spatial dimension of the rural environment depends on the "environmental ecology" and "spatial form" meta-systems, while the changes and effects of the rural habitat on people and the period they have to live to depend on the "behavioural activity" meta-system. The "behavioural activity" meta-system The relationship between psychological and physiological health maintenance and the social dimension, which is the part of the overall picture that acts, influences, and constitutes the whole, is visually manifested in the effect that the person's presence in a healthy rural environment achieves a state of integration, generating physical and mental pleasure and health effects that cannot be regulated without the system of health influencing mechanisms.

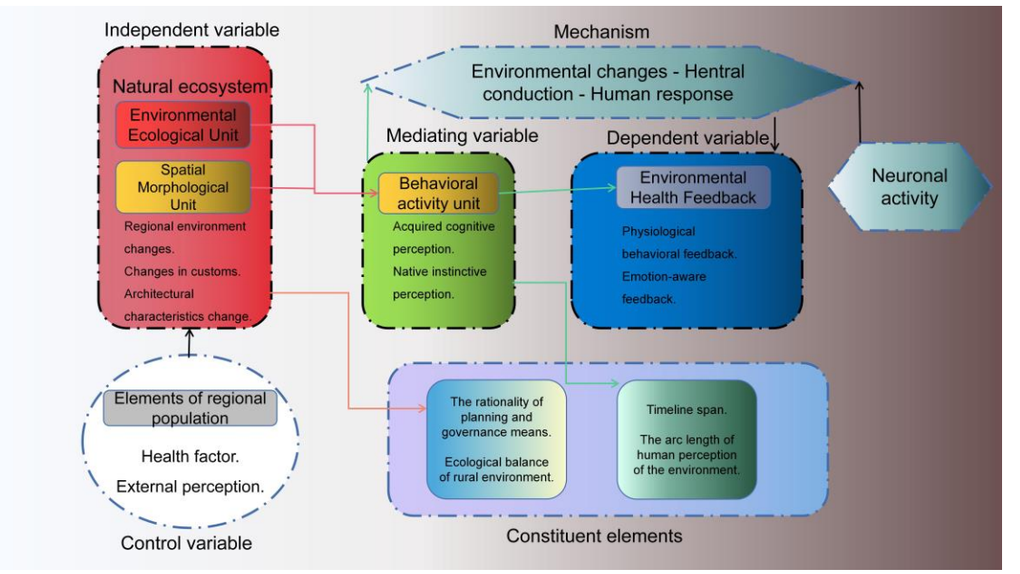


Figure 3.
Conceptual model of rural environmental healthiness impact mechanisms (drawn by the author).

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6. Empirical Simulation Analysis of the Healthiness of Rural Habitats

The effect mechanisms of the theoretical support network have been categorized based on the discussion above, including ideas, models, research materials, and technological techniques. To conduct empirical simulations inside the conceptual model impact mechanism framework, a preliminary foundation for examining recommendations for practice may be established using theoretical sorting. The Banqiao Township, Zhangye City, Gansu Province, is an example of a real-world experiment to explore the feedback impact of human neuro-emotional interactions under the rural habitat healthiness model.

6.1. Habitat for Health

Building a healthy environment is a long-term process. Integration and comparison with current conditions are essential to identify the problems and how they can be solved, as well as a subsequent rational transformation in which neuro-emotional changes in the population are different and produce simulated situations that affect mechanisms.

6.1.1. The Current Situation of the Habitat in Banqiao Town

Environmental pollution has been shown to hurt human mental and emotional well-being. In such an environment, human performance is defined by disgust and impatience. The graphics in this scenario (Figure 4) depict the following concerns: As a general rule, there is asphalt cracking on all four of the roads; the east road measures 9.5 meters wide; the west measures 5 meters broad; the south measures 10 meters wide; and north measures 12 meters wide. First, there are no parking places on both sides of the street, resulting in automobiles parked disorganizedly; second, there are no red street lights or road guidance signs, making it simple to generate traffic jams.



Figure 4.
Existing building plan (drawn by the design team).

6.1.2. Habitat After Rationalisation

Planning for Panchiao Town's rural landscape should use the impact mechanism model to evaluate and anticipate environmental health to build a suitable living environment after conducting preliminary ecological research and data exploration. Long-term interactions between people and their surroundings produce a distinct identity for a community and an emotionally resonant relationship. To establish this emotional climate, we need to link to the past and the current circumstances in which individuals have been in this setting.

1) Road planning is crucial. The street as a whole acquires the qualities of continuity and continuity simultaneously. Straight and continuous roads are required in an overall street to satisfy traffic flow without obstructing the movement of pedestrians. They must be built logically, considering local people's behaviour trajectories. People in this region of China's northwest are free-spirited. In their temperament, people tend to be impulsive and unconstrained. They have little regard for regulations and have a strong desire to ignore them. As a result, the road's layout must include both the needs of pedestrians and motorists. However, this does not imply that customers will be satisfied with a basic design. Rural people's aesthetic expectations have also risen as education has become more widely available. People are always looking for new ways to express their individuality through clothing choices. The overall street plan is staggered and cohesive, as seen in Figure 5, with a spacious and uncomplicated design and a unique signage system to direct traffic logically [20]. The flowers on both sides of the road are visually appealing and help to decorate the entire street.

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Figure 5.
Landscape rendering of the improvement of the appearance along the street of Jiushe in Banqiao Town (Drawn by the design team).

2) Emotions may be felt at the theatre square. The old building has to be transformed and upgraded to improve the original court (Figure 6) by integrating the rainbow city concept. The paved courtyard lacks vitality and monotony and needs to be transformed and upgraded. The old building also needs to be upgraded. There are two distinct sections to the newly refurbished plaza (Figure 7): one is a sports field, and the other is a parking lot. In addition to addressing the region's concentrated parking, the consolidated car park maintains the streetscape's uniformity and coordination. Emotions play a critical role in moulding and creating a healthy environment via the "environmental change-central transmission-human reaction" cycle. The "physiological space" of conduct is influenced by "behavioural practices." To put it another way, an "environment-behaviour" interaction is defined as an interaction between an individual's physical conduct and the characteristics of their environment that promotes health. The day-to-day tasks A person's drive to act might be sparked by the contrast between the hues of the rainbow. Breaking up the drab ambience of the original area will invigorate this behavioural touch and enhance its ability to impact people.

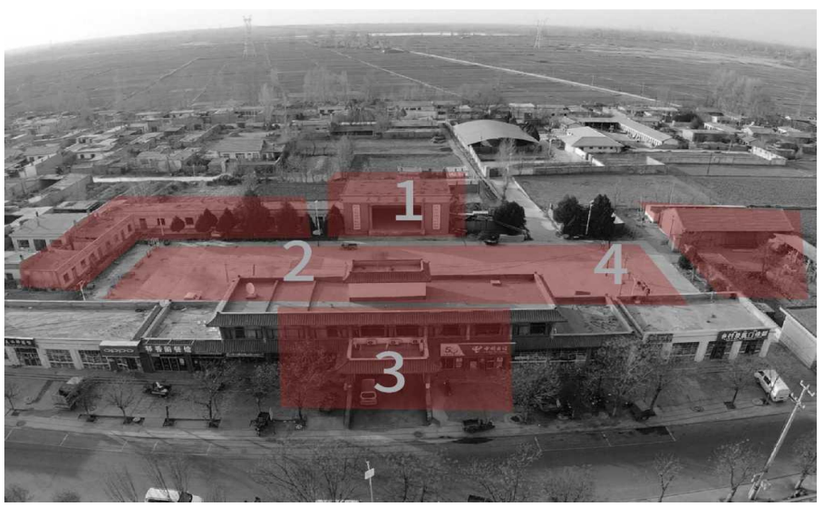


Figure 6.
The current state of the theatre square

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Figure 7.
Sports Square Plaza (Drawn by the design team).

6.2. Analysis of the Emotional Feedback of the Crowd Before and After the Transformation

A conceptual model of the health effects might be used in rural living spaces. Human emotions were the primary focus of the actual project, confirming the machine simulation's practicality. Banqiao's local government and the information gathered during the pre-and post-sampling visits have helped us better understand Banqiao's environment (mainly for the permanent population of the renovated town, i.e., 576 people, excluding 121 people who were working outside the city.) The population's emotional dimension was analyzed before and after the transition (Figure 8).

6.2.1. Emotional Feedback from the Pre-Modification Population

1) More than two-thirds (76.83%) of the local population is dissatisfied with their surroundings, which is reflected in the troublesome and inconvenient nature of the original streets due to their unkempt, messy, and poorly laid out layout and planning, as well as the lack of design for people movement, which makes people feel awkward and inappropriate when living in such an environment. In light of the dissatisfaction, the atmosphere must be addressed and a strategy drawn out immediately. 2) Most environmental facilities represent a health risk, with just 15.96% of the total. Young people are particularly vulnerable to danger since they are prone to mental instability and irritability growing up in such a chaotic atmosphere. It's a fantastic place to start for future renovations based on the prior study's findings. 3) Why is a comfort level when the environment is just 7.21 per cent comfortable? Those who have lived in such an atmosphere for an extended period have forged a strong sense of aesthetic and mental stability. As a result of restoration, the comfort level is likely to go up, which is good for one's physical and emotional health.

6.2.2. Emotional Feedback from the Modified Population.

1) The comfort of the environment has increased by 41.26%. The comfort of the environment is reflected in the overall unified planning of the environment, changing the original backward village street environment and road environment so that the village environment presents a good atmosphere of neatness, beauty, and orderliness. 2) Interactivity in the environment has increased by 21.01%. The original streets did not have appropriate fitness equipment. At the same time, the current environmental transformation is relatively complete for the configuration of fitness equipment, and the reasonable matching of colours has improved the overall environment and human interaction. 3) The number of positive health factors has increased by 13.86% (there are four main factors affecting health: environmental factors, behavioural and lifestyle factors, biogenetic factors, and health service factors); now, it is the environmental factors that are beneficial to the

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maintenance of people's health after reasonable improvements. 4) Cultural integration has 7.73%. The cultural integration lies in the fact that, through the excavation of the local culture, the corresponding cultural elements and symbols are also integrated into the overall environmental planning so that the overall environment is in line with the local human characteristics. 5) The stimulation of colour has 5.29%. The stimulation of colour is mainly reflected in the area around the square because the square combines the functions of theatre and sports, basketball and other sports; therefore, in this place, its activity is necessary to maintain its stimulation, which also should be generated by the natural. 6) The street is not accessible by 4.61% because the original street does not have the input of landscape planning, which has changed some people's habitual behaviours, and the original space is open and empty. Now it will create a particular barrier between pedestrian and vehicle traffic, breaking the habitual behaviour of pedestrians. 7) The negative environmental impact factor is 3.56%. The negative environmental impact factor is that some people have been living in this environment for a long time, and the changes they feel are temporarily unacceptable. However, the negative environmental impact factor will disappear if time lengthens and more people become involved. 8) 2.68% of people are uneasy about their surroundings. The intuitive difference from the original environment, there is little feedback on the discomfort of the environment after the landscape plan.

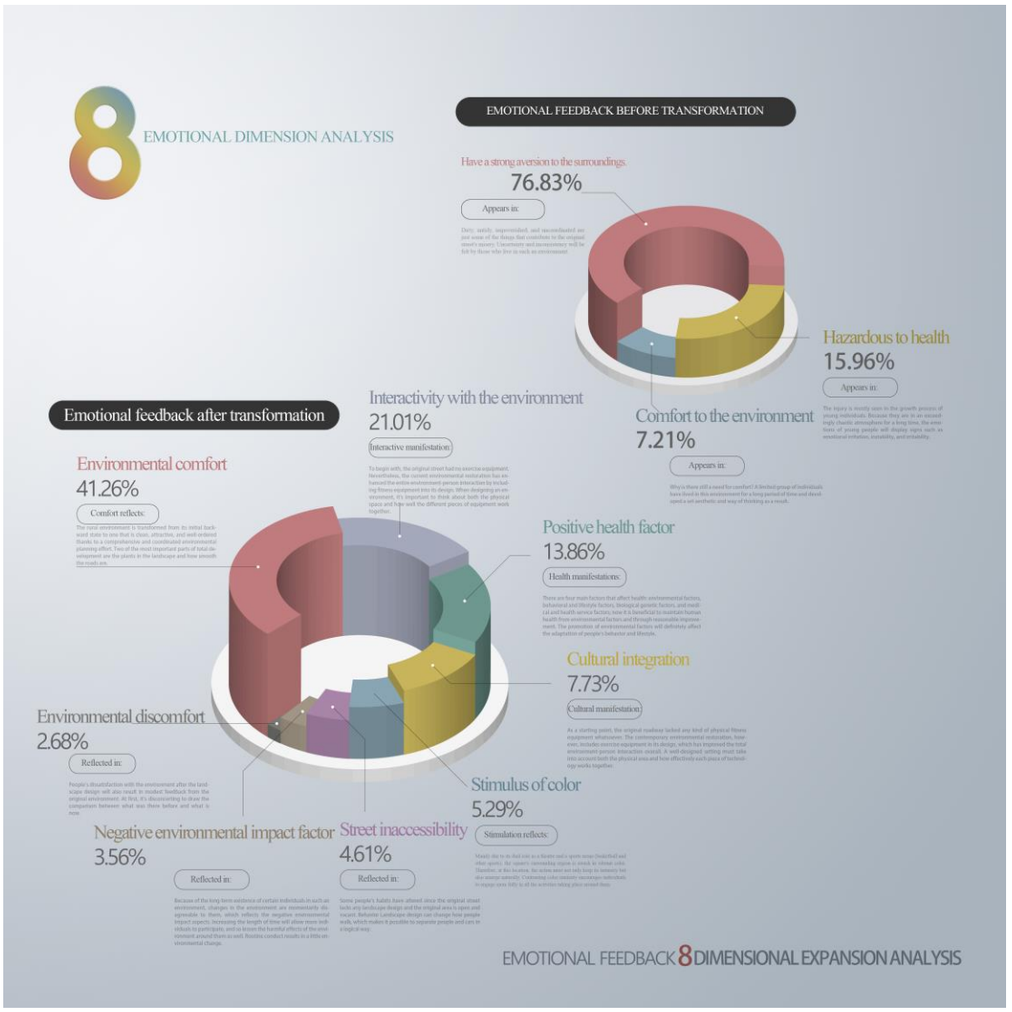


Figure 8. Emotional dimension feedback analysis chart (drawn by the author).

7. Conclusion

Interdisciplinarity may be a breakthrough point in establishing the stability and rationality of the habitat, which can be a mediator between people and nature. Modelling the rural habitat environment's impact

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mechanism provides new strategies to improve rural habitat quality and to conduct rustic building and planning more effectively. It is possible to gain a better understanding of the beneficial physiological effects on the human body and the environment by integrating neuroscience research and theory constructively with rural backgrounds and by effectively using neuroscience theory, as demonstrated by the expression and analysis of the emotional touchpoints of the population in the rural transformation case. There hasn't been much work done on integrating neuroscience with rural life. An even more thorough multidisciplinary intersection is still required, as is the consolidation of the discoveries of the discipline to allow for more exploratory diggings for building example projects and to broaden the route of rural building.

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Conflict of Interest:
The authors declare that there are no conflicts of interest regarding the publication of this paper.

Author Contributions:
"Conceptualization, W.Z. and L.W.; methodology, W.Z.; software, L.W.; validation, W.Z. and L.W.; formal analysis, L.W.; investigation, W.Z.; resources, W.Z.; data curation, L.W.; writing—original draft preparation, W.Z.; visualization, L.W.; supervision, W.Z.; All authors have read and agreed to the published version of the manuscript."

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