Visualization Analysis of Huayu Research Based on CiteSpace*

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Huayu research has gone through 30 years. It has achieved fruitful results, with the scope of research greatly expanding, the research horizon having experienced a process of change from early Mandarin to overseas Chinese to global Chinese. The depth and breadth of research has been expanded, and in recent years it has become a hot spot in linguistics research. In this paper, sorted out the Huayu research literature in CNKI from 2010 to 2022 and visually analyzed it through CiteSpace, and the results showed that the concepts of “global Chinese language” and “global Chinese history” have gained new connotations in discourse research; there are few institutions engaged in Huayu research and there is a lack of cooperation on a certain scale; the research results focus on microscopic ontology research, macroscopic language use and planning, and language learning and teaching; synchronic research results are rich, and the diachronic research needs to be further expanded.

*Acknowledgements:* The research for this paper was financially supported by the Interdisciplinary Fund for Doctoral-students in Beijing Normal University (BNUZXKJC-10).

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I. Data Sources and Research Methods

1.1 Data Sources
The main research data of this paper is from the CNKI journal database, in which the theme is “Mandarin” and the search time span is 2010-2022, excluding invalid samples such as conference notices, publications and conference information, and screening a total of 500 valid literature.

1.2 Research Method
CiteSpace is a software package for visual analysis of emerging trends in the Java environment (Chen, 2014). This paper takes CiteSpace (6.1.R2 version) as a research tool, takes the 500 documents detected by CNKI as data information, converts them into Refworks format recognizable by CiteSpace, and visually analyzes the Chinese-related literature published by CNKI from six aspects: annual publication volume, main publishing institutions, main publishing authors, highly cited literature, keyword co-occurrence, and keyword prominence.

2. Results of the Visualization Analysis

2.1 Annual Publication Volume
To a certain extent, the chronological distribution of literature can reflect the level of academic research and the speed of development in a certain field (Cai & Zheng, 2017). Through the measurement visual analysis function included in the CNKI interface of the campus library, we have counted the number of articles published in Chinese language research for more than ten years, as shown in the following figure:

![Trend chart of annual publication distribution of Huayu research.](image)

As can be seen from Figure 1, the publication volume of Huayu research has been steadily improving, and the overall trend has shown a wave-like upward trend with three development peaks in 12 consecutive years—2012, 2017 and 2021, which show three obvious upward periods of 2010-2012, 2014-2017, and 2019-2021 on the line chart as an important time point.

These remarkable time nodes are the real reflection and symbol of the development of Huayu theory and discipline construction. Guo Xi and Cui Le (2011) pointed out that the author’s understanding of global Chinese has gone through three stages: the first stage (in 2004), it was “the common Chinese language with Mandarin as the standard” in On “Mandarin”; the second stage (in 2006), it was “the common language of The Chinese with Mandarin as the core” discussed in the paper On Chinese Studies; the third stage, it was “Mandarin-based Chinese Common Language”. Diao Yanbin (2012a) first proposed the concept of “global Chinese linguistics”, and Diao Yanbin (2012b) extended the comparative study of modern Chinese across the Taiwan Straits and four
places to the perspective and scope of global Chinese. Diao Yanbin (2015, pp. 227-244) redefined Huayu as “the common Chinese language based on traditional Chinese and with Mandarin as the core”. Zhou Qinghai (2016, pp. 13-19) believes that “from the perspective of Huayu moving towards the world, the application and standardization of Huayu cannot and should not be considered only from the perspective of China’s needs or perspectives”. In 2017, the Global Chinese Dictionary was launched, which is a large-scale language dictionary that reflects the contemporary Huayu vocabulary in the world’s major Chinese-speaking areas, with similarities and differences, language words and cultural words, which not only show the true face of Huayu. Diao Yanbin (2018) once again realized the transformation of concepts and the improvement of levels, incorporating relevant research into the empirical research and theoretical construction of the global Chinese language.

2.2 Main Publishing Institutions and Authors

The analysis of the main publishing institutions and authors can find the distribution of important research positions and core authors in this field, which can provide reference for future Chinese language research. Here the publisher threshold is set at 2 and the primary author threshold is 1. Among them, the larger the node, the more posts the institution or author. We have counted the main institutions and authors of Huayu research literature and mapped them into a knowledge graph through CiteSpace as follows:

![Figure 2. Distribution of major publishing institutions.](image)
The amount of writing issued by the publishing institution is often positively correlated with the research ability of the institution in the relevant fields, and the larger the amount of it, the greater the influence of the institution in the corresponding fields (Shen, 2019). As can be seen from Figure 2, the College of Chinese Language and Literature in Beijing Normal University has the largest number of articles, followed by the School of Huayu in Jinan University and the Overseas Huayu Research Center in Jinan University, indicating that Beijing Normal University and Jinan University have greater influence in the field of Huayu research. In addition, there are Malaysian Branch Huayu Department in Xiamen University, Beijing Language and Culture University, College of International Education in Minzu University of China, School of International Culture in South China Normal University and so on. It can be seen that universities in Beijing, Guangzhou and Xiamen have made considerable research achievements in the field of Huayu research, which has led the research direction in this field to a certain extent.

As can be seen from Figure 3, the top ten authors are Diao Yanbin, Guo Xi, Wang Xiaomei, Li Jiwei, Zhou Qinghai, Liu Hua, Zhao Min, Su Xinchun, Tian Jing, and Lu Deping. There are two groups with obvious cooperative relations in Huayau studies: one group includes Guo Xi, Li Jiwei, Liu Hua, Liu Hui, Zhao Min, etc., and the other group includes Wu Yinghui, Ye Tingting, Huang Lishi, Zhuo Youyou, etc.

### 2.3 Highly Cited Literature

The number of citations is an important indicator to measure the level of an academic paper (Du, 2009), and highly cited papers are generally important ones with foundational or cutting-edge nature (Chen, Chen, Hu, & Wang, et al., 2014). We have compiled statistics on the top ten literatures on Huayu studies, as shown in the following table:

<table>
<thead>
<tr>
<th>Number</th>
<th>Title/Provenance</th>
<th>Author</th>
<th>Journal/Publisher</th>
<th>Posting/Publication time</th>
<th>Frequency of citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Greater Chinese: Lingua Franca</td>
<td>Li Yuming</td>
<td>Applied Linguistics</td>
<td>2017</td>
<td>26</td>
</tr>
</tbody>
</table>
Through the analysis of these 10 highly cited literature, it can be found as follows:

First, from the perspective of posting/publication time, these 10 highly cited literature were mostly published in 2017, 2019 or earlier in 2004 and 2006. As previously mentioned, the treatises in the stages of 2017 and 2019 played a groundbreaking role. The background of theoretical development of the highly cited literature in 2004 and 2006 was the publication of two books—*History of Modern Chinese* and *Introduction to the History of Modern Chinese*.

Second, from the perspective of journal names/publishing houses, two of the 10 highly cited literature were published in *Applied Linguistics*, and one was published in *Linguistics Research, Huayu Education and Research* (formerly named *Journal of Huayu College of Jinan University*), *Journal of Shandong Normal University (Social Science Edition)*, *Journal of Yunnan University (Social Science Edition)*, *Journal of Southwest University (Social Science Edition)*, and three were published in *the Commercial Press*. The journals published in the seven literature are all core journals or CSSCI, which is the main front of the academic frontier of language; the Commercial Press is the oldest publishing institution in China’s publishing industry.

Third, from the perspective of research contents, among the 10 highly cited literature, six are about macro theories such as “global Chinese”, “Greater Chinese” and language concepts, two are on Malaysian and Indonesian Chinese, and two reference books covering Chinese vocabulary. This shows that the study of Chinese theory is becoming more and more perfect, vocabulary is the most active part of Chinese language research, and the Chinese community is mostly involved in Southeast Asia.

Among the 10 highly cited literature, the most cited ones are *Greater Huayu: The Common Language of Chinese Around the World* and *Global Chinese Dictionary*. “greater Huayu” has a number of Chinese variants, and the most important are the mainland Mandarin, Taiwan’s Chinese, Hong Kong and Macao Chinese, Singapore, Malaysia, Indonesia Brunei Chinese, etc. North American Mandarin is taking shape, and European

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Author(s)</th>
<th>Publisher/Branch</th>
<th>Year</th>
<th>Cited</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Global Chinese Dictionary</td>
<td>Li Yuming and so on</td>
<td>The Commercial Press</td>
<td>2010</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>Greater Global Chinese Dictionary</td>
<td>Li Yuming and so on</td>
<td>The Commercial Press</td>
<td>2017</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>On the Research of Huayu</td>
<td>Guo Xi</td>
<td>Applied Linguistics</td>
<td>2006</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>On Huayu</td>
<td>Guo Xi</td>
<td>TCSOL Studies</td>
<td>2004</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>A Study on the Variation of Function in Indonesian Written Language</td>
<td>Guo Hong</td>
<td>Shandong Normal University Master’s thesis</td>
<td>2021</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>A Study on the Category of Degree that Base on Malaysian Chinese Literature</td>
<td>Wang Shiyun</td>
<td>Southwest University Master’s thesis</td>
<td>2019</td>
<td>11</td>
</tr>
<tr>
<td>9</td>
<td>Theoretical and Applied Huayu Research in the Recent Decade</td>
<td>Zhu Xiaohong</td>
<td>Linguistic Research</td>
<td>2017</td>
<td>11</td>
</tr>
</tbody>
</table>
Chinese is slightly rudimentary. The characteristics of greater Huayu are related to the history of the implementation of the common language of the Chinese people, which is the result of the interaction between the “old Chinese circle” and the “Mandarin circle”, and the various Chinese variants are related to both the promotion of Chinese/Mandarin and the language environment in which they live. The Greater Global Chinese Dictionary is an upgraded version of the Global Chinese Dictionary, which is a large-scale language dictionary reflecting the contemporary Chinese vocabulary of the world’s major Chinese-speaking areas, mainly including Chinese words used by Chinese-language people around the world.

3. Research Hotspots

3.1 Keyword Co-occurrence Analysis

Keywords highly summarize the research themes and main points of the paper, therefore through keywords we can grasp the research contents, research directions and research hotspots in a certain field (Cai & Zheng, 2017). The larger is the node, the higher is the frequency of occurrence of the keyword, which reflects the popularity of the keyword research to a certain extent. The details are as follows:

![Knowledge network of Huayu research keyword co-occurrence.](image)

In order to make up for the shortcoming of Figure 4, we present the relevant data of the top 20 digits in the following tabular form.

Table 2

<table>
<thead>
<tr>
<th>Number</th>
<th>Keywords</th>
<th>Frequency</th>
<th>The year in which it first appeared</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Huayu</td>
<td>43</td>
<td>2010</td>
</tr>
<tr>
<td>2</td>
<td>Greater Huayu</td>
<td>18</td>
<td>2016</td>
</tr>
<tr>
<td>3</td>
<td>Malaysia</td>
<td>12</td>
<td>2010</td>
</tr>
</tbody>
</table>
As can be seen from Figure 4 and Table 2, the keywords of Huayu research involve ontology research, Chinese education, Chinese language inheritance, Huayu community, Huayu policy, etc. “Global Chinese/Huayu” began to be revealed in 2016, and “Huayu Inheritance” appeared for the first time in 2021, indicating that Huayu research has gradually developed from theoretical research to taking into account theory and application.

3.2 Burst Words Analysis

Burst detection reflects the popularity of a keyword studied over a certain period of time (Li, 2020). We have counted the burst words in the Huayu literature as shown in the following figure:
the popularity of “Huayu education” will fall back in 2020, while the popularity of “Mandarin” and “Malaysian Mandarin” has continued unabated and remained so far. The prominent words in 2021 are “vocabulary” and “Huayu Inheritance”, and the popularity has remained so far. In 2014 and 2015, no burst words appeared, indicating that no new research hotspots and research contents appeared in these two years.

**Conclusion**

Under the continuous promotion of the “Belt and Road” initiative, overseas Huayu are an important link to maintain the identity of the Chinese-language communities, and play an irreplaceable role in promoting Sino-foreign economic cooperation, political exchanges, cultural exchanges. Therefore, it is indeed necessary to conduct in-depth analysis and interpretation of the relevant literature published by domestic scholars, and to formulate corresponding research strategies on the basis of the exploration of predecessors.

This study uses the CiteSpace (6.1.R2 version) tool, to take the relevant literature data in the CNKI database as an analysis sample, and visually analyzes the achievements of domestic scholars on Huayu research topics from 2010 to 2022. Combined with the analysis and discussion of the annual volume of articles, the main publishing institutions and authors, highly cited literature, the knowledge network of keyword co-occurrence and the analysis of mutant words, it can be concluded that: (1) The concepts of “global Chinese/Huayu” and “the history of global Chinese” have been re-understood and positioned, and it have new connotations; (2) There are relatively few universities or other institutions in the domestic language discipline that offer Huayu research directions, and there is still a lack of research cooperation on a certain scale; (3) At present, Huayu research mainly focuses on microscopic ontology research, macroscopic research on language use, language attitude and language theory, language teaching and learning research, and the exploration of more theoretical color, theoretical significance and theoretical value needs to be further improved; (4) Synchronic Huayu research are rich, but the diachronic research is relatively insufficient, and the use of new methods also deserves further attention.

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