

Discuss the Protection Strategy of Chinese Dialect Heritage in the Age of Artificial Intelligence

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Abstract: With the prosperity and development of the world economy and the acceleration of the urbanization process, local dialects and cultures are facing unprecedented challenges. Fewer and fewer people use dialects, and some small dialects are facing serious problems of loss and cultural homogenization. As a carrier of regional culture, the protection and inheritance of dialects is not only a hot topic in academic research, but also an urgent need to promote social harmony and maintain cultural diversity. Today's artificial intelligence technology, with its powerful data processing capabilities, natural language understanding and generation capabilities, provides new perspectives and tools for dialect protection. This paper first reviews the historical background and challenges of Chinese dialect protection, and analyzes the limitations of traditional protection methods. Then, the paper analyzes the dialect speech material collection, corpus construction, speech synthesis system construction, virtual reality and augmented reality application, and discusses the potential application of network big data and artificial intelligence technology in dialect protection. Through the study of Hangzhou dialect speech synthesis, the author puts forward that we should pay more attention to the recording and synthesis of dialect speech, and finds a balance point in the dispute of whether we should protect dialects as heritage or continue to inherit them.

Keywords: Dialects; Databases; Speech Synthesis; Artificial Intelligence; Protection Strategies

1. Introduction

Dialect is not only a tool for people in a region or nation to communicate with each other, but

also an important carrier of local traditional culture and history. China has a vast territory, numerous ethnic groups, dialects are very complex, rich cultural heritage. However, since the reform and opening up in the last century, due to the continuous prosperity of the economy, the acceleration of the urbanization process and the improvement of traffic conditions, the inter-regional population flow has become increasingly frequent, which has promoted the rapid popularization of Mandarin, and the environmental ecology of dialects has undergone great changes. Most dialects are evolving into Mandarin, and dialects in some places are endangered and disappearing, which directly affects the diversity of Chinese culture. Now, the government has put forward the rural revitalization strategy, emphasizing the inheritance of rural culture and the self-confidence of national culture, and the protection and inheritance of dialect heritage has become an important task[1].

2. The History and Present Situation of Chinese Dialect Heritage Protection

Dialect has significant regional characteristics, and it has special phonetic system, oral expression habits, diction and grammatical structure. Its formation and evolution often mark the development history and cultural changes of a place.

2.1 The Formation and Evolution of Dialects until They Are on the Verge of Extinction

The formation of dialects is a complicated process, which is influenced by many factors, and is mainly related to the natural environment of human existence. In ancient times, due to the increasing population of clans and tribes, driven by natural resources, people would disperse and live farther and farther apart. Due to the natural landscape barrier and inconvenient transportation between different areas, residents in different areas have little

communication, and some are almost isolated. Over time, the original same voice will also develop in different directions, and gradually formed the phenomenon of "different days ten miles apart, and different sounds in a hundred miles", so that the formation of different dialects.

The migration and movement of people due to ancient wars and famines are also important reasons for the formation of different dialects. In Chinese history, there have been many large-scale population migrations due to war or natural disasters. The population migration from different regions gathered together, resulting in the mutual contact and influence of different dialects, so that the local dialect pronunciation slowly changed. For example, in the late Ming and early Qing dynasties, the war in Sichuan resulted in serious social and economic turmoil and a significant decrease in population. In order to recover and develop the economy, the Qing government implemented the immigration policy of "Huguang Buchuan", and moved a large number of people from the dense Hubei and Hunan provinces into Sichuan. These immigrants from different places brought their own dialects and intermingled with the local dialects of Sichuan, which inevitably resulted in the mutual borrowing of words, the differentiation, merging and disappearance of phonemes, and the change of phonological characteristics (such as pronunciation position, tone, rhythm), so that diversified dialect systems were formed in various places. For example, as the southwest mandarin Chengdu, Luzhou and Yibin area of Sichuan dialect, Dazhou and Guang'an area of Sichuan northeast dialect, Ya'an area of Sichuan dialect and so on[2].

Looking back at the history, dialect pronunciation in various places will be affected by population migration, cultural exchange, social change and other factors, resulting in the continuous evolution and assimilation of some unique dialect pronunciation. In recent years, with the development of economy, the cross-regional flow of population, the rapid development of Internet and media, Mandarin has been widely used as a common language, resulting in the gradual decline of dialect use among the younger generation. At present, only some relatively remote rural mountainous areas may still retain the original features of local dialects,

but they are constantly decaying and degrading under the influence of various factors.

In modern times, dialects are generally used only in villages, communities and families. However, many people have left their hometown to work and live in different places, and there are fewer and fewer opportunities to communicate in their native language. Even some families are made up of parents from different dialect areas, and it is not convenient to communicate in the same dialect. This will inevitably lead to the absence of dialect use environment, many young people usually can only speak Mandarin, gradually reduce the sense of identification with dialects, and are not willing to learn and use dialects. These conditions make the survival of dialects worrying, dialect inheritance is facing a great challenge, many small dialects are shrinking and dying out.

2.2 The Cultural Value of Dialects and the Importance of Their Preservation

Dialect, as a regional language variant, contains unique local culture in its phonetic features, pronunciation patterns and discourse structure, and carries rich historical information and national memory of a place. Protecting dialects is of vital significance for inheriting and developing local culture.

First of all, most of the local folk songs, operas, folk arts, poems, nursery rhymes, etc. are created based on dialects, and most of the local literary and artistic forms are based on dialect pronunciation, some of which can only be passed down from generation to generation through oral inheritance, presenting and expressing the national wisdom and cultural heritage of the people in the dialect area, giving the local culture a unique charm. At present, due to the rapid decline in the number of people who use dialects to communicate, the oral art forms based on dialects are also gradually declining, and many linguistic intangible cultural heritages are facing the loss, which brings great challenges to the diversity of Chinese culture. Only through the protection and inheritance of dialects, can the rich local culture be continued and developed, and the national cultural self-confidence be enhanced.

Secondly, dialect pronunciation is also the common spiritual wealth of various regions and nationalities. Through dialect

pronunciation, people can identify the identity of different regions and nationalities, and generate a kind of family affection and care for their hometown, so as to enhance people's sense of national identity and local cohesion. If dialects die out, it will not only mean the loss of linguistic and cultural diversity, but also have a negative impact on national cultural self-confidence in different regions. Dialect is also an important part of human language civilization, which is of great significance to the study of linguistics, anthropology and other scientific fields.

The rural revitalization strategy is an important guiding ideology for rural development put forward by the Chinese government, which emphasizes the comprehensive implementation of ecological civilization, industrial development and cultural prosperity in rural areas. In this context, integrating dialect cultural heritage into the vision of rural revitalization, strengthening rescue and protection, and developing and utilizing dialect resources can greatly promote the development of rural culture and tourism, and will play a great role in promoting the sustainable development of local economy[3]. It can be seen that the ecological status of dialect speech is a topic worthy of extensive attention. Combining rural revitalization with dialect cultural heritage protection to leave rich language and cultural resources for future generations is of great practical significance to the overall economic and social development.

3. The Protection Method and Present Situation of Dialect Phonetic Heritage

The role of dialects in local cultural inheritance has been recognized since the 1950s, when China conducted a nationwide census of dialects and ethnic minority languages. In the decades that followed, governments at all levels, cultural and educational systems, academia and some dialect lovers all took a series of measures to protect and inherit Chinese dialects[4].

3.1 To Collect and Record Dialect Corpus

Since the 1980s, China has started the construction of text corpus. In the process of construction, a large number of written or spoken language samples are collected through a comprehensive survey of dialect corpus. Then the collected characters, words, phrases

and discourse are manually marked, including semantic, phonetic, part of speech, syntax, style and text structure information, and finally recorded and sorted out in text form. These corpora have been widely used in dialect lexicography, language teaching and related theoretical research.

Since 2001, the Research Center for Ethnic Minority Languages under the Chinese Academy of Social Sciences has carried out an activity of "Investigation and Research on Endangered Ethnic Minority Languages in China", in which they have investigated and archived the spoken and written languages of ethnic minorities. As a result of technological advances, modern sound and video recordings were used in addition to text records to preserve dying dialects, and a sound dialect resource emerged.

Since October 2008, the National Language Commission of China has officially launched the pilot project of "Audio Database of Chinese Language Resources". The purpose of this project is to use modern information technology, according to a unified standard, record the dialect speech of each county in the country, and archive and build a database. At present, a number of dialects have been completed the audio database construction pilot work. In 2010, China officially compiled the Survey Manual of Chinese Language Resources Audio Database, and formulated corresponding survey norms and some data tables.

In May 2015, the Ministry of Education and the Language Commission jointly launched the project to protect China's language resources, and officially established the project to investigate the pronunciation of 329 Chinese dialects in 28 provinces (autonomous regions and municipalities directly under the Central Government), including 14 endangered Chinese dialects[5].

Although a large number of dialect surveys and language resource collection have laid the foundation for the conservation research of Chinese dialects, there are still some problems. For example, these traditional dialect survey methods are conducted by selecting several different types of speakers in the local area and reading the specified words, words, sentences, and utterances. These surveys only cover a small number of dialects, contain a small amount of vocabulary, and lack sufficient

original situational information, which has the disadvantage of incomplete records.

3.2 Construction of Dialect Resource Database

Dialect corpus collection and database construction are important means to protect dialects. At present, from the perspective of the construction of dialect resource database, there have been more than 50 different forms of dialect resource database in China, including seven major dialect areas in our country. They can be divided into corpus recorded in plain text and audio database recorded in speech. The corpus of text is mainly used to record, annotate, annotate and transcribe the collected dialect corpus in writing, and then to classify and store it in electronic documents. In the early period, there were many databases of this kind. However, in recent years, due to the progress of technical means, the construction of audio database is more, in addition to the text content, it also needs to carry out a lot of speech segmentation, text transfer, audio processing and other work, increasing the voice data[6].

China has made some achievements in the construction of dialect resource database. For example, the "Audio Database of Chinese Language Resources" of the State Language Commission of China has been completed in some economically better provinces, including Chinese dialects and ethnic minority languages. The "Multimedia Database of Chinese Dialect Culture Collections" of the China Language Resources Protection Research Center, which contains the content of colloquial proverbs, folklore and art, in order to protect and inherit the language and culture of various ethnic groups; The Institute of Linguistics of the Chinese Academy of Social Sciences and other institutions have jointly created the "Chinese Speech Recognition Database", the Chinese Academy of Social Sciences has also developed the "Northern dialect basic vocabulary database", as well as individual ethnic minority dialect speech corpus, representative of the "Mongolian corpus" and so on. There are also some databases dedicated to dialect speech synthesis, such as the "The Amdo language of Xizang Speech Synthesis Corpus"[7].

In recent years, the Chinese government has set up a number of funds to support dialect

scholars and linguistics research institutions to study and protect dialects. A large number of language scholars have actively participated in the investigation and research of dialect sounds, and many universities and research institutions have also carried out a lot of dialect investigation and research and corpus database construction projects. Through the in-depth exploration of the characteristics and evolution of dialects, a lot of materials have been collected and many books have been published to provide scientific basis for the protection of dialects.

3.3 Promote Dialect Inheritance through Policy Publicity and School Education

In the process of economic globalization, China has seen that some dialects with important historical value are facing the risk of being lost. Some local departments have begun to invest human and material resources to solve the problem of protection and inheritance of certain oral heritage resources that are endangered or have limited use, and have introduced relevant policies and measures. In places where ethnic minorities gather in large numbers, the government has also encouraged them to adhere to the writing system in dialects and original scripts, and included them in the national intangible cultural heritage list[8].

Many places have launched a small number of dialect programs through local radio and television stations to increase people's interest in speaking dialects, but it is difficult to continue due to the impact of the economic environment. Some local primary and secondary schools try to choose one or two cultural literacy courses in the teaching of dialects, and teach and learn dialects through school-based courses and other forms to create a good local oral atmosphere. In some places, dialect education and training have been spontaneously organized, and some we-media bloggers have also made live dialect broadcasts to arouse young people's interest in and recognition of dialects.

With the construction of new villages and the rise of rural tourism, the value of some oral cultural heritage has also attracted the attention of local cultural tourism departments, and many villages and communities have begun to organize related cultural and artistic activities to promote economic development. In some

places, dialects with obvious characteristics and historical background, limited scope of use or inheritance of endangered dialects or specific oral expressions of culture are also specially displayed in some places such as intangible cultural heritage museums, so that more people can contact and understand this language intangible cultural heritage.

On the whole, although a series of conservation measures have been taken, there is still a trend of the gradual disappearance of some precious dialect heritage. Are there any gaps in our conservation efforts? Are there still technical measures that are insufficient to effectively protect endangered language resources? In today's wide application of big data and artificial intelligence technology, do we have other more effective methods? It is worth further discussion.

4. Application of Digital Technology in Dialect Protection

Traditional dialect survey methods often rely on manual recording, which is time-consuming and easy to make mistakes. The modern big data technology can easily collect a large amount of dialect speech data, and automatically classify, sort and analyze dialect data through computers, which provides a strong support for data storage and dialect protection.

4.1 The Network Big Data Technology is Used to Collect Dialect Speech

The data collection of dialect speech is a crucial part in the process of protecting dialect heritage. Early survey methods were affected by many factors (such as technical conditions, funds, time constraints, etc.), dialect collection can only find individual representative speakers in a designated time and place, limited data collection, it is difficult to comprehensively collect a dialect speech data. Therefore, the early establishment of the database generally has a small amount of data, there are many limitations.

At present, people can use the Internet to extensively and deeply collect local dialect resources among ordinary people, and record the daily oral English and dialogue of ordinary people in dialect areas through online interviews and big data collection, so as to capture the most simple voice samples, and make up for the limitations of dialect speech

collection that has long been confined to individual speakers and written surveys. Secondly, the use of network data acquisition technology for dialect speech acquisition is an innovation. At present, there are a number of computer network acquisition software terminals, dialect acquisition apps installed on mobile phones and WeChat mini programs.

With the help of mobile phone apps and some small programs, the collection system can allow more dialect lovers to participate, which can be free from the constraints of specified text data, not for special pronunciation individuals, and remote collection in various life scenes. It can record the whole picture of the dialect of a place, can make a comprehensive record of the dialect of a certain period and a certain region, and can collect almost all the speech and corpus data of a dialect. It can continuously supplement and expand the previous database, which will inevitably promote the in-depth study and application of dialects.

4.2 Digital Storage and Processing of Dialect Data

In the process of dialect protection, one of the important steps is the storage and processing of massive dialect corpus and speech data. It requires detailed data classification (such as dialect categories, geographical information, time clues, speaker characteristics, etc.) and the establishment of efficient database architecture to support fast and accurate retrieval.

First, researchers can use computers for speech data analysis, annotation and recognition, including the annotation of phonemes, words and sentences, and the use of existing speech recognition technology to convert spoken expressions into digital signals that can be processed by computers, which can ensure the accuracy of data resources, and provide accurate text correspondence and phonetic transcription for dialect speech. This link can also combine deep learning automatic speech recognition with natural language processing technology for speech translation and semantic understanding, so as to facilitate further research, analysis and construction of a specialized corpus. At present, some open source tools and software are available, such as Kaldi, DeepSpeech, etc., which have also been widely used and assisted optimization in

dialect speech recognition[9].

Secondly, with the help of cloud computing and big data technology, we can easily build a distributed storage system to store voice data separately to reduce a single risk, and implement strict rights management and data backup, so as to protect personal privacy and copyright rights. Data integrity and availability can be checked regularly to ensure its continued role in academic research and community heritage.

With the help of these digital techniques, we can set up a dynamically updated, shareable and easy to expand dialect speech database, constantly improve the accuracy and quality of the collected data, and provide strong support for its long-term preservation and utilization. At present, dialect database has been widely used in the fields of obtaining dialect information, compiling dictionaries, assisting machine translation, teaching reference and compiling teaching materials. Its data retrieval and voice recognition functions can also help the public security and other functional departments to accurately locate the speaker's regional information. In addition, these digital materials can also promote the in-depth development of related subject areas (such as dialectology, folklore, history).

4.3 Dialect Speech Synthesis Based on Database

In recent years, the importance of dialect speech synthesis has attracted wide attention, especially in the fields of artificial intelligence, dialect translation, and intangible cultural heritage protection. Looking at the research on dialect speech synthesis system, which is very limited at present, most of them are still developed on the basis of Mandarin speech synthesis system. Because of the unique vocabulary and pronunciation characteristics of dialects, such as some dialects in Zhejiang, it is difficult to fully reproduce the unique features of dialects. There are some problems in the lexical richness, intelligibility and naturalness of the synthesized dialect pronunciation.

However, the synthesis technology of audio waveform splicing based on speech database has attracted the attention of researchers in dialect synthesis. The naturalness of dialect speech synthesis can be improved significantly through the method of audio waveform

splicing in dialect speech database, so that it is closer to human natural speech, and the computer and related systems can produce fluent dialect speech similar to human. This dialect speech synthesis technology is inseparable from a huge dialect speech database, and there are still great deficiencies in this aspect. In the future, the construction of a standardized dialect speech comprehensive database can support application search and realize online sharing, which is not only conducive to the application of speech synthesis technology, but also can promote the scientific research in the field of language[10]. With the rapid progress of artificial intelligence technology, the speech synthesis technology driven by neural network is becoming more and more mature. It can use computer deep learning technology to accurately simulate the human speech generation process, significantly improve the naturalness and coherence of speech synthesis, and show excellent performance in applications such as voice assistants and voice navigation. However, despite this, neural network models still face challenges in processing speech synthesis in specific dialects. Because the uniqueness of dialects is not only reflected in the pronunciation, but also in its unique vocabulary and expression, it is undoubtedly a difficult test for the accurate adaptation of AI models.

At present, some linguistic experts and scholars, some Internet enterprises and speech synthesis technicians have realized the significance of dialect speech synthesis and began to invest a lot in related research. Although it still needs technical breakthroughs, dialect speech synthesis has begun to play a role in artificial intelligence, dialect translation and other fields, and provides dialect services for local culture and tourism industries.

5. A Discussion on the Protection Strategy of Dialect Phonetic Heritage

Many scholars hold different views on the protection of dialect phonetic heritage, focusing on whether to promote the use and inheritance of dialects in today's economic globalization, or to record and preserve dialects, or how to find a balance point.

Some people suggest that the government should encourage the use of dialects in public places, schools should arrange for dialect

teaching, communities should advocate the use of dialects in specific environments, and the media should publicize and promote the use of dialects, so as to promote the inheritance of dialects[11]. However, in today's development of human society, practical experience has proved that those practices of letting people return to the use of dialects are unrealistic. If it is necessary for people to understand the local culture by using dialects, it is understandable, but it is not necessary to advocate everyone to speak dialects, because after all, dialects will bring inconvenience to people's communication. "Just like antiques are treasures, people must keep them well and protect them well, but they do not need to use antiques in daily work and life."

The author believes that the best way to protect dialect heritage is to combine traditional dialect investigation methods with digital recording technology, and make use of big data technology in the Internet era to record, label and sort out dialect speech and corpus in detail, and build a standardized dialect resource database. Then, by using modern artificial intelligence and speech synthesis technology, dialect speech can be synthesized and reproduced by computer anytime and anywhere, and even human-computer dialect interaction can be achieved, so as to achieve the purpose of retrieval, restoration, learning and research. This requires us to do the following constructive work.

5.1 Establish an Open and Shared Dialect Speech Data Platform

At present, there are some problems in the construction of Chinese dialect database, such as scattered and isolated, lack of spoken English, insufficient audio data resources, and lack of standardization. There is no database that can comprehensively record the speech of a certain dialect. To this end, people need to start from the following two aspects:

5.1.1 Big data technology is used to collect dialect speech and build database

First of all, we need to study the existing survey methods and database structures, determine the information needs and plan the voice data processing methods. Then the standard dialect speech data collection client is developed, which can be uploaded by anyone with mobile phone or personal computer as a

sample through the Internet platform. Thus breaking the regional restrictions, let our dialect collection really go to the "field" to directly collect the local dialect. We strive to collect Chinese dialect phonetic resources from various channels and sources to solve the limitation of traditional dialect investigation. Encourage extensive participation of people in dialect areas to achieve sustainable data supplement and expansion.

When constructing dialect speech database, the primary concern is user friendliness and functionality. The core design of the database should contain massive dialect speech data, support uploading, downloading, sharing and retrieval functions, so that all kinds of people can easily obtain and use. Then it is necessary to use cloud storage technology to achieve efficient storage and management of voice data and facilitate sharing. At the same time, the establishment of the data platform needs to be supported by government departments and formulate corresponding policies and regulations to ensure the legitimacy and sustainability of digital work[12].

5.1.2 The dialect speech database based on speech synthesis is constructed

In theory, it is relatively simple to use the method of direct splicing of natural speech waveform to synthesize dialect, but a series of problems need to be studied and overcome in order to synthesize natural and fluent high-quality dialect speech. It includes fine text segmentation processing and accurate annotation problems, and how to enable the computer to automatically find and find the required speech units, how to improve the quality and naturalness of synthetic speech, and so on[13].

In short, the future construction of dialect speech database needs to learn from the experience and lessons of the existing speech database, combine the data acquisition system, optimize the design, and consider the planning and establishment of several sub-databases including dialect characters, words, sentences, discourse databases and oral culture.

5.2 Further Research on Dialect Speech Synthesis Technology and Application of Artificial Intelligence

Based on the construction of dialect speech database, the dialect speech synthesis technology based on database is developed, so

as to vividly reproduce dialects and realize long-term preservation of dialect heritage, which has significant advantages compared with other means.

First of all, using speech synthesis and reproduction to protect dialects, compared with calling on people to use dialects, will not conflict with the government's policy of promoting Putonghua, and will not cause inconvenience to people's communication. Compared with traditional preservation methods, this method is particularly flexible, and users can experience authentic dialect pronunciation whenever and wherever they are.

Secondly, the use of cutting-edge technologies such as artificial intelligence and virtual reality combined with dialect speech synthesis can create an immersive learning environment for users. Through human-computer interactive voice communication, the virtual reproduction of realistic scenes can greatly enhance the interest and interaction of dialect inheritance, so that people can understand and learn dialects more easily, and thus feel the charm of dialect culture more deeply. It makes the transmission of dialect sounds more flexible and convenient, and can be regarded as the most effective strategy to protect dialect heritage.

The use of artificial intelligence and neural network technology can also promote the continuous improvement and optimization of speech synthesis technology, further improve the quality of synthetic speech, so that dialect speech can be more real and natural reproduction. Through AI speech recognition, we can automatically process a large number of dialect speech data, achieve efficient sorting and classification, thus greatly reducing labor costs. Through the in-depth mining and analysis of speech data by AI technology, people can have a more comprehensive understanding of the characteristics and evolution laws of dialects, and provide a more scientific basis for the protection and inheritance of dialects[14].

Taking the synthesis of Hangzhou dialect as an example, the author has successfully built a dialect voice digital collection system through cooperation with a technology company, and developed a mobile phone application, so that dialect lovers can upload and share recorded dialect corpus anytime and anywhere to

achieve interactive communication and learning. Using speech synthesis technology and artificial intelligence model, a Hangzhou dialect generation system is developed to realize smooth and realistic text-to-dialect speech.

Looking forward to the future, with the extensive application of artificial intelligence (AI) technology in the field of dialect phonetic heritage protection and research, it will not only help improve the efficiency of dialect protection work, but also promote the innovative dissemination of dialect culture and further promote the cultural revitalization of rural areas.

5.3 Seek Policy Support and Community Involvement to Promote Dialect Transmission

Dialect protection needs to form a cooperative mechanism between the government and the society. The government should incorporate the protection of dialect phonetic heritage into local cultural development strategies, formulate corresponding protection policies and regulations, fully mobilize social resources, and invest necessary human, financial and force support for dialect protection. Relying on the community's deep understanding of the local language and cultural feelings, they become the main force in the protection work, and continue to organize related activities and education training to improve the awareness of participation and inheritance of residents.

It is also necessary to encourage local education departments to integrate dialect elements into school curricula, allow primary and secondary schools to use dialects for part of their curriculum teaching, carry out targeted extra-curricular cultural activities, and encourage children to communicate with their local dialects, so as to improve the next generation's identification with local dialect culture. Some universities are encouraged to strengthen the construction of dialect disciplines and train more professionals in dialect. Various media and online platforms have been used to publicize dialect culture. Local radio and television stations have organized a variety of dialect programs, produced more dialect movies and TV series like "Flowers", and held dialect speech contests or cultural knowledge competitions[15].

In addition, people are encouraged to use dialects in some areas of life and in appropriate environments, so as to change the concept that some people regard dialects as "soil" or "rustic". Establish a dialect museum or set up a dialect experience area in the intangible heritage museum, and use AI and virtual reality technology to let citizens and tourists immerse themselves in the charm of dialects, generate strong interest in local dialects, and form a joint force of the whole society to realize the real protection and inheritance of cultural heritage[16].

6. Epilogue

Under the open economic environment, the language habits of the young generation are changing, and the inheritance of dialects is in crisis, and the traditional protection and inheritance methods have become inadequate. The innovative application of artificial intelligence technology in dialect protection proposed in this paper seeks a balance point between dialect inheritance and dialect protection by using dialect speech synthesis technology, aiming to provide theoretical guidance and practical enlightenment for researchers and practitioners in this field, and jointly promote the sustainable development of local languages and cultures.

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