

A Bibliometric and Visualized Analysis of Systemic Functional Linguistics (2003-2023): Based on CNKI and Web of Science

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Abstract

This paper presents a comprehensive visual analysis of the literature on systemic functional linguistics from 2003 to 2023 using the CiteSpace6.2.R4 knowledge graph analysis tool. By examining core journals in CNKI and Web of Science, the study explores publication, authors, institutions, and keywords to provide a detailed overview of the field. The findings reveal that systemic functional linguistics continues to attract significant attention from scholars globally. The analysis of research authors and institutions highlights active contributors both domestically and internationally, with Sun Yat-sen University representing the domestic institutions and the University of Sydney representing the foreign institutions. Moreover, the study identifies cross-disciplinary, multi-dimensional, and practical development trends as the primary research hotspots in systemic functional linguistics.

Keywords

Systemic functional linguistics; Visualization; CiteSpace; Research hotspots.

1. INTRODUCTION

In the 1950s, Systemic Functional Linguistics (SFL) was born and soon shone on the linguistic stage. M.A.K. Halliday, one of the earliest scholars to engage in systemic theory research, was a British linguist who dedicated his life to exploring SFL. He developed a relatively systematic, comprehensive and highly representative theoretical framework. In the world of linguistics, the SFL school founded by Halliday and the transformational generative linguistics school led by Chomsky are recognized as the two major paradigms. They have played an important role in advancing contemporary linguistic theory and thought (7).

Translation studies is an extremely inclusive field that absorbs the theoretical essence of various disciplines. Huang Guowen (2002a) once said: "The territory of translation studies is like a broad-minded mother, with a magnanimous spirit. She attracts more and more scholars from different disciplines to work hard in this field." The advanced theories of various disciplines constantly inject vitality into translation studies and promote its development, and the achievements of translation studies prove the value of the advanced theories of various disciplines. They complement each other and achieve each other.

In order to understand the research situation of the combination of SFL and translation studies more intuitively and objectively, this paper uses CiteSpace analysis tool and CNKI (China National Knowledge Infrastructure) data visualization analysis, taking CNKI and Web of Science core journals as data sources, from the aspects of publication volume, authors and institutions, keywords, etc., to review the literature on SFL and its combination with translation studies from 2003 to 2023, to grasp the basic situation, hotspots and development trends of this field, and to provide some reference value for the theoretical research.

2. SOURCE AND MATERIALS

2.1. Data Source

Domestically, literature from 2003 to 2023 with "Systemic Functional Linguistics" in the title was searched in the CNKI (China National Knowledge Infrastructure) core collection. After excluding irrelevant material like conference reviews, a total of 613 relevant documents were obtained. For international research, the search term "Systemic Functional Linguistics" retrieved 1365 core documents published between 2003 and 2023 in Web of Science database.

2.2. Materials and Methods

CiteSpace is a knowledge graph software co-created by researchers at Drexel University and WISE Lab of Dalian University of Technology, which can measure literature in a specific field and visualize the relationship between highly prolific authors, cited literature, research hotspots, research funds and development trends in the field. Drawn by this multiple, time-sharing and dynamic citation analysis and visualization technology, it can concentrate the evolution of a knowledge field on a citation network map, and automatically identify the citation node literature and the research frontiers represented by co-citation clustering as the knowledge basis on the map[11]. This study uses CiteSpace6.2.R4 as an analysis tool, and imports the core literature in the field of systemic functional linguistics from 2003 to 2023 into the software. Before the visual analysis of Citespace, the filtered metadata is imported into the tool and the documents are deduplicated. Create a new project in Citespace, set the Time Slicing to 1990-2023, select "author" and "institution", "country" and "keyword" in turn for the node type, and keep other settings default. The software is run by clicking "GO!" and the relevant knowledge network maps are generated and displayed.

3. STATUE QUO

3.1. Research in China

3.1.1 Overall Distribution of Literature Publications

Publications within a field can be seen as a barometer of that field's development. Thus, by tracing the annual publication trends, the paper may gain an overall understanding of the progression within that field. Figure 1 provides an outline of the annual publications sourced from CNKI. As is evident from the figure, domestic research in systemic functional linguistics has demonstrated a wave-like upward trajectory, which can generally be segmented into three distinct phases. The first phase, spanning from 2003 to 2006, saw a total of 67 publications. This period was characterized by a slow pace with a modest output. The second phase, extending from 2007 to 2017, coincided with the continuous development and advancement of systemic functional linguistics. During this period, research embarked on a rapid development trajectory, yielding up to 47 articles annually and showcasing a robust growth trend. The third and most recent phase, which encompasses the years from 2018 to 2022, has witnessed a gradual decline in the volume of literature, suggesting a decreased popularity of this field in recent years. Correspondingly, related research has transitioned into a period of stable growth. In total, the core journals on systemic functional linguistics have published 613 articles, indicating that the field has made considerable strides in China.

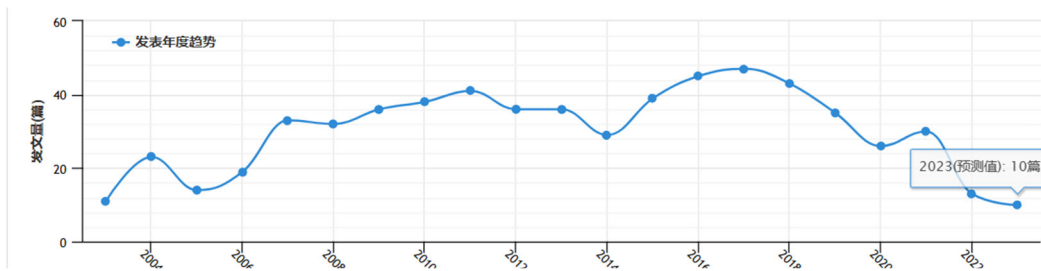


Figure 1. Annual publication trends in China

3.1.2 High-impact Authors and Their Cooperative Institutions

The author-institution collaboration map is used to explore the social relationships between scholars and institutions in a certain institution’s research field, which can help us discover the main researchers or institutions in this field, and thus provide a new perspective for evaluating the academic influence of researchers or institutions[11].

Using the CiteSpace6.2.R4 analysis tool, Figure 2 presents the "Author Knowledge Map of Domestic Research on Systemic Functional Linguistics." The analysis was conducted with the following parameters: Time Slicing: 2003-2023, node type selection "author," and the pruning method employed the minimum spanning tree algorithm (MST) along with pruning merged networks. The remaining settings were kept as system defaults. Based on Figure 2, notable prolific authors in the field of systemic functional linguistics include Si Xianzhu, Chai Xiujuan, Liu Zequan, Chen Yang, among others. The proximity of author names in the figure indicates the level of collaboration between them. It is observed that Chai Xiujuan, Liu Zequan, and Chen Yang have stronger connections with other authors, whereas Si Xianzhu appears to have fewer connections. Overall, the relationships between authors show room for improvement, emphasizing the need for further communication and exchange to foster the growth of this discipline. Furthermore, Figure 3 illustrates that Sun Yat-sen University has published 61 papers between 2003 and 2023, establishing itself as a prominent research base for systemic functional linguistics. Beijing University of Science and Technology and Beijing Foreign Studies University also made notable contributions in this field. Figures 2 and 3 collectively demonstrate the increased attention and productive outcomes of domestic scholars and universities in systemic functional linguistics over the past two decades. However, it is evident that stronger collaborations between authors and institutions are still necessary.



Figure 2. Network graph of authors

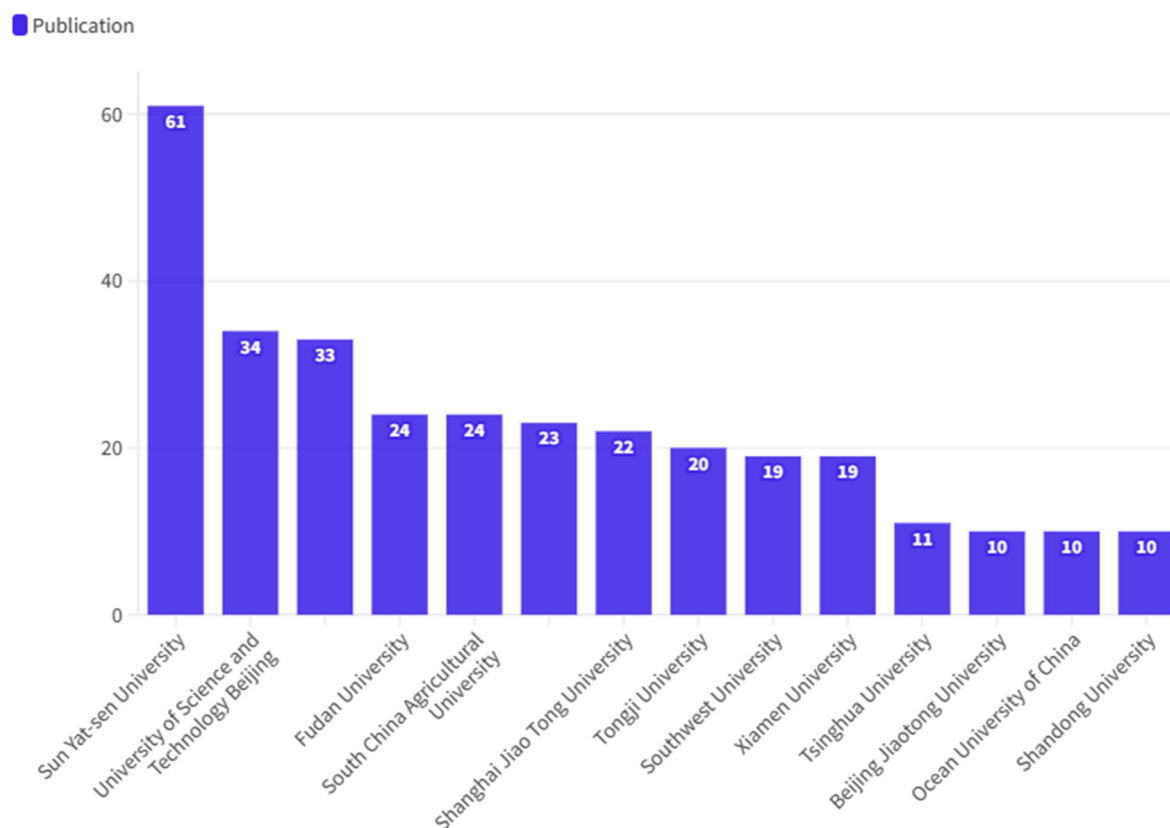


Figure 3. Graph of affiliated institutions

3.1.3 Research Hotspots

Keywords effectively summarize core concepts and topics addressed within scholarly works. If a keyword appears repeatedly in the literature, it means that the research topic represented by the keyword is the hotspot in the field[5]. Identifying research hotspots within a field can be accomplished by examining the frequency of keywords. Higher keyword frequencies indicate the prominence of certain topics in the field. In CiteSpace, the cluster view is utilized to visualize the structural characteristics between clusters, emphasizing key nodes and significant connections[11]. Figure 4 presents the keyword cluster analysis map of systemic functional linguistics, with the node type changed to “keyword”. By selecting the “K cluster” option in the CiteSpace menu, the figure below displays the first nine keyword clusters. Each area in the figure is assigned a number, with smaller numbers indicating larger clusters containing more keywords. Figure 4 illustrates the first 11 clusters generated from 2003 to 2023: “#0 function, #1 grammatical metaphor, #2 discourse analysis, #3 foreign language education, #4 interpersonal meaning, #5 appraisal theory, #6 metafunction, #7 Halliday, #8 register”. Among these clusters, the “function” cluster emerges as the largest and most keyword-rich. The majority of systemic functional linguistics research revolves around the concept of function. Research in this field can be broadly categorized into three main areas: theoretical exploration, encompassing aspects such as “discourse”, “mood”, and “interpersonal meaning”; cross-disciplinary collaborations, particularly with education; and investigations focused on Halliday himself.

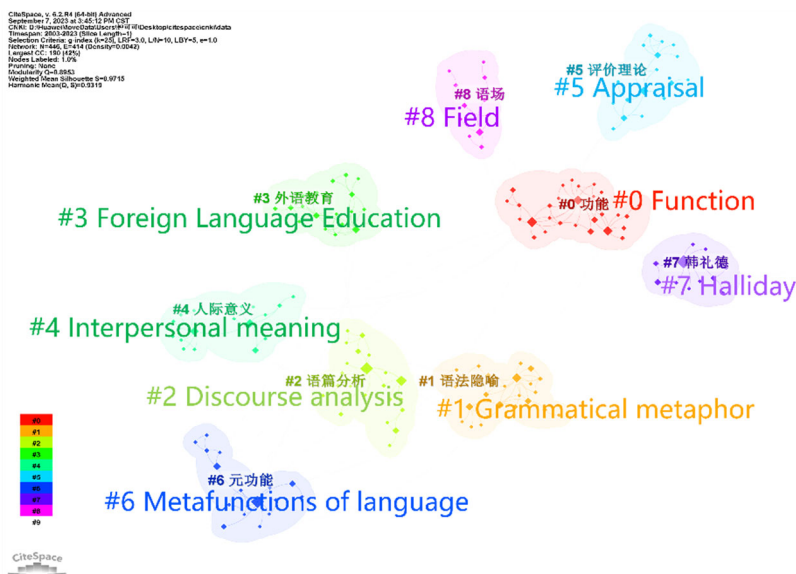


Figure 4. Keyword cluster view

3.2. Research in Western Countries

3.2.1 Overall Distribution of Literature Publications

As can be seen from Figure 5, 2020 and 2021 are the peak periods for research on systemic functional linguistics, and the literature volume broke through 190 in 2021. In addition, since 2010, foreign research in this field has shown a vigorous development trend, and the literature volume has steadily increased. This field is constantly developing and improving.

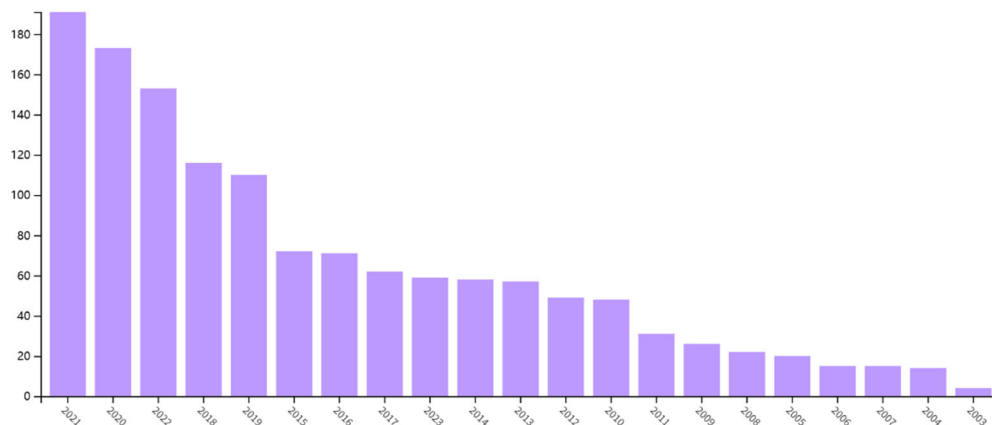


Figure 5. Annual publication trends in western countries

3.2.2 Major contributors

During the period from 2003 to 2023, Zhang XD emerged as the leading contributor to literature on systemic functional linguistics, with a remarkable total of 14 papers. Overall, the volume of literature in this field is notably abundant, with scholars in the figure below averaging approximately 6 papers over the fifteen-year period. This indicates the considerable attention that foreign scholars have devoted to this field. In terms of research institutions, the University of Sydney stood out as the foremost contributor in terms of paper volume, surpassing 65 papers. This can be attributed to the influential presence of Halliday, one of the founders of systemic functional linguistics, who joined the University of Sydney in 1976. Halliday's association with the university facilitated the establishment of a robust research community dedicated to systemic functional linguistics, thereby greatly advancing the field not only at the University of Sydney but also globally.

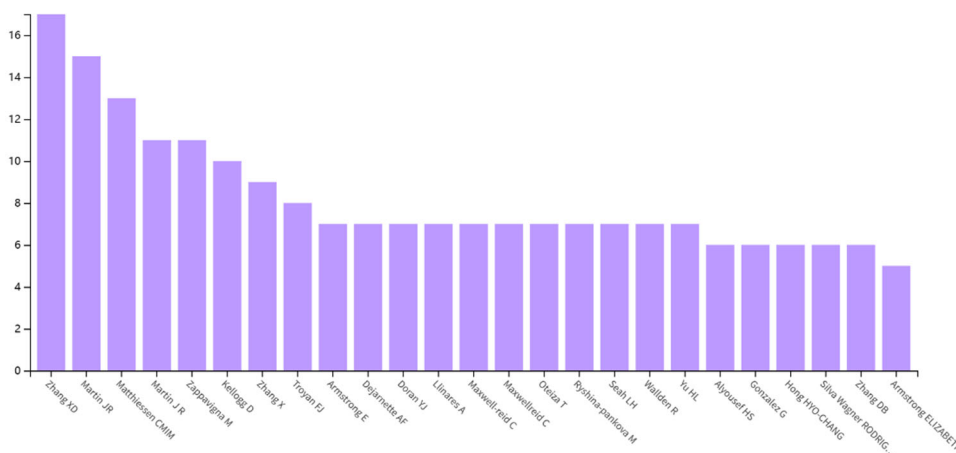


Figure 6. Major authors in western countries

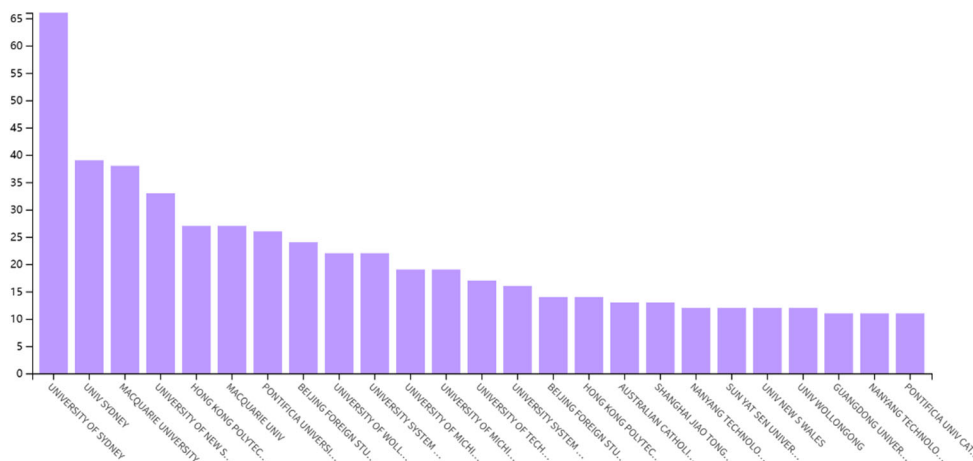


Figure 7. Major institutions in western countries

3.2.3 Research Direction

Understanding the research hotspots in western countries can help to find new perspectives for domestic research, stimulate new thinking, and promote the development of domestic research. As shown in Figure 8, there are many research directions of systemic functional linguistics, but they mainly focus on linguistics, education and communication, while other directions are far behind in development.

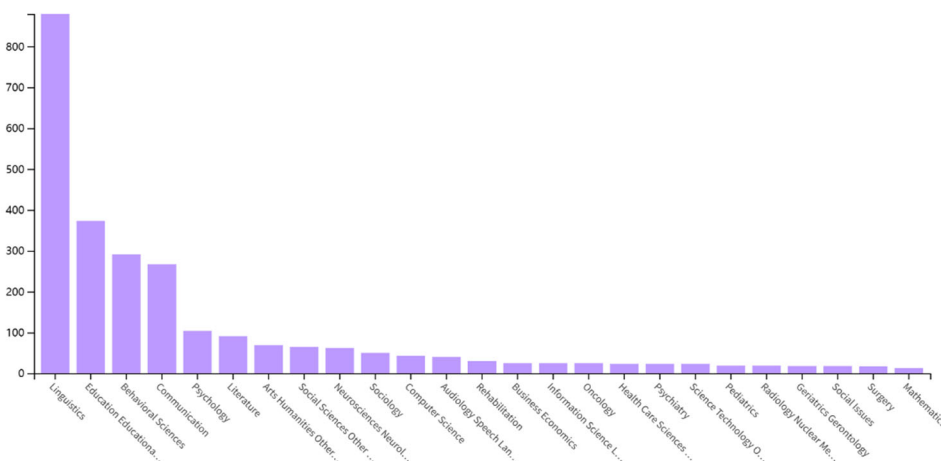


Figure 8. Research direction of western scholars

3.3. Summary of Research Hotspots

3.3.1 Exploration of the Theory

Systemic functional linguistics, rooted in anthropology, offers a social and evolutionary perspective on the theory of language function[6]. It falls within the realm of functionalist linguistics and is grounded in empirical realism. Halliday, as the pioneer of systemic functional linguistics, was profoundly influenced by the linguistic ideas of his mentor, Firth. He placed significant emphasis on the meaning in language and the social context within which speech is produced. During the period from the 1950s to the mid-1960s, Halliday primarily focused on exploring the theory of system, progressing through stages of rank and category grammar and system grammar. He introduced four language categories: unit, class, structure, and system, and highlighted the interconnectedness of rank, delicacy, and exponence. In 1966, Halliday proposed *Some Notes on 'Deep' Grammar* and held that system takes precedence over structure in terms of their relationship since structure is both a product of various systems and belongs to a selectable system. In the mid-1960s, Halliday shifted his attention to the function of language, using it as a starting point to delve into the meaning of language existence and the essence of semantics, phonology, and syntax. The publication of *An Introduction to Functional Grammar* in 1985 marked the maturation of Halliday's functional grammar. By then, the concept of system grammar had been refined and encapsulated into ideational function, interpersonal function, and textual function. These three functions eventually became known as metafunctions.

Systemic functional linguistics, as a problem-oriented discipline, places significant emphasis on bridging the gap between theory and practice. Its core focus revolves around understanding language, utilizing language effectively, and harnessing the functional aspects of language. As a result, over the course of more than half a century, systemic functional linguistics has exerted a profound influence on various areas of language research, including language ontology (including phonology), language education, child language development, language and social class, text and discourse analysis, stylistics, multilingual research (including translation studies), and multimodal research[3]. Initially, Halliday spearheaded the construction of systemic functional linguistics theory by himself. However, in the past two decades, an increasing number of scholars have joined the efforts of theory construction and have made remarkable contributions in its application. For instance, scholars such as Matthiessen (supplementing and expanding the theoretical framework, lexical grammar, language typology), Hasan (context, discourse analysis), Martin (discourse semantics, appraisal framework), Fawcett (lexical grammar), Greaves (phonology), and Berry (metafunction) have made significant advancements in the construction and development of systemic functional linguistics[4].

In China, the pioneering efforts to study and introduce systemic functional linguistics were led by Hu Zhuanglin and his colleagues. Hu Zhuanglin not only conducted comprehensive research on systemic functional linguistics but also delved deeply into specific aspects of the theory. His contributions encompassed various areas, including bridging theory with practice, analyzing the main predicate position, and exploring discourse styles. He published numerous notable achievements in these domains. Furthermore, Hu Zhuanglin initiated the Systemic Functional Grammar Symposium in China, establishing it as an annual event. This symposium served as a platform for scholars to gather and exchange ideas in the field of systemic functional linguistics. Additionally, numerous other academic conferences focusing on systemic functional linguistics were frequently organized, facilitating effective knowledge sharing and scholarly engagement.

3.3.2 Communication of Cross Interdisciplinarity

With the development and maturity of systemic functional linguistics, the application of cross-disciplinary fields is becoming more and more prominent. Whether in China or abroad, scholars not only focus on systemic functional linguistics itself, but also combine it with multiple fields and disciplines, better guide social practice, and achieve the effect of $1+1>2$. As shown in Figure 4, domestic scholars are interested in the research of systemic functional linguistics and cognitive linguistics, while abroad, scholars prefer to link it with more realistic disciplines such as education and communication.

Cognitive linguistics field: Cognitive linguistics mainly focuses on the psychological aspect of language, emphasizing the way of human cognition. Wang Yin introduced Langacker's discourse analysis view as early as 2003, believing that this cognitive discourse analysis view is a supplement to the discourse analysis of functional linguistics. Subsequently, Wang Yin pointed out that although the two schools have different emphases with systemic functional linguistics, they are basically consistent in their main points, principles and methods, and these two schools are complementary. Tang Yeqing compared the concept of "detail level" in cognitive linguistics with the concept of "delicacy" in systemic functional linguistics, pointing out that the degree of detail in language is related to the domain, showing a gradual trend, and once again proving the compatibility of the two linguistic schools. Zhou Pin proved the complementarity of the two schools in discourse coherence. In addition to proving complementarity, some scholars start from a cognitive-functional perspective and conduct research on texts or theories.

Education field: (As a separate discipline) Education is an educational science that studies the relationship between education and society, education and human development, and various aspects of school education[4]. Most scholars mainly use systemic functional linguistics to guide teaching practice and create efficient and interesting classrooms. In the later stage of Halliday's research on systemic functional linguistics, he turned his attention to children's second language acquisition, which has to be said to have a great significance for contemporary education.

Communication field: Communication is a basic social process[9], and communication research focuses on the relationship between people, society and media. The research object of communication is an empirical entity, which is unstable and susceptible to changes in human behavior and historical forces[1]. According to CNKI data, systemic functional linguistics research in this area mostly focuses on the analysis and discussion of news discourse, the research of advertising discourse, cross-cultural communication and external propaganda materials.

4. ASSESSMENT AND FURTHER STUDIES

4.1. Assessment

4.1.1 Remarkable Achievements with Further-strengthened Researches of Marginal Disciplines

As previously mentioned, research on systemic functional linguistics has experienced significant growth and development over the past two decades, attracting increasing attention from scholars both in China and abroad. This research not only focuses on advancing the theory itself but also emphasizes its practical significance, positioning it as a theory with valuable guidance. This has facilitated cross-disciplinary communication and development, leading to a favorable scholarly environment. When integrated with education or communication research, the application of systemic functional linguistics yields results that surpass its intrinsic value. However, it is unfortunate that both in China and internationally, systemic functional linguistics and translation research have not garnered substantial literature volumes. In China, scholars such as Si Xianzhu have made notable contributions to this field. In 2004, Si Xianzhu proposed

a translation quality evaluation model from the perspective of functional linguistics. In 2016, another paper was published, summarizing the improved and developed results of this model. In recent years, increasing attention has been devoted to this field. However, according to data from CNKI, the average annual publication volume in China from 2003 to 2023 is 3.58, and according to WoS data, the average annual publication volume internationally during the same period is 3. Therefore, it is evident that further exploration and development of the intersection between systemic functional linguistics and translation research are necessary for future generations. Given the significant guiding significance of systemic functional linguistics, its potential for combining with other fields is promising and holds great potential value for society.

4.1.2 Effective Interdisciplinary Communication with Less Exchanges between Authors

The nature of systemic functional linguistics inherently holds practical significance, positioning it as a theoretical foundation for guiding other disciplines. This interdisciplinary approach has led to the emergence of more than ten research fields, reflecting the strong and vibrant momentum in this direction. The study of systemic functional linguistics encompasses a cross-disciplinary and multi-dimensional landscape. However, the sustainability of research development relies on avoiding closed approaches. As mentioned earlier, there is a need to deepen communication and exchange among research institutions and authors. This can be achieved through the establishment of cooperative networks aimed at sharing research findings, fostering innovative thinking, overcoming research barriers, and further advancing the field. Additionally, cross-disciplinary communication must be further intensified. In the era of digital humanities, systemic functional linguistics research can utilize quantitative methods to complement qualitative analysis. By leveraging digital tools and technologies, large-scale language data can be collected and analyzed, unveiling general patterns and trends in language phenomena. Concurrently, qualitative analysis can provide a deep understanding of the underlying mechanisms and meanings of these phenomena, thereby explaining quantitative data. The integration of qualitative and quantitative research approaches facilitates a comprehensive consideration of research objectivity and thoughtfulness, enhances research efficiency, and opens up new perspectives for scientific inquiry.

4.2. Further Studies

"Burst" describes a significant, temporary spike in the prominence or relevance of a given node within the network. Nodes that experience bursts see a sudden, rapid increase in a certain metric (e.g. occurrence frequency of a keyword, number of publications by an author) within a discrete timeframe, triggering heightened scholarly focus on that concept. Keyword burst analysis can explore the sudden frequency of keywords. Figure 9 presents top 25 keyword with the strongest citation bursts. The "Year" column specifies when the keyword was first observed in the literature. The "Year" column specifies when the keyword was first observed in the literature, providing context on when discussion began. "Begin" and "End" delineate the temporal boundaries of the emergence burst. Based on the depicted figure, it is evident that the keyword "function" emerged initially, indicating the early attention it received from the academic community. However, its popularity was short-lived, and its influence remained relatively limited. On the other hand, the term "Halliday" exhibited the longest mutation time, signifying Halliday's significant contributions to systemic functional linguistics and establishment of academic authority in the field. Over the past five years, the research focus has centered around three prominent topics: "academic thought," "interpersonal meaning," and "intertextuality." Notably, "intertextuality" has been undergoing continuous mutation since 2021, indicating its enduring relevance. Intertextuality refers to the incorporation and transformation of other discourses within any given text, giving rise to a mosaic-like composition[8]. Yang Rufu (2008, 2009, 2010) has been a representative figure in the research paradigm that combines systemic functional linguistics with intertextuality. Yang explored the

integration model of triple intertextuality, encompassing "co-occurrence," "co-direction," and "co-construction" within specific domains. Furthermore, Lu Lichun (2022) analyzed Xu Yuanchong's English translation of *The Romance of the Western Chamber* from the perspectives of phonology, rhetoric, and intertextuality, based on the interpersonal function theory of systemic functional linguistics. Intertextuality reveals the interconnection between works and demonstrates the evolution of research topics and content. According to the prominence of keywords displayed in the map, future research can continue to delve into the perspective of intertextuality, thereby enriching research outcomes and advancing the systematization of research in this field.

In summary, the increase in the popularity of theoretical review not only shows that systemic functional linguistics has been enduring for many years and has a strong vitality, but also shows that this theory is constantly developing and improving, and becoming more mature.

Top 25 Keywords with the Strongest Citation Bursts



Figure 9. Top 25 keywords with the Strongest Citation Bursts

5. CONCLUSION

This paper utilizes CNKI visualization analysis and CiteSpace6.2.R4 analysis tools to provide an overview of the research landscape of systemic functional linguistics both domestically and internationally from 2003 to 2023. The aim is to contextualize its development, highlight its research focal points, and explore future directions. The analysis reveals that systemic functional linguistics has continuously garnered attention from scholars worldwide, as evidenced by the growing volume of scholarly papers. Moreover, both domestic and foreign research communities exhibit active and prolific authors and institutions. Notably, Sun Yat-sen

University represents the domestic institutions, while the University of Sydney represents the foreign institutions. Furthermore, the analysis of research hotspots demonstrates that systemic functional linguistics is experiencing a dynamic and practical development trend, characterized by its cross-disciplinary and multi-dimensional nature. As this theory continues to evolve, it is anticipated that more scholars will contribute to addressing its limitations, breaking through disciplinary boundaries, closely integrating theory with practice, and maximizing its value.

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