

Analysis of Typical Image Elements of "Geng Lu Bu" Marine Culture Based on Metaphor Extraction Technology

Jing Cai, Chunliang Yang*

School of Smart Tourism, Hainan College of Software Technology, Qionghai, China, 571400

Keywords: Metaphor extraction; Change the road book; Marine culture; Typical image elements

Abstract: This article discusses the image elements of marine culture in "Geng Lu Bu", and reveals its rich cultural connotation and important position in cultural inheritance and expression. As the concrete embodiment of marine culture, the image elements of marine culture bear the historical memory, are an important bridge connecting the past and the future, and have far-reaching significance for promoting the inheritance and development of marine culture. In this article, metaphor extraction technology is proposed to identify and extract the metaphorical expressions in "Geng Lu Bu", and then the marine cultural image elements can be deeply explored. These image elements together constitute a colorful world of marine culture and play an important role in cultural inheritance and expression. Finally, the article puts forward some suggestions, such as constructing and perfecting the inheritance mechanism, promoting innovation and development, and strengthening cultural communication, in order to make these precious cultural heritages glow more brilliantly in the new era background.

1. Introduction

In the long river of human civilization, the ocean has always played a vital role. It is not only the cradle of life, but also a great stage for human beings to explore the unknown and expand their living space. In this vast and profound field, a rich and unique marine culture has been bred [1]. As a navigation guide handed down from generation to generation by fishermen in Nanhai, China, "Geng Lu Bu" records a wealth of navigation routes and marine knowledge, and contains profound marine cultural image elements, which is an important text for exploring marine culture [2]. As the crystallization of fishermen's long-term navigation practice in the South China Sea, "Geng Lu Bu" reveals the ancient fishermen's cognition, utilization and awe of the ocean with its unique perspective and rich content [3]. These texts are full of vivid descriptions and profound feelings about the ocean, which not only reflect fishermen's careful observation of the marine environment, but also reflect their complex and subtle relationship with the ocean.

The value of "Geng Lu Bu" lies not only in its practicality as a navigation guide, but also in its uniqueness as a carrier of marine culture [4]. Between the lines of the text, there are rich marine cultural image elements, which are the crystallization of fishermen's deep understanding and emotional experience of the ocean. Through metaphor, symbolism and other rhetorical devices, they concretize fishermen's complex feelings of awe, dependence and exploration of the ocean, forming a unique symbol of marine culture [5]. These symbols not only have distinctive regional characteristics, but also contain universal marine cultural characteristics, and are an important bridge connecting ancient fishermen and modern people's marine cognition. Metaphor can convey deep and unspeakable meanings through specific images or situations [6]. In "Geng Lu Bu", metaphor is widely used to describe the marine environment, the navigation process and the relationship between fishermen and the ocean. Through metaphor extraction technology, we can systematically identify and analyze the marine cultural image elements in "Geng Lu Bu" and reveal the cultural connotation and symbolic significance behind it.

This article aims to discuss how to use metaphor extraction technology to systematically analyze and interpret the image elements of marine culture in "Geng Lu Bu". The recognition and understanding of metaphor often depends on the specific context and cultural background. As an ancient navigation guide, the context and cultural background of "Geng Lu Bu" are significantly different from those of modern times. Therefore, when applying metaphor extraction technology, it

is necessary to fully consider this factor and combine the knowledge and methods of historical philology, anthropology and other related disciplines to ensure the accuracy and depth of analysis.

2. Overview of Geng Lu Bu

"Geng Lu Bu" is a treasure in China's ancient navigation literature, which records rich navigation knowledge and experience and carries profound marine culture. The history of "Geng Lu Bu" can be traced back to the heyday of ancient China's navigation. At that time, China navigators, with their courage and wisdom, opened up many sea routes and accumulated rich navigation experience [7]. In order to pass on these valuable experiences, navigators began to record the important information during the voyage, and gradually formed a navigation guide such as "Geng Lu Bu". These records include basic information such as sailing route, distance and time, and describe in detail natural conditions such as sea conditions, meteorology and hydrology along the way, as well as geographical features such as islands, reefs and ports. This information is undoubtedly priceless to later navigators.

In terms of circulation, "Geng Lu Bu" has gone through a long history and has been preserved to this day. Although some possible versions have been lost in the process of inheritance, the existing "Geng Lu Bu" still provides rich historical information [8]. In "Geng Lu Bu", the recorded knowledge and experience of ocean navigation is its core value. These knowledge and experience cover all aspects of navigation, from route selection to navigation skills during navigation, from meteorological observation to sea state judgment. For example, "Geng Lu Bu" describes in detail how to use natural factors such as stars, wind direction and current to navigate, how to adjust navigation strategies under different sea conditions, and how to take countermeasures in case of emergency.

In addition to specific navigation knowledge and experience, "Geng Lu Bu" also records what navigators saw, heard, thought and felt during the voyage. For example, through the description in "Geng Lu Bu", we can learn about ancient navigators' observation and cognition of marine life, their records and feelings of island customs, and their keen insight into marine meteorological changes. "Geng Lu Bu" plays an irreplaceable role in the study of marine culture. As an outstanding representative of ancient navigation documents, "Geng Lu Bu" not only provides rich historical information and cultural materials, but also reveals the spiritual world and cultural pursuit of ancient navigators. By studying "Geng Lu Bu", we can have a deeper understanding of the brilliant achievements of ancient China's navigation, feel the courage and wisdom of navigators, and appreciate the unique charm of marine culture.

3. Analysis of typical image elements of marine culture

Marine culture, as an important part of human culture, bears rich history and traditions and contains unique image elements. These image elements, such as marine life, navigation tools and marine climate, are concrete manifestations of marine culture and important carriers of cultural inheritance and expression. Marine culture, in short, is the sum of material and spiritual wealth formed by human beings in the long-term interaction with the ocean. It includes many aspects, such as navigation technology, marine trade, marine myth, marine art and so on, and has distinct regional, historical and pluralistic characteristics. The characteristics of marine culture are mainly reflected in its openness, inclusiveness and innovation. The vastness of the ocean endows marine culture with the characteristics of openness, which enables it to continuously absorb and integrate various foreign cultural elements; The profundity and mystery of the ocean endow marine culture with inclusive characteristics, so that it can accommodate and nourish various cultural forms; At the same time, the vagaries of the ocean have also stimulated human's desire for exploration and innovation, making marine culture distinctive and innovative.

In marine culture, typical image elements are indispensable and important components. These image elements are various and have their own characteristics. Marine life, such as dolphins, whales and corals, is an important part of marine ecology and an important image in marine culture. They not only represent the vitality and vigor of the ocean, but also are often endowed with various myths

and symbolic meanings. Navigation tools, such as sailboats, compasses, charts, etc., are important weapons for human beings to conquer the ocean and are also important symbols in marine culture. They have witnessed the development of human navigation technology, and also bear the courage and wisdom of navigators. Marine climate, such as storms, waves, tides, etc., is a typical feature of the marine environment and an important object of expression in marine culture. They affect human navigation activities and are often used to symbolize the changes of life.

These marine cultural image elements play an important role in cultural inheritance and expression. First of all, they are an important basis for marine cultural identity. By sharing these image elements, people can form a common cognition and sense of belonging to marine culture, thus enhancing the cohesion and centripetal force of culture. They are an important source of marine cultural innovation. These image elements have rich symbolic meaning and connotation, which can provide inspiration for cultural innovation. For example, many modern works of art focus on marine life or navigation tools, and show the charm of marine culture through innovative expressions. They are important carriers of marine culture communication. These image elements have distinct visual images and profound cultural connotations, which can be spread through various media and forms, thus expanding the influence of marine culture.

4. Analysis of the image elements of "Geng Lu Bu" marine culture based on metaphor extraction technology

Metaphor, as a rhetorical device, expresses richer and deeper meanings by mapping one conceptual domain onto another. In the "Geng Lu Bu," the use of metaphor makes the recording of nautical knowledge and experience more vivid and interesting, and also endows these records with profound symbolic significance. Therefore, through metaphor extraction techniques, it is possible to more accurately identify and extract elements of marine cultural imagery in the "Geng Lu Bu," and further analyze their characteristics and significance. When using metaphor extraction techniques to identify elements of marine cultural imagery in the "Geng Lu Bu," it is first necessary to construct a metaphor identification model. This model needs to be trained on a large corpus to learn to identify metaphorical expressions in the text. During the training process, machine learning algorithms such as support vector machines and neural networks can be used to automatically classify and annotate metaphorical expressions. Through training, the model can gradually learn to identify metaphorical expressions in the "Geng Lu Bu" and associate them with elements of marine cultural imagery.

After identifying metaphorical expressions, it is necessary to further extract the elements of marine cultural imagery within them. This process can be achieved through semantic analysis of the metaphorical expressions. Techniques such as word vector representation and semantic role labeling can be used to semantically analyze the vocabulary and phrases in the metaphorical expressions, thereby extracting the elements of marine cultural imagery. For example, in the metaphorical expression "the waves are as fierce as beasts," the imagery elements "waves" and "beasts" can be extracted, representing the power and danger of the ocean, respectively.

Through the extraction and analysis of metaphorical expressions in the "Geng Lu Bu," it can be found that it contains a wealth of elements of marine cultural imagery. These imagery elements include not only specific entities such as marine organisms and nautical tools, but also abstract concepts such as marine climate and marine mythology. These imagery elements intertwine and complement each other in the "Geng Lu Bu," collectively constituting a colorful world of marine culture. The analysis of elements of marine cultural imagery in the "Geng Lu Bu" based on metaphor extraction techniques provides a new research perspective. Through this analysis, researchers can gain a deeper understanding of the spiritual world and cultural pursuits of ancient navigators, and appreciate the unique charm of marine culture.

5. Inheritance and development of the ocean cultural imagery elements in the "Geng Lu Bu"

(1) Inheritance Mechanisms

Education and Training: The educational institutions should incorporate the "Geng Lu Bu" and its ocean cultural imagery elements into the educational system. By offering related courses, hosting

seminars and workshops, they can popularize ocean cultural knowledge among young people and the public, and cultivate their interest in ocean culture. At the same time, cultural heritage organizations should strengthen the protection and cultivation of inheritors, ensuring the continuation of these valuable cultural heritages through methods such as master-apprentice inheritance and skill training.

Digital Protection: The research team will utilize modern digital technology to conduct digital scanning, organization, and storage of the "Geng Lu Bu," establishing a comprehensive digital resource library. Through digital means, ocean cultural imagery elements can be more easily shared and disseminated, while also providing a rich foundation of materials for subsequent academic research.

Community Participation: The local government and cultural organizations should encourage social forces such as communities and fisherman families to participate in the inheritance of the ocean cultural imagery elements of the "Geng Lu Bu." By organizing cultural festivals, folk activities, and other events, they can allow more people to personally experience the charm of ocean culture and enhance cultural identity.

(2) Innovative Development

Cultural and Creative Industries: The design team should rely on the ocean cultural imagery elements in the "Geng Lu Bu" to develop cultural and creative products such as ocean-themed artwork, tourist souvenirs, films, and television works. Through the development of cultural and creative industries, not only can market supply be enriched and public consumer demand for ocean culture be satisfied, but the dissemination of ocean culture can also be further promoted.

Interdisciplinary Research: The academic institutions should encourage experts and scholars from various disciplines such as history, cultural studies, and navigation to jointly participate in research on the "Geng Lu Bu" and its ocean cultural imagery elements. Through interdisciplinary cooperation and exchange, the cultural connotations and values of the "Geng Lu Bu" can be more comprehensively and deeply explored, providing new ideas for the innovative development of ocean culture.

International Exchange: The organization should strengthen exchange and cooperation with the international ocean cultural field. By hosting international exhibitions, academic forums, etc., it can showcase the unique charm of the "Geng Lu Bu" and its ocean cultural imagery elements. At the same time, the organization should draw on international advanced experience and technical means to promote the innovative development of ocean culture.

(3) Cultural Dissemination

Media Promotion: The cultural promotion department should utilize media platforms such as television, radio, and the internet to increase the promotion of the "Geng Lu Bu" and its ocean cultural imagery elements. By producing special programs, documentaries, etc., they can vividly present the unique charm and profound heritage of ocean culture, raising public awareness of ocean culture.

Cultural Tourism: The local government and tourism development companies should develop tourism projects in conjunction with ocean cultural resources, such as constructing ocean cultural museums and theme parks. Through cultural tourism, they can allow tourists to personally experience the charm of ocean culture during their visits, enhancing their identification with ocean culture.

Public Education: The government and relevant cultural organizations should popularize ocean cultural knowledge among the public by hosting public benefit lectures, exhibitions, and other activities, raising public awareness of ocean environmental protection. At the same time, these entities should encourage public participation in the inheritance and protection of ocean culture, fostering a favorable atmosphere in which the entire society jointly attends to the development of ocean culture.

6. Conclusions

This article discusses the image elements of marine culture in "Geng Lu Bu", and reveals its rich cultural connotation and important role in cultural inheritance and expression. As a concrete

manifestation of marine culture, the image elements of marine culture not only bear the historical memory, but also serve as a bridge between the past and the future, which is of great significance for promoting the inheritance and development of marine culture.

In this article, metaphor extraction technology is proposed to identify the metaphorical expressions in "Geng Lu Bu", and then the image elements of marine culture are deeply explored. These image elements include concrete entities such as marine life and navigation tools, as well as abstract concepts such as marine climate and marine myth. Together, they constitute a colorful world of marine culture.

Further analysis of the characteristics and significance of these marine cultural image elements shows that they play an important role in cultural inheritance and expression. They are an important foundation of marine cultural identity, an important source of marine cultural innovation, and an important carrier of marine cultural communication. Therefore, we should pay enough attention to the image elements of marine culture in "Geng Lu Bu". Looking forward to the future, we should continue to dig deep into the image elements of marine culture in "Geng Lu Bu" to promote its inheritance. By constructing a perfect inheritance mechanism, promoting innovation and development, and strengthening cultural communication, these precious cultural heritages can glow more brilliantly in the new era.

Acknowledgements

Grant-in-Aid for Scientific Research Program from Hainan College of Software technology (No. Hrky202417) "Research on Marine cultural Imagery in Geng Lu Bu based on Tourism Gaze Theory"

References

- [1] Liu Yijie. Interpretation of Needle Positions in the Geng Lu Bu of the South China Sea [J]. Journal of Maritime History Studies, 2023(1):15-23.
- [2] Yan Genqi, Wu Hao. An Exploration of the Reasons for the Prosperity of the Geng Lu Bu of the South China Sea from the Late Qing Dynasty to the Republic of China Period [J]. Pacific Journal, 2022, 30(04):93-102.
- [3] Pang Wenyu. An Exploration of Needle Routes during the Song and Yuan Dynasties: Concurrently Discussing the Formation Time of the Geng Lu Bu of the South China Sea [J]. Journal of South China Sea Studies, 2022, 8(6):97-104.
- [4] Wei Yinwei, Li Leihan, Fan Wushan, et al. Visualization Analysis of Research on the Geng Lu Bu of the South China Sea [J]. Journal of Hainan Tropical Ocean University, 2023, 30(1):24-35.
- [5] Zhao Jueqi. Research on the Xisha Routes in Liang Qirui's Version of the Geng Lu Bu [J]. Agricultural Archaeology, 2022(6):252-257.
- [6] Duan Huifang, Li Shuzhi. Issues and Optimization Paths for the Archival Management of the Geng Lu Bu by Hainan Fishermen [J]. Cultural Journal, 2022(12):6-9.
- [7] Chen Hong, Li Wenhua. Issues of Missing or Incorrect Routes in the Geng Lu Bu from the Perspective of Version Comparison [J]. Journal of Hainan Tropical Ocean University, 2021, 028(003):P.29-34.
- [8] Zhao Jueqi. The Museum-Led Inheritance Model of the Geng Lu Bu and Its Implications [J]. Cultural Relics Appraisal and Appreciation, 2021, (008):133-135.