A Study on the Protection of Linguistic Diversity in the Process of Urbanization from the Perspective of Ecolinguistics

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Abstract: With the acceleration of urbanization and the new era of China's socio-economic development, it is necessary to propose language diversity protection propositions that better meet the people's needs for a better life, by focusing on adhering to the people-oriented concept of sustainable development. Based on the dynamic evolution from the perspective of ecolinguistics, a theoretical analysis framework for the protection of language diversity in the urbanization process is constructed according to the internal logic of the language ecosystem. This analysis framework can explain the balanced development mechanism of language ecology generated by the interaction mechanism and self-regulation cycle mechanism of urbanization and language ecology participation, and continue to explore the possibility of moving towards the goal of high-quality protection of language diversity from the perspective of the transformation and practical deduction of language ecology development. The balanced development of language ecology aims to provide language resources consistent with the standard of cultural expectations for citizens. It is dedicated to continuously enhancing language diversity and social language quality of life. To this end, measures such as strengthening language ecological control based on the internal circulation of language quality,constructing interaction and feedback mechanisms between language users and language quality perception, and establishing an evaluation system for language ecology and social development should be taken to achieve high-quality development of language ecology, promote urbanization process, and truly meet the cultural needs and identity recognition of the people.

1. Introduction

Protecting language diversity in processing urbanization is one of the main responsibilities of ecolinguistics research and a general term of global language policies. It can be divided into basic language protection and non-basic language protection, composed of national policies and local community practices. The government entrusts academic institutions to carry out empirical studies of protecting language diversity to adapt to the change of language environment brought by urbanization.Since the end of the 20th century, the protection of language diversity has become a key aspect of global sustainable development strategies, and language ecological balance has become a criterion for evaluation. Unlike traditional language protection policies, the ecolinguistics perspective emphasizes the participation of language users, the dynamic balance of language ecology, and the maintenance of cultural diversity. Therefore, this article proposes the issue of language diversity protection in the process of urbanization, with ecolinguistics providing a new theoretical perspective for this issue [1].

Ecolinguistics originates from ecology with biodiversity as its core, and its core concept contains the concept of language ecological balance, which is also a tool for protecting language diversity. From the perspective of language ecological structure, ecolinguistics pursues the health of the language ecosystem and achieves modernization of language ecological balance through the interaction between language users and the language environment on the theoretical level. To this day, ecolinguistics has embarked on a unique path of protecting linguistic diversity in the context of globalization. The comprehensive promotion of ecolinguistics not only redefines the strategy of language protection and reflects the diversity of human culture but also reshapes the urbanization

process, impacting the global language landscape profoundly. Therefore, discussing the protection of language diversity in the urbanization process must have a global perspective and interdisciplinary framework. Thus, a proposition from the perspective of ecolinguistics was proposed in the urbanization process. In short, ecolinguistics is the theoretical condition and guarantee for achieving the protection of language diversity. From a global perspective, ecolinguistics has made progress, but there are also shortcomings. The protection of language diversity has not yet fully identified an effective path in the urbanization process, and efforts are still being made to move forward. Therefore, the perspective of ecolinguistics needs to be further deepened, which is not only helpful for language protection but also crucial for maintaining human cultural diversity [2].

Based on the above background analysis, this article proposes a new path for the protection of language diversity in the process of urbanization from the perspective of ecolinguistics, aiming to build a language ecosystem that adapts to the challenges of urbanization. The problem of language diversity protection in processing urbanization is solved through ecolinguistics theory and empirical research methods. The main content is the language diversity protection strategy from the perspective of ecolinguistics, which effectively addresses the threat of globalization to language diversity and has important theoretical and practical significance.

2. The New Path of Language Diversity Protection in the Process of Urbanization

2.1. The Change of Language Diversity From the Perspective of Ecolinguistics

Ecolinguistics is a concept that has developed in parallel with biodiversity conservation. It is imbued with ecological concepts, highlighting the direction of ecological balance and reflecting global strategies for protecting linguistic diversity since the end of the 20th century. However, when we attempt to construct the definition and essence of ecolinguistics using certain linguistic ecological standards, it is still difficult to obtain a consistent understanding [3].

2.2. Urbanization, Ecolinguistics, and Language Diversity Protection

2.2.1. Needs Analysis of Language Users in the Context of Urbanization

Language users are an important criterion for language protection and a direct expression of language ecological balance. Scholars have discussed various definitions of language user needs from the perspectives of social identity, language ability, and language attitude. Because language users are more subjective and belong to the language conservation science centered on language users. some scholars believe that the satisfaction of language users reflects the language protection degree or serves as a language ecological balance indicator. The historical status of language users can even be traced back to early language policies, whose main activities include language planning and language education. The concepts and needs of language users are closely related to the formulation of language policies. Through the participation of language users, language protection has become an important responsibility of the government and society. The main contribution of ecolinguistics theory during the period of language policy formulation is to emphasize the dominant position of language users in language protection. Therefore, the concept of language users initially focused on measuring the balance of language ecology based on the standard attributes of language user needs [4].

2.2.2. Influence of Market Globalization on Language Protection Decisions

Compared with traditional language protection, the ecolinguistics perspective emphasizes the mutual relationship between language users and the linguistic environment, with the dynamic balance characteristic. Although some scholars question the existence of a direct relationship between language user needs and language ecological balance, most scholars advocate that language user needs can provide a rational evaluation of language ecological balance. Ecological linguists et al proposed a classic model of language ecological balance that includes three elements: language user needs, language environment, and language policy. Since then, this model has become a typical tool for protecting language diversity from the perspective of ecolinguistics, thus developing the concept

of language user participation. These scholars believe that language users have initiative and are "ecological participants". Only when language users fully participate can the balance of language ecology be maintained. Therefore, the participation of language users results from language ecological balance. Some scholars have summarized language user participation as a dual track model,which refers to a language protection model based on language user needs and a language protection model based on language environment. The former focuses on meeting the needs of language users, while the latter focuses on maintaining the language environment, which refers to the balance of language ecology. Although language user participation has experienced some practical failures, from the perspective of ecolinguistics, it can promote language ecological balance, and the concept of language user participation has gradually become a consensus in ecolinguistics research and practice [5].

3. Challenges of Language Diversity in Urbanization and Ecolinguistics

3.1. Chaos of Language Ecology: The Excessive Homogenization of Language Diversity in the Urbanization Process Leads to the Imbalance of the Language System

The concept of language ecology focuses on the issue of language diversity. Ecolinguistics is the application of ecological thinking in the field of linguistics. As a new alternative model, the ecological linguistic framework has entered the research field to overcome the shortcomings of traditional language protection policies. The basic concept of this framework is that language ecology should ensure the effective implementation of language diversity, set professional standards for language protection output, capture language usage through language monitoring and technical recording technologies, and use quantitative and qualitative research methods to measure language ecological health. The ecological linguistic framework reconstructs language conservation strategies, emphasizing the need to enhance the participation of language users and build resilience, adaptability, sustainability, and inclusiveness in language ecology.

3.2. Constraints of Language Protection: the Operational Dilemma of Language Protection Policy Under the Pressure of Urbanization

3.2.1. Single-Oriented Decision-Making Errors and Rigid Deviation of Management

Language protection is a major component of national policies, which emphasizes the balance of language ecology and directly reflects the interaction between language user needs and language environment through language planning. Some constituent elements of the development of language protection policies are gradually taking shape, with language monitoring systems and various evaluation systems receiving attention [6]. However, from the language ecology perspective, the practice of language protection policy is still at a superficial stage, which contradicts the logical framework and generation mechanism of ecolinguistics, leading to the issue of language diversity protection.

3.2.2. Language Marginalization and Cultural Heritage Risk

From the language users' perspective, language diversity is the fundamental link to cultural diversity and the core embodiment of ecolinguistics. Therefore, language protection is primarily generated based on the needs of language users. Language users are the essential participants in language protection and the main body of the language ecosystem. At present, language protection strengthens language resource control from the perspective of language users, with three main forms: The first is the digitization of language resources, which clarifies the effective dissemination of language resources between language users and the language environment. The second is the formulation of language standards, which achieve standardized control of language use by establishing language education standards, and language use standards, and publicly disclosing language quality standards to the public. The third is the internal process reengineering of language protection policies [7]. In recent years, digital technology, social media, and other innovative means have been used to improve the efficiency of language protection and enhance the health of the

language ecosystem. However, compared to the ideal state of ecolinguistics, the flexibility of current language protection policies still needs to be further improved. The risk of language marginalization and cultural inheritance is shown in Figure 1.
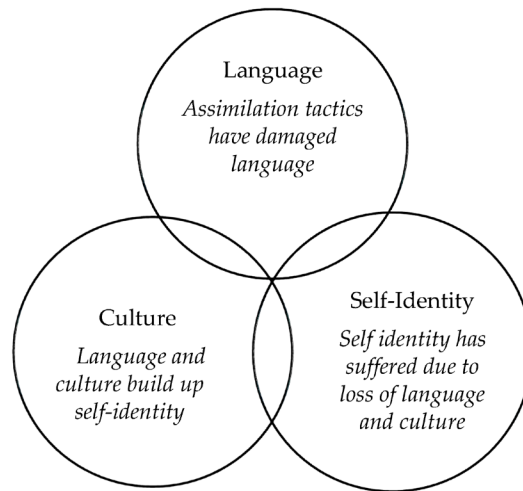

Figure 1 Language marginalization and cultural heritage risk

3.3. Risks of Language Protection Derived from Urbanization Control

The fundamental difference between urbanization and language conservation lies in their economic attributes. The economic benefits standards and market-oriented guidelines of urbanization are aimed at economic growth, and urban development mainly reflects economic benefits and market competitiveness. In the framework of urban language ecology, accurate language use, language education, language planning, and language protection are the core values and highest principles of urbanization development. The diversity of urbanization types and differences in language protection currently lead to a complex trend in the urbanization process [8]. Although urbanization has brought economic prosperity, language protection policies are still not perfect, and urbanization itself lacks mechanisms for protecting language diversity, resulting in the emergence of language protection shortcomings and affecting the healthy development of language ecology in the urbanization process.

4. Development Strategies of Language Diversity Protection Under Technical Challenges

4.1. Two-Way Interaction: Urbanization Language Protection Under the Guidance of Ecolinguistics Theory

4.1.1. Innovation and Upgrading of Language Technology to Achieve High-Quality Transfer of Language Resources

From the language ecology perspective, traditional language protection technologies cannot accurately provide the personalized services that language users need. The satisfaction evaluation of language protection by language users is the main form, but language protection lacks relevant information and feedback mechanisms for the personalized needs of language users. The core of this problem may be the participation of language users. In language protection, language users are often described as "guardians of the language ecosystem", and their participation in language protection directly reflects the health status of the language ecosystem [9]. However, language protection is mostly about preserving language resources and other information, with a lack of attention to the needs of language users. Usually, the personalized needs of language users are difficult to obtain or measure. Asymmetric information and imperfect participation of language users directly lead to barriers to language protection.

4.1.2. Language Protection Upgrade Under the Technology Assist

From the ecolinguistics perspective, technological bottlenecks have long constrained the efficiency of language protection. Since the 21st century, intelligent language technology integrating

artificial intelligence and big data has reshaped language protection models through language recognition and natural language processing. However, the drawbacks of traditional language protection policies still constrain the language protection effectiveness. Not only due to technological limitations but also due to the impact of policy implementation, language protection policies still need to be improved. Under the guidance of ecolinguistics theory, language conservation is seen as a direct way of balancing language ecology. However, the actual role of language protection, mainly based on traditional language protection policies, in balancing language ecology remains to be debated. Meanwhile, language protection policies lack real-time feedback due to difficulties in data collection. Therefore, language protection policies do not always achieve the expected goals. Language protection is a technical challenge, facing policy adjustment and optimization issues.

We should adopt a comprehensive strategy that focuses on both the needs of language users and the balance of language ecology when facing the challenges of protecting language diversity in processing urbanization. This strategy aims to guide the use of ecolinguistics theory, combined with technological innovation, to achieve effective protection and inheritance of language resources, and to construct a language ecosystem that adapts to the challenges of urbanization. Implementing this strategy not only requires the wisdom of policymakers but also the joint efforts of all sectors of society to safeguard the precious wealth of human language and culture.

4.2. Multi-Party Sharing: Optimization of Language Protection Response Mechanism and Social Governance

Undoubtedly, language diversity cannot avoid being a "weakness" in the balance of language ecology in processing urbanization. In the ecolinguistics mechanism, language protection policies are standard and effective social governance tools, playing an important role in the protection of language diversity, which also indicates that language protection is not only a technical but also a social concept.Therefore, language protection led by "ecolinguistics" has become a response mechanism in the process of urbanization. Although this path involves attempts at the interaction between technology and policy, the practical interpretation of language protection policies is generally a protective path gradually formed based on ecolinguistics theory. From the digitization of language resources to the formulation of language standards, language protection has always revolved closely around the needs of language users. Language conservation should strive for language ecological balance to meet the requirements of urbanization. However, the amplification of urbanization pressure brings a dilemma: the phenomenon of language marginalization. Overall, language protection policies still need to be improved in terms of language resource protection, language user participation, and the balance of their language ecology needs to be further improved, which is also an important task of language protection policies.

4.3. Ecological Restoration: Reconstructing the Ecological Balance of Language and Restoring Language Diversity

When building a language ecosystem balance, it is usually started with the relationship between language users and the language environment, as well as the relationship between language resources and the language environment. Language users can directly perceive language diversity from the language environment, while language resources require in-depth analysis of the existing language environment to obtain. This relationship can reveal deeper interactions between language users and language resources. The construction process includes building a single-layer language ecological network at the level of language users, a single-layer language ecological network at the level of language resources, a single-layer language ecological network at the level of language environment, and a multi-level language ecological network for the process of urbanization. After constructing a multi-level language ecological network, the correctness judgment and quality evaluation of the entities joining the network should be carried out to ensure the accuracy of the constructed language ecological network. Because a multi-level language ecosystem can store complex entity relationships of more entities, its network is structurally more complex compared to a single-level language ecosystem network. Therefore, multi-level language ecological networks can be validated using the natural language processing technique, which is a deep learning model that shares variables with

smaller parameter sizes and has higher application advantages compared to other models. In the application stage, this model can combine entities and relationships in the language ecosystem network to complete the representation from entity to relationship. In addition, the model can score entities under the influence of deep learning functions, select the entity with the highest score as the accurate language resource, and multiple link predictions can improve the accuracy of language resources, thereby verifying the high accuracy of the constructed language ecological network [10].

5. Conclusion

Ecolinguistics has been integrated into the process of urbanization, posing new challenges and requirements for language protection policies. Ecolinguistics is not only a symbol of the "protective" nature of language diversity but also an important tool for language protection policies. It is an important way to achieve language ecological balance and maintain language diversity, fundamentally reflecting the inherent requirements of language users. Ecolinguistics is at the forefront of urbanization, developing a theoretical analysis framework and practical mechanisms to achieve language ecological balance. In recent years, modern information technologies such as artificial intelligence and big data have driven innovation in language protection policies. Natural language processing technology has enhanced the accuracy and scientific nature of language protection policies and language ecological monitoring. Its value is in line with the inherent logic of ecolinguistics. Therefore, based on the theory of ecolinguistics, new avenues have also been opened up for language protection policies. In summary, sustainable improvements and developments in language protection policies contribute to better-addressing urbanization challenges, rebuilding language ecological balance, and protecting language diversity.

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