Advances in Social Science and Culture
ISSN 2640-9682 (Print) ISSN 2640-9674 (Online)
Vol. 7, No. 1, 2025
www.scholink.org/ojs/index.php/assc

Original Paper

Emotional Design Optimization of Memorial Space Based on Nomadic Theory

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Received: December 16, 2024 Accepted: January 02, 2025 Online Published: February 07, 2025

doi:10.22158/assc.v7n1p40 URL: http://dx.doi.org/10.22158/assc.v7n1p40

Abstract

Memorials bear the responsibility of popularizing cultural knowledge and promoting the spirit of patriotism. In recent years, due to the increasing support of the government for memorials, there are more and more memorials, and they have gradually received widespread attention from the whole society. However, with the development of the digital age, the public pays more and more attention to user experience. In today's information age, the main narrative methods of text and images have exposed the weakness of the emotional expression of memorial space. Based on the nomadic theory, this paper takes contemporary memorials as the research object, adopts literature research method, case analysis method and comparative analysis method, transforms the idea of nomadic space into the design of contemporary memorial space, combines emotional design techniques, breaks the traditional spatial boundaries, and forms a multi-dimensional dynamic space, which can reshape the experience of memorials and return to the core of space, that is, human experience, and provide new methods and inspiration for the spatial design of contemporary memorials.

Keywords

Nomadic space, emotional design, memorial space

1. Nomadic Space

1.1 Overview of Nomadic Theory

The concept of “nomadism” originated from nomadic peoples. It is a non-rational movement mode that constantly changes their living environment while grazing on the grassland. In his book “Difference and Repetition”, Gilles Deleuze proposed that nomadism is a heterogeneous free assembly state composed of repeated movements. On this basis, the concept of nomadic space was derived, which

means a heterogeneous network space, referring to a dynamic, open, smooth, continuous, free and unconstrained abstract space, which is interrelated with concepts such as tubers, differences, folds, deterritorialization, and organless bodies, forming its unique generative philosophical thought. In the interaction with the environment, nomadic space attaches importance to the connection with the surrounding environment and establishes a connection with the outside world. Nomadic behavior is not aimless and random roaming. It is a heterogeneous and free movement formed by nomads after they feel the surrounding environment. Nomadic theory has rich connotations and complex clues, and its ideological exposition is not systematic, but free from various discourses. This section selects the core concepts related to space design for an overview (Table 1).

Table 1. Basic Concepts and Characteristics of Nomadic Theory

Basic Concepts	Conceptual characteristics	Brief Analysis
Tuber	No center, no hierarchy, growth, derivation, rupture.	Refers to a decentralized and non-planar state between things.
A Thousand Plateaus	Multiple derivatives, change generation, multiple interconnection, no direction	Breaks away from the limitations of time and space and the distinction between subject and object, and strives to construct an ideological realm of freedom, diversity, integration, and generation and change.
Smoothing	Open, heterogeneous, continuous, dynamic, nonlinear.	Integrating heterogeneous elements together in a continuous manner, forming an open, heterogeneous, continuous and dynamic nonlinear space.
Deterritorialization	Break free, generate, flow, change.	It breaks the inherent rules and boundaries, liberates the potential of circulation, and realizes “slippage” and new fluidity.
Generate	Dynamic generation, mediation, process transformation.	It refuses to take the static difference structure as the starting point of cognition, and focuses on the dynamic generation of structure.

Nomadic space is an open, continuous, smooth space. The concept of smooth space defines a space with this potential: starting from any point, you can connect to any point without passing through any point. Deleuze compares Go to smooth space. In smooth space, nomads are like Go pieces, without any level restrictions, and can move freely and arbitrarily in smooth space. In contrast, “textured space” like chess assumes that residents can only act according to established rules, and has a strict hierarchy and fixed paths. In smooth space, points are defined by straight lines, and nomads determine their own movement paths and stop at certain locations; while textured space uses points to define lines, and its rule is to only allow the selection of existing movement paths.

Nomadic space is a dynamic, possible space without clear goals, and without predetermined structures and goals. The introduction of the philosophical concept of "nomadic space" into architectural space depicts a heterogeneous connection between people and the environment, thus creating a dynamic spatial form with multiple uncertainties. Architecture is dynamic, free, open, and continuous. It has the same characteristics as the regional environment and human activities. This is the nomadic feature of architecture. The “nomadic” space in architectural space is the product of the mutual influence between people and the surrounding environment. If the dynamic generation of people is ignored, the building is just a homogeneous fixed space; if the carrying function of the building and the surrounding space is not considered, people will lose their place of activities, and it will be impossible to form a nomadic space.

1.2 Characteristics of Nomadic Space

In the theory of nomadic space, Deleuze uses Go (Figure 1) to describe “smooth space”. There is no fixed direction or goal on the Go board. Each piece is free, and each piece is also part of the space, that is, the movement trajectory of each piece is unrestricted. Deleuze uses smooth space to show that nomadic space is a moving space, which opposes stillness. Deleuze's thought emphasizes difference. Smoothness is the sum of repeated differences. In space, the difference mixing method is used to extend all around to mix various difference elements, exist in space in a continuous way, and preserve the difference of each element.

Taking the Barcelona German Pavilion by Mies van der Rohe as an example, the spatial structure in the flowing space is to position the space through panels and sculptures, forming a transparent space with guidance, and this space is purposeful. Such a highly guiding spatial form is also the most common in the spatial design of memorial halls. In the Guangzhou Xinhai Revolution Memorial Hall designed by Meng Jianmin, in addition to the double entrance design, the exhibition hall also uses fixed guiding streamlines to switch between different exhibition halls to unfold the narrative experience, so that visitors can complete the reading of specific historical trajectories while completing the guiding streamlines. Due to the unlimited trajectory of nomadic space, visitors should be able to enter the space from multiple angles, and because participants are also part of the spatial composition, the space will continue to change in the dynamic changes of visitors after entering, which also means that the gathering and dispersion of visitors will also affect the space.

Figure 1. Go Diagram

1.3 The Influence of Nomadic Theory on Contemporary Space Design

The smoothness of "nomadic space" has expanded people's understanding of space, and has also had a certain impact on the spatial relationship of a group of designers. Designers have adopted a more open and continuous approach to deal with the relationship between space and the external environment, internal and external space, and internal space. In particular, the combination of parametric design and multiple influencing factors makes the generation of spatial form more rational. The "nomadic space" design breaks the limitations of striped space, making it more flexible and free in spatial form, thus creating a new spatial image.

Deeply influenced by Deleuze's nomadic philosophy and Japan's floating world thought, Toyo Ito has studied the uncertainty of space. From his early "Bag of the Nomadic Girl" to a series of works at the Sendai Mediatheque that shocked the world (Figure 2), we can see the characteristics of lightness, fluidity, and temporary nature in his works.

Figure 2. Works by Toyo Ito

Zaha Hadid believes that "the architectural landscape of this city is a very complex thing. It is not a simple relationship of square, round, high, or low. It is actually related to the environment you are in. Because the environment may be uneven, with mountains, water, and ditches. In addition to buildings, you have to consider whether there are public spaces, space, and light issues." Starting from various

changing curves in space, she studies the complexity of space. In her works, spatial forms always use various continuous surfaces to meet and adapt to complex spatial relationships.

Figure 3. Changsha Meixihu International Culture and Art Museum

For example, the spatial form of Changsha Meixihu International Culture and Art Museum (Figure 3) is inspired by hibiscus flowers, simulating the scene of hibiscus flowers falling into Meixihu and causing ripples. The curved surfaces flow and intertwine, full of vitality. Through digital technology, various elements in the space are integrated in the form of curves to form a flower-like structure. There is no clear boundary between the space and the environment and landscape, forming an open space.

Another important concept of Deleuze is “pleats”, which is a way of expressing nomadic space. Time, space, and form are all formed by the “pleating-unfolding-pleating” of pleats. Pleats have smooth continuity and no distinction between inside and outside. Today, many designers use folding techniques to make the spatial relationship between indoor and outdoor spaces smoother.

Figure 4. Yokohama Port International Passenger Terminal, Japan

Yokohama Port International Passenger Terminal in Japan (Figure 4) is a typical representative of “nomadic space”. The design of FOA was influenced by the cross-disciplinary influences of folding theory. The basis of the design is to transform the ground into a huge design plane, like an active flowing skin. The computer-generated continuous skin is also a spatial structure that is continuously folded in the vertical direction, forming an enclosed spatial form in all directions. This blurred spatial interval not only retains the difference but also creates new connections. In order to break the traditional directional streamline, the designer combined the non-returning diagram with the skin, and combined multiple streamlines with structures to construct a space with blurred boundaries inside and

outside, achieving smooth continuity inside and outside the space.

2. Emotional Design of the Memorial Space

2.1 Emotional Design Overview

Emotional design can be traced back to 2012. In Donald Norman's book "Design Psychology 3-Emotional Design", emotional design is divided into three dimensions from shallow to deep: the instinctive layer, behavioral layer, and reflective layer of emotions (Table 2).

Table 2. Characteristics of the Three Dimensions of Emotional Design

Dimensions of emotional design	Features
Instinct layer	Make users fall in love at first sight through color, texture, and form
Behavioral Layer	Make users feel good through rational and logical behavior
Reflection Layer	Arouse users' emotional resonance through cultural connotations

The emotions contained in memorial spaces are unique to humans and are also the embodiment of their core composition and value. In terms of emotions for the same memorial theme or memorial object, due to different personal cultural backgrounds and other factors, there are social commonalities but also differences; the same space or the same memorial space action path can trigger one or more emotions at the same time, and the combination of these emotions together forms an emotion with commemorative significance. On this basis, designers need to deal with the emotions of the space more clearly and strongly in order to obtain the expected emotional feelings and expression effects.

2.2 Emotional Design in Memorial Space

In the space design of the memorial hall, in order to allow the receiver of the information, that is, the audience, to receive the information more deeply, it is very important for the communicator to arouse the audience's resonance and mobilize their emotions. Then, as the carrier of this communication, the space of the memorial hall needs to accurately and logically display and convey the information to the audience in the space through multiple means, so that the audience can gain something, think about something, and do something. Integrate the displayed information, and use various means, technologies, shapes, colors, and materials to combine and change according to the display content to create rich spatial expressions, express connotations, convey spirits, tell stories, and give people different experiences and feelings.

As an exhibition space, the memorial hall has a natural connection with emotional design. Emotional design can help it convey information better and enable the receiver of information to receive information not only from a visual level, but also from an emotional level, making the visitor's experience richer. However, the means of emotional design in the current memorial hall design in my country are relatively simple, mostly using color psychology, multimedia technology, theme symbols,

etc. Limited means can easily bring a boring experience to visitors, and most of the memorial hall spaces now use streamlined narrative experience methods, such as the Guangzhou Xinhai Revolution Memorial Hall. This method limits the experience of the information receiver and is more likely to cause monotony in experience.

2.3 The Necessity of Combining Nomadic Space with Memorial Design

Combining nomadic theory with the spatial design of the memorial hall is to transform its original strongly guiding spatial form. In the past, most memorial hall designs followed the method of “one entrance and one exit”, that is, setting fixed entrances and exits, and limiting the movement trajectory of visitors according to the designer’s planned experience. Although this experience method allows visitors to feel the “theme” set in advance and the content that the designer wants to express, it also makes the experience very single. In addition, the means of spatial emotional design are limited, and visitors are prone to feel boring and unable to immerse and deeply resonate. Through the combination of nomadic theory, multiple free and non-restrictive dynamic streamlines can be formed, and visitors can enter the space from any angle and freely choose the way to visit. Such a space will be a multi-dimensional dynamic space, emphasizing the diversity of differences, and human movement also brings about temporal dynamics. By breaking the traditional limited spatial boundaries, the experience of the memorial hall can be reshaped to return to the core of the space, that is, the human experience. In the design process, the entire space will undoubtedly integrate the designer's own subjective consciousness to form a given “striped space”, breaking through this limitation and returning the multiple feelings of the experiencer, and visitors can form a connection with the space according to their own ideas. Since this connection is spontaneously generated between the visitors and the space, their emotional acceptance is higher and the resonance experience is stronger.

3. The Construction of Memorial Space from a Namadic Perspective

3.1 Open space Shaping

Nomadic space emphasizes openness. Its form is influenced by Deleuze's concepts of “fold generation” and “territorialization”. It no longer emphasizes static and mechanical forms, but tends to seek dynamic and complex open systems. The interaction between various elements in the environment, such as climate, function, flow of people, and transportation, and the building is achieved through the dynamic integration of various elements inside and outside the building with the architectural space, thus forming a continuous dynamic development, breaking the closure of the place and the environment, and forming a nomadic space with fluid characteristics. The specific implementation of nomadic architecture requires solving the problem of "finding the shape" of the building. “Finding the shape” is a self-organized architectural form from the bottom up, which has the greatest environmental adaptability.

The design of the memorial space can adopt the method of “pleat generation” to “pleat-expand-pleat” the building to form a free and open architectural form. In the process of its space design, the folding of

the building skin, the blurring of inside and outside, and the open streamline can be used to achieve a smooth form that does not distinguish between inside and outside at the philosophical level. It can also break the boundaries of traditional space and transition from the hierarchical structure of “striped space” to “nomadic space”. The dimension of space is further expanded to create a free flow of space and a continuous and open form.

3.2 Coherence Plane Solution Generation

Nomadic space is a free movement from point to point, which is different from the underlying logic of most current streamline-guided designs. So how can we transform the current space into a nomadic space?

The scope is limited to the “convex space”, and each exhibit that needs to be displayed in the memorial hall is regarded as a point element. All point elements are randomly distributed in the “convex space” to form a random plane distribution (Figure 5). Each point element is part of the space, and each exhibit divides the space to form a smooth space, which is the material space with nomadic space characteristics. In such a space, visitors can choose to enter and leave from any angle and freely choose the route of the visit. Such free flow lines are also a manifestation of spatial smoothness (Figure 6).

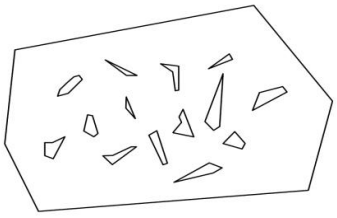

Figure 5. Plane Diagram

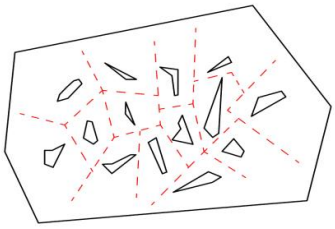

Figure 6. Flow line diagram

The above is a spatial transformation on the two-dimensional x and y to break through the limitations of the plane. If the spatial transformation on the z axis is added to move and change in three-dimensional space, coupled with the influence of dynamic time, a nomadic transformation of four-dimensional space-time is formed. The collection route is interwoven with the Mercedes-Benz historical route, and the viewer can switch between the two routes at will. At the same time, there is a high degree of dynamic change in the vertical dimension, showing the dynamic and diverse tuber properties of nomadic space.

3.3 Generation of Ambiguous Spatial Functions

Today, as human lifestyles are constantly changing, traditional single and static spatial functions can no longer meet the needs of society, and polysemous and variable mixed spaces constitute a new spatial language. The individual activities of nomadic groups demonstrate the freedom of the subject, thereby promoting the diversity and complexity of spatial functions. The memorial can reflect the material needs of nomadic groups for social public space by adopting the design framework of

"space-nomad-narrative". After entering the space, the nomadic groups can show strong autonomy in front of the functional blocks. In terms of the attributes of each functional block, it is possible to selectively ensure that the nomadic groups are free, relaxed and purposeless, realize the optimization of composite and multi-functional space, realize a free and open nomadic form, and create a relatively stable external microclimate and a comfortable indoor microecological environment of the building.

3.4 Multi-dimensional Synaesthesia Spatial Experience

Nomadic space has the spatial characteristics of “contact”, highlighting that the nomadic subject is an organless body with multiple tactile spatial perception capabilities. Multi-tactile is the common feeling of connecting multiple senses such as sight, hearing, touch, and smell. “Multi-sensory art” is a concept proposed by Wang Duanting of the Institute of Fine Arts of the Chinese Academy of Arts based on contemporary art. Multi-sensory art emphasizes the simultaneous presence of critics and visitors, as well as the real-time feedback and experience of the body in space. The body in the nomadic space is in a state of intercommunication of various senses, and perceives the space in a synaesthesia way. Because the cultural backgrounds of the participating audiences are different, the exhibits cannot resonate with everyone, but multi-sensory art provides a more direct sensory experience for the theme of nomadism, thereby enriching the contact spatial characteristics of the nomadic space. “Multi-sensory art” is now not only used in art exhibitions but also in museums, such as the “water drop” in the Nanjing Massacre Memorial Hall. The emotional experience brought by this form of emotional design is so strong that words and pictures in traditional memorial halls cannot bring it.

Integrating multi-sensory art into nomadic space can bring a dynamic and diverse nomadic experience, and multi-sensory art can help visitors directly feel the experience brought by the exhibits with their bodies. The “body without organs” formed in this way is also one of the important ideas of nomadic theory. This direct sensory experience can bring equally intuitive emotional feedback. Whether it is positive or negative emotions, they can be deeply conveyed to the audience through the design of “multi-sensory art”. Through the placement of multi-sensory art, the memorial space can better utilize the spatial characteristics of the nomadic space to enrich the means of emotional design and deepen the experience.

3.5 Free Relationship Connection Mode

Nomadic space has the characteristics of analyzing the differences between the environment and the site, and can explore the implicit meaning of things and create new relationships in non-hierarchical spaces. The memorial space can blur the boundaries of the internal street space, and the expansion or contraction of its boundaries depends on the density and behavior of the people passing through. In such a memorial space, there is no clear target point. Visitors can move freely and have multiple choices in the space of activities, or they can be in a state of floating in the space. Faced with the flow and fusion, decomposition and stagnation between the building blocks caused by the differences in space, the building responds dynamically to the relationship between the spaces through interlacing and juxtaposition, which can provide a rich narrative environment for the space and make the interaction

between the space and the nomads closer.

4. Discussion

This paper extends the concept of nomadic space to the field of space design and discusses the spatial characteristics of "nomadic space". Nomadic theory has a profound impact on the field of space design, bringing about changes in spatial concepts and providing many possibilities for innovation in design techniques. Contemporary designers' exploration and research on "nomadic space" provides new design inspiration and ideas for contemporary space design. Linear design thinking can no longer adapt to the diversified and complex needs of today's era, and various new spatial concepts and design concepts emerge in an endless stream; the design exploration of "nomadic space" in form is more bold and innovative, completely subverting the limitations of traditional spatial geometry, and complex forms such as softness, torsion, continuity, flow, and dynamics continue to emerge, making the spatial form more open and free; the exploration of "nomadic space" design produces a new view of spatial function by focusing on non-limitation, randomness, and value-added; the development and maturity of new technologies provide favorable support for the design exploration of "nomadic space", and the design exploration of "nomadic space" also promotes its development.

In addition, while affirming the advantages of "nomadic space" design, we should also see its existing problems. For example, the unlimited pursuit of spatial openness will lead to irrational spatial functions. This paper makes a preliminary discussion on the application of nomadic theory in the spatial design of memorial halls, and provides new ideas and methods for the spatial design of contemporary memorial halls. However, there is still room for further exploration, and there are certain limitations in terms of feasibility, economy, and practicality.

Acknowledgement

This paper was supported by 2024 Guangdong Province General Colleges and Universities Key Field Special project from the foundation "Paradigm study on the digital protection and development of Guangdong's historical villages to help the implementation of the 100 million project" (2024ZDZX4065).

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