

Visual Analysis of Discourse Power Research: Tracing Origins, Examination, and Evolution (Post-print)

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Date: 2023-04-01T00:00:00+00:00

Abstract

[Purpose/Significance] In the current environment of complex and intricate international relations, discourse power is regarded as an important manifestation of a country's soft power. Reviewing the development status of research on the theme of discourse power helps to explore the internal logic of evolution, reveal the thematic framework, summarize the evolutionary trajectory, and guide positive development. [Method/Process] To address measurement bias existing in the data mining process, this study designs a comprehensive retrieval strategy for discourse power research, employs bibliometric and visualization analysis methods, analyzes the origins of research literature, detects annual variations in the discourse power research field, superimposes optimal annual topic changes after cross-validation onto a dual-clustering map, explores the disciplinary diffusion patterns of discourse power research from both citing and cited domains, analyzes the evolution of research topics at different stages, and thereby reveals the evolutionary trends of discourse power research. [Results/Conclusions] Research related to discourse power can be traced back to Foucault's achievements in the archaeology of knowledge. The research can be integrated into five major knowledge domains, including linguistics, political science, and sociology. The overall knowledge evolution shifts from traditional research topics to the refinement of emerging topics, interdisciplinary cross-fertilization, and cross-national collaboration. The evolutionary path is relatively stable and exhibits obvious national leading effects and policy guiding effects.

Full Text

Visualization Analysis of Discourse Power Research: Tracing Origins, Examining Status, and Evolutionary Patterns

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Abstract:

[Purpose/Significance] In the current environment of complex international relations, discourse power is regarded as an important manifestation of a country's soft power. Examining the development of discourse power research helps explore its internal evolutionary logic, reveal its thematic structure, summarize its trajectory, and guide its positive development. **[Method/Process]** To address measurement deviations in data mining, this paper designs a comprehensive retrieval strategy for discourse power research. Using bibliometric and visualization analysis methods, we analyze the origins of research literature, detect annual changes in the discourse power field, superimpose the optimal annual thematic changes after cross-validation onto a biclustering map, explore disciplinary diffusion contexts from both citing and cited domains, analyze the evolution of research themes across different stages, and thereby reveal the evolutionary trends of discourse power research. **[Result/Conclusion]** Discourse power research can be traced back to Foucault's achievements in the archaeology of knowledge. The research can be integrated into five major knowledge domains: linguistics, political science, and sociology. The overall knowledge evolution has shifted from traditional research topics to refinement of emerging topics, interdisciplinary cross-fertilization, and cross-national collaboration. The evolutionary path is relatively stable and exhibits obvious national leading effects and policy guidance effects.

Keywords: discourse power; bibliometrics; visualization analysis; evolutionary law; knowledge graph

Classification Numbers: G250; D820

DOI: 10.13266/j.issn.0252-3116.2022.11.001

In today's rapidly changing world, international relations have become increasingly complex, and soft power factors represented by discourse power occupy an increasingly important position in the international power structure. As countries compete to pursue their own discourse dominance, the nature of discourse power has gradually changed, evolving from dialogue and exchange into a means for countries to expand their international influence. As a new representation of comprehensive national power, the magnitude of discourse power directly determines the degree to which a country's values, concepts, and paradigms are accepted by other nations. Its essence is a discursive manifestation under the combined influence of international influence, guiding power, and dissemination capacity. General Secretary Xi Jinping emphasized during the 31st collective study session of the Political Bureau of the CPC Central Committee that we must strengthen top-level design and research layout to build a strategic communication system with distinctive Chinese characteristics, focusing on improving international communication influence, the appeal of Chinese culture, the affinity of China's image, the persuasiveness of Chinese discourse, and the guiding

power of international public opinion. In this international environment, sociologist Zheng Hangsheng pointed out that discourse power is the unity of power and rights, qualification and authority; Zhao Rongying et al. believe that discourse power is the ability of social subjects to use discourse to disseminate and guide the breadth and depth of their influence, and its generation process is from discourse production and dissemination to forming influence on the audience's cognition and behavior; Liu Yunlong et al. took sports philosophy and social science literature indexed in SSCI and A&HCI databases as research objects, and quantitatively evaluated the international discourse power of China's sports philosophy and social science research from four aspects: literature productivity, literature influence, literature development power, and literature diffusion power; Sun Guiping et al. explored the construction status of China's higher education international discourse power based on text analysis; Liu Di et al., based on the value orientation and practical dimension of ideological work in universities in the new era, analyzed the research hotspots and evolutionary trends of ideological discourse power in Chinese universities through citing literature's nominal terms, high-frequency keyword cluster analysis, and temporal evolution.

1 Literature Review

Since the 1990s, international competition has shifted from military strength to soft power foundations such as economy and culture. Discourse power, as an important indicator of national soft power, has become a focus of academic attention and research. American scholar Walter Lippmann analyzed the construction of discourse power from a communication perspective; Harold Lasswell proposed the "5W" communication model to analyze the process of discourse dissemination; and Joseph Nye introduced the concept of "soft power" in the debate between "American triumphalism" and "American decline," arguing that the combination of soft and hard power can enhance a country's attractiveness and thereby its discourse power. Domestic scholars have conducted in-depth explorations of discourse power from perspectives such as academic discourse power, online discourse power, ideological discourse power, and ideological and political education discourse power, providing valuable references for the construction and enhancement of China's discourse power.

However, while research scale continues to grow and scientometrics flourishes, the academic community has raised concerns about measurement biases in bibliometric analysis, including data quality issues (problems arising from improper operations in planning, acquisition, storage, and application stages) and research subjectivity (non-natural objectification of research processes, results, and assumptions). Wang Binglu et al. analogized the basic steps of data mining to bibliometric procedures and proposed the concept of bibliometric deviation, focusing on its main manifestations and solutions from four perspectives: literature source selection, data preprocessing, method selection, and result interpretation. Additionally, factors such as poor data quality, artificial parameter

setting, model overfitting, or excessive optimization can lead to biased measurement results. Visualization analysis based on bibliometric data also faces issues like data overload, inconsistent dimensions, and weak color semantics. Only by addressing deviations in data acquisition and visualization presentation and their negative impacts, and applying scientific methods to reduce research discrepancies, can conclusions become more convincing.

As the enhancement of discourse power is a systematic and progressive project, it requires comprehensive analysis of practical research, in-depth examination of its historical evolution, grasp of theoretical contexts, identification of core elements supporting discourse power, and application of efficient discourse dissemination strategies. Research on discourse power involves multiple disciplines, with scholars approaching it from information metrics, political science, linguistics, and other perspectives. However, no existing literature has quantitatively examined the evolution of discourse power research from a bibliometric perspective, examined the patterns of literature changes, summarized the state of disciplinary and national cooperation, explored the evolutionary patterns of discourse power research, and the theoretical lineage of the research is not yet clear. Given this, this paper considers the contradiction between data recall and precision that often exists in data acquisition, designs a comprehensive retrieval strategy based on domain ontology retrieval models and the four-stage theory of derivative literature, and from a bibliometric perspective, summarizes the annual changes in discourse power research literature, analyzes the evolution paths of research themes, traces the theoretical origins of discourse power research and explores its internal evolutionary logic, in order to provide references for subsequent theoretical development and application practice of discourse power research.

2 Research Framework and Methods

2.1 Research Process and Framework Design

In the data acquisition phase, this study uses the Web of Science (WoS) database as the literature source. We first searched titles, abstracts, keywords, and full texts, conducting synonym queries, core keyword extraction, derivative keyword generation, multi-stage iteration of high-frequency non-repetitive keywords, citation acquisition of pioneering classic literature, expansion of initial retrieval results, and hyponym acquisition through similarity threshold setting. All retrieval results were then combined, duplicates removed, yielding a total of 32,457 documents. Finally, bibliographic information in different formats was exported as foundational data for subsequent literature and word frequency statistics. In the data processing phase, keywords from target literature were cleaned to ensure measurement accuracy. The specific process and framework are shown in Figure 1 [Figure 1: see original paper].

2.2 Research Methods

In visualization analysis, we employed RPYS (Reference Publication Year Spectroscopy) to identify peak citation years of references in the discourse power literature set, thereby uncovering milestone literature that has played an important role in promoting the emergence and development of the research. We also introduced the compound annual growth rate indicator to eliminate absolute value effects and detect annual changes in the discourse power research field, conducting preliminary fitting of literature growth based on three growth models.

At the thematic clustering level, we extracted subject terms from the literature set, created a high-frequency term-document matrix based on frequency ranking, selected hierarchical clustering analysis methods, and employed topic modeling. Using natural language processing tools for abstract segmentation and TF-IDF filtering, we screened high-frequency terms and used ten-fold cross-validation to select the optimal number of topics. The annual development of the top five optimal themes from the fitting was then superimposed on the biclustering map to summarize the current research status based on clustering results and semantic relationships between subject terms.

From a collaboration perspective, we created international cooperation chord diagrams and China-centered cooperation rose diagrams, and used dual-map overlays to explore knowledge flow and diffusion contexts of discourse power research at the journal level from both citing and cited perspectives. We calculated the proportion of references from various disciplines in the target literature set year by year to detect interdisciplinary characteristics and core-peripheral disciplines of discourse power research.

For knowledge evolution, we selected words as analysis units and divided the dataset into four time periods based on literature volume and fixed time windows: Subperiod1968-1989, Subperiod1990-1999, Subperiod2000-2010, and Subperiod2011-2021. The matrix type was co-occurrence, with association strength as the standardization method, simple center algorithm clustering, network thresholds set at 50 and 5, using h-index and total citations as measurement indicators, and Jaccard coefficient as the similarity indicator. Sankey diagrams were used to display the thematic evolution map of discourse power across stages based on semantic association strength between topics.

3 Discourse Power Research: Tracing Origins

The emergence and development of any discipline depends on predecessors' summaries and knowledge accumulation, and specific research themes are no exception. Exploring a field's origins is crucial for its construction, development, and knowledge inheritance. RPYS is a historical origin mining method based on citation frequency and publication year of a literature set's references to identify origin documents. By examining the citation data obtained in this study and applying RPYS analysis, we investigated the origins of discourse power re-

search and used CiteReferencesExplorer to detect origin documents, identifying important years and classic literature that drove the research forward.

3.1 Origins of Discourse Power Research

Figure 2 shows the reference publication year spectroscopy for discourse power research before 2000, with the horizontal axis representing reference publication years and the vertical axis showing total citation frequency within each publication year. Citation frequency data was dimensionally reduced and mapped to the [0,1] interval to display relative citation frequency for each publication year.

The results show that the filtered literature was published between 1968-2021, containing 833,762 references. The citation frequency curve began to grow during 1968-1985, indicating the emergence of early pioneering literature. From 1985 onward, the curve showed an almost linear upward trend, suggesting the publication of influential heuristic literature on discourse power. The year 2010 represents the peak citation frequency across the entire time domain of discourse power research, during which foundational literature was discovered and research reached its zenith.

Although the term “discourse power” was not proposed until the mid-to-late 20th century, numerous theories had already laid its practical foundation. As shown in Figure 2 [Figure 2: see original paper], the first citation peak appeared in 1972. This period had seven peak publication years, from which we can further excavate pioneering classic literature from corresponding years, including Antonio Gramsci’s “cultural hegemony,” Michel Foucault’s “power discourse,” Jürgen Habermas’s “legitimation,” and Jean Baudrillard’s “simulacra.” The earliest traceable origins are Foucault’s achievements in the archaeology of knowledge from the 1960s. Foucault’s conceptual system was rigorous and theoretically rich, constructing power boundaries through the causal relationship of “knowledge-discourse-power.” This can be summarized causally as: discourse nurtures power, and power manifests in discourse. In Foucault’s theoretical system, “discourse” and “power” were clearly defined, relatively independent concepts. Based on identified literature, Foucault did not combine discourse and power or explicitly propose the term “discourse power.”

Before 1990, international discourse power research had not yet formed a trend, and total citation frequency grew slowly across publication years. After the term was proposed in the 1980s, citation frequency increased significantly. Following a small peak in 1990, the average annual citation frequency has reached 21,481, with 2010 being particularly prominent at nearly 35,000 citations. The identified results show that research by Michel Foucault (Knowledge-power theory), Ferdinand de Saussure (Referential View of Language), Pierre Bourdieu (Habitus, Capital, Field), Van Dijk (News as Discourse), and Norman Fairclough (Media Discourse) laid a solid foundation for discourse power research.

3.2 Trends in Discourse Power Research

Since French philosopher Michel Foucault proposed the “discourse power theory” in 1968, overall research output on this theme has shown a trend of rapid increase followed by deceleration. Some studies have used the Compound Annual Growth Rate (CAGR) indicator to detect growth trends in discourse power research, eliminating absolute value fluctuations. This paper adapts this indicator to explore growth trends, calculated as follows:

$$\text{CAGR}(t_0, t) = (V(t)/V(t_0))^{1/(t-t_0)} - 1 \text{ (Formula 1)}$$

Where t_0 represents the starting year, t is the subsequent year, $V(t_0)$ is the number of publications in the starting year (1968), and $V(t)$ is the total number of documents in year n . A CAGR above zero indicates that publication volume in the target year increased compared to the previous year, while a negative value indicates a decrease. In 1984 and 1988, CAGR was below 0%, indicating decreased publication volume compared to the previous year. $\text{CAGR}_{\text{all}} = 16.69\%$ and $\text{CAGR}_{\{10\}} = 11.54\%$, showing that although overall literature volume continues to grow, the growth rate has slowed in the past decade.

Fitting from three models—Price’s exponential growth, linear growth, and power growth—the relationship can be approximated by the function shown in Figure 3 [Figure 3: see original paper]. Based on residual sum of squares, the power curve shows the best fit (P-values all 0), while Price’s curve, despite being based on scientific indicators and multiple statistical tests, shows less consistent results. This indicates that in the near term, the growth curve of discourse power research literature can be approximated as a power trend line.

From the statistics in Figure 3, the $f(1)$ value far exceeds the theoretical proportion of 60%, intuitively showing that the author distribution in discourse power research does not conform to Lotka’s law. This supports the conclusion that discourse power research has not yet reached the stage suitable for Price curve fitting and remains in the second stage of the four-stage literature growth theory. This conclusion can be further verified through Lotka formula curve fitting. Using K-S test to examine the consistency between theory and actual data, the maximum difference is 0.8712. At significance level $\alpha=0.01$, the critical D value is $0.0079 < 0.8712$, indicating the author group has not yet matured.

Generally, Price’s scientific literature growth curve represents an ideal pattern of literature growth. However, the fitting effect in this study is not ideal, as literature growth is often influenced by multiple factors, and ideal models have limitations. Comparing the two curves, only the initial segment of the exponential curve resembles the relationship between cumulative discourse power literature and time, suggesting the target literature has not yet reached the stage suitable for Price curve fitting. We therefore tested whether advancing the Price exponential curve cycle could improve fitting. Experiments advancing the curve by 3, 5, and 7 periods showed that advancing by 5 periods achieved $R^2=0.8407$, verifying the hypothesis and further demonstrating that discourse

power research remains in the growth stage and has not yet matured.

Additionally, discourse power research has fluctuated in recent years, first declining then rising, with an average growth rate of about 5%. While research has encountered certain bottlenecks and multiple factors have led to decreased volume, according to the four-stage literature growth theory, discourse power research has entered a new growth period.

4 Discourse Power Research: Current Status Examination

4.1 Topic Biclustering Analysis

Biclustering algorithms simultaneously cluster both target objects and their attributes in two directions, discovering potential layout patterns and offering advantages over traditional one-way clustering methods. Through comprehensive comparison of intra-cluster similarity, inter-cluster similarity, and visualization hill effects, the results show that four clusters is optimal. The annual changes of the top five optimal themes from topic model fitting are shown in Figure 4 [Figure 4: see original paper].

Examining the development of public policy discourse analysis in recent years, new theoretical frameworks have emerged, providing new vitality for explanatory and critical policy research to some extent. In policy science, policy discourse analysis is seen as a paradigm shift from positivism to post-positivism. With critical reflection on traditional positivist policy analysis, attention to linguistic phenomena in public policy has further increased. In fact, discourse power on policy issues only expanded to the public in modern times, and in the internet era, its development and differentiation have become more intense. Current Western policy theory development regards public consultation as a key element of policy formulation, making modes that emphasize interpretability, practicality, and deliberative consultation inevitable choices for policy discourse in the internet society era.

Second, as globalization, marketization, and networking deepen, ideological games persist long-term. Since the concept of “ideology” was proposed as a complete concept by French philosopher Destutt de Tracy in the first half of the 19th century, it has become a tool and target of political debate. With rapid economic growth, new competition points have emerged between countries, primarily in the ideological domain. Soft power centered on culture, values, and ideological influence plays an increasingly important role in comprehensive national power competition. Currently, academia understands “ideological discourse power” as a country’s suggestions and opinions in the international domain—abstract expressions of politics, culture, and religion that are accepted by the international community and produce certain effects. As the ideological core and value foundation of discourse, only by enhancing its attractiveness and influence can its cohesion, radiation, and penetration be maximized.

Third, discourse analysis runs through the entire research process. As a branch

of 20th-century linguistics, discourse analysis has multiple perspectives and has evolved from theoretical models to research angles and scopes. Since the 1990s, multimodal discourse analysis theory has developed rapidly, particularly achieving remarkable results in social semiotics-based research represented by G. Kress and O. Halloran. In addition to Z. Harris's discourse analysis model, eight other theoretical models—including genre analysis, systemic functional linguistics discourse analysis, textual structure analysis, text construction, pragmatic perspective discourse analysis, critical discourse analysis, positive discourse analysis, and multimodal discourse analysis—have contributed significantly to the depth, breadth, and effectiveness of discourse analysis theory from different angles and for different research goals.

Finally, with the rise of new online media and maturing internet technology, the media ecology has undergone tremendous changes. The competition for international discourse power is reflected not only in national status but also in challenges from new technologies to traditional media structures and transformations brought by big data and cloud computing. In research on communication media, the term “discourse power” appears frequently. Scholars have noted that new media expands the space, venues, and channels for discourse power realization, but also raises issues of audience comprehensiveness and discourse expression authenticity. With the vigorous development of new online media, a new media ecology has begun to form. Social software and short-video applications carried by smart electronic products have rapidly popularized and integrated into all aspects of life. The emergence of new online media and instant messaging platforms has transformed discourse power structures and shifted social distribution of discursive power. From the perspective of discourse dissemination effects, the new media ecology has gradually taken shape, with new media occupying an increasingly important position in discourse power competition. The necessity, feasibility, new opportunities, and practical paths for constructing cyberspace discourse power based on new media are crucial for strengthening mainstream ideology discourse power in cyberspace in the new era. In the information age, digital information is monopolized by internet technology, and dissemination forms, speed, and effectiveness are driven by information technology. While information methods bring technical convenience, their characteristics of vast information volume, value pluralism, and instantaneous interaction also impact discourse power. Online discourse power is individuals' right to express discourse through computer and network media, representing cross-regional, cross-class, and cross-age social opinions on public events in cyberspace. In the new era, the rapid development of networks has intensified discourse power competition, making the formation of online discourse systems through new media to seek political and economic discourse power a hot topic, while the technological gap in the field also proves the urgency of controlling online discourse power.

4.2 Characteristics of Cooperative Network Space

As an interdisciplinary theme, discourse power research covers a wide range, with nearly 50% of literature involving international cooperation. This study uses chord diagrams and wind rose diagrams (centered on China) to analyze cooperation among countries. Due to the large number of countries involved, we selected the top 20 countries by cooperation intensity to create the international cooperation chord diagram shown in Figure 5 [Figure 5: see original paper]. Data points in the chord diagram are arranged radially in circular form, with lines showing cooperation relationships between countries. The larger the area swept by the “circle chord diagram,” the higher the cooperation intensity, with colors and line thickness showing different types of connections and their strength.

From the perspective of group size, the US-Canada group holds an absolute dominant position, presenting a network structure with the US as the supporting node, covering 74 countries and regions. In terms of connection density, Canada is the absolute core node, with the Netherlands, Germany, and Australia as secondary important nodes, and Finland, Switzerland, South Africa, and other countries also occupying considerable scale within the group. Figure 5 further shows that discourse power research is mostly based on inter-country cooperative relationships, presenting obvious national hierarchical systems and a structure of dense center and sparse periphery. This indicates to some extent that discourse power is dominated by a few countries, particularly the prominent core positions of the US, UK, and Australia. These countries have high betweenness centrality and strong comprehensive control over the network. The US has the largest number of research partners, playing an indispensable bridging role in the group with the highest centrality measurement. Meanwhile, discourse power research shows obvious regional geographic advantages and network polarization, with close ties among European and American countries, such as Canada with Central and Eastern European countries, the US with Australia, and the US with Nordic countries.

Additionally, using China as the center and dividing by cooperative paper volume, cooperation situations vary significantly with different countries due to uneven technological development levels. The figure only shows the top 20 countries by cooperation intensity. Since China’s integration with the international community, driven by policy guidance and funding support, China’s cooperative papers with Western developed countries and “Belt and Road” countries have become a common phenomenon. Meanwhile, international cooperation has become an important force in China’s international research collaboration. Over the past decade, the growth rate of China’s international cooperative papers has exceeded that of its total international publications, with the total volume of international cooperative publications showing a continuous upward trend. Despite varying growth rates, international research cooperation is expected to become an important model for China’s high-quality research output.

4.3 Disciplinary Knowledge Diffusion Context

In addition to national cooperation, exploring disciplinary collaboration analysis is equally important for understanding field development. By superimposing the research theme dataset onto the software's base map and showing knowledge concentration trends through citation paths, the essence lies in connecting the citing and cited domains. The overlay map reflects knowledge flow between disciplines at the journal level, showing the domain distribution of citing and cited journals and their citation relationships, thereby revealing interdisciplinary characteristics and core-peripheral disciplines of discourse power research.

Figure 6 [Figure 6: see original paper] reflects the position of literature journals in the entire scientific journal map and the knowledge absorption and influence relationships established with other journals. The left half shows the citing literature discipline distribution as the current status of discourse power research (main journal distribution groups for discourse power in WoS), while the right half shows cited literature disciplines as the research foundation. Wave curves connect the relationship between research status and research foundation. The top bar chart shows annual publication changes. Figure 6 shows that international discourse power research mainly concentrates in five journal groups: economics, political science, sociology, education, and psychology, with extensive cross-disciplinary integration among them. Cited literature covers even broader domains, including medicine, mathematics, physics, earth sciences, and ecological sciences in addition to the mentioned fields. The left citing domain has four main citation paths, with representative journals including DISCOURSE SOCIETY. Meanwhile, economics and political science groups as source journals have relatively high z-scores. Overall, discourse power research has maintained high research activity over the past decade, with extensive international cooperation greatly promoting high-quality development.

Core disciplines first emerged between 1964-1995 and have continued to the present. These 12 core disciplines account for approximately 80% of total references, indicating their prominent core position. The interdisciplinary characteristics and evolution of research literature are basically dominated by these 12 core disciplines. Overall, the literature shows relatively strong interdisciplinary features, with universities and research institutions extensively exploring interdisciplinary integration and construction, greatly enhancing research innovation and integration capabilities.

5 Discourse Power Research: Knowledge Evolution

5.1 Evolutionary Trend Analysis

As an emerging interdisciplinary research field, discourse power literature is mainly distributed across multiple disciplines and fields such as Economics, Political Science, and Psychology, showing a structural characteristic dominated by political science and sociology, supplemented by physics and medicine.

Given the particularity of discourse power, this study conducts a dynamic analysis of thematic evolution across different periods. By obtaining hot topics in the discourse power field during different periods and analyzing thematic evolution dynamics, we can discover the field's knowledge evolution patterns.

Figure 7 [Figure 7: see original paper] shows the emergence and disappearance of keywords over the past 50 years, divided into four periods: 1968-1989, 1990-1999, 2000-2010, and 2011-2021. Downward arrows represent emerging words, upward arrows represent disappearing words, and horizontal arrows represent keywords retained from the previous period. Figure 7 shows that the number of emerging words far exceeds disappearing words, indicating good development momentum in discourse power research. The total number of keywords has increased year by year across successive periods, and the number of retained keywords from previous periods also shows an upward trend, consistent with the conclusion that discourse power research remains in the development stage with strong research inheritance.

Figure 8 [Figure 8: see original paper] shows that over time, the number of research themes in each period has continuously increased, and thematic content has gradually enriched. During 1968-1989, only one theme appeared: CONVERSATION. Discourse power research is essentially based on conversation, and as Foucault argued, power is built upon the foundation of rights. During this period, scholars had already begun to focus on the relationship between language and power. In 1990-1999, the number of research themes began to increase. After discourse power was formally proposed, issues such as indicator system construction, internal relationships, usability, and social networks became hot topics. During 2000-2010, many new themes emerged as discourse power was widely applied at two different levels, with more scientists choosing to conduct scientific exchanges in academic social networks. During 2011-2021, research themes became more in-depth and numerous, including semantics, discourse structure, interpretation of discourse institutions (concepts), integration of organizational discourse and identity interaction, interpretation of Foucault's power discourse concept, regulation of normative political discourse, and critical discourse analysis. Theoretical analysis theme clusters appeared in all three later periods, indicating that theoretical research has always been a key focus, with content gradually deepening over time.

Overall, international discourse power research remains in a developmental state. Examining its trajectory, research can be divided into four main evolutionary paths, dominated by the CONVERSATION theme. In the 1990s, it evolved into themes such as POWER, POLITICS, CRITICAL THEORY, and INTERACTION. Subsequently, each theme further refined, deriving sub-themes like discourse structure, critical theory, business discourse, political discourse, and human rights discourse. All evolutionary paths developed from branches of the early CONVERSATION theme, primarily focusing on media discourse construction, academic literacy, and public policy themes. The first main evolutionary path can be seen as the foundation and core of research, developing

rapidly and becoming relatively mature and stable in later stages. The second path introduced Western discourse analysis theory into literary criticism, with subsequent attention shifting to people's livelihood domains, where interest has declined. Other paths show more complex evolution, generating specialized themes such as management discourse, social cognition, genre analysis, patriarchy, and racism during development. These emerging concepts and specialized knowledge reduce connection density between themes, showing relatively slow development. Some themes had low attention in early stages but surged in later stages with network development, indicating greater potential. Multiple evolutionary paths are closely connected, cross-fertilizing, and relatively stable.

5.2 Evolutionary Path Analysis

From the perspective of evolutionary paths and states, the number of discourse power research themes is positively correlated with research duration, gradually increasing over time. This indicates both deepening research content and the radiation of new branches (new taxa) from existing research. During 1968-1989, discourse power research themes were few and received relatively low attention. After the 1990s, research directions began to diversify, generating numerous emerging themes. The thickness of connections between themes visually indicates research 热度. Additionally, theme differentiation and integration are evident. Over the past decade, related research has continued to grow, and evolution has become more complex. Although new research themes such as "ARGUMENT STRUCTURE" and "HEALTH RISK" have emerged, they have not developed into research centers due to insufficient attention.

Conclusion

This paper conducted visualization analysis of discourse power research literature origins, current status, and evolution based on reference publication years, semantic relationships between high-frequency terms, knowledge flow between citing and cited domains, and topic similarity, reaching the following conclusions:

Discourse power research remains in the second stage of literature growth, showing good development momentum. After rapid growth, it has gradually matured. Although fluctuations have occurred in the past three years, the overall volume remains in a relatively stable upward process. Research is closely related to discourse power theory and practice, with content heavily influenced by national policies.

From the perspective of cooperative network characteristics, the globalization of international cooperation in discourse power research has become increasingly prominent. As cooperation continues to expand and deepen, cooperation between specific countries has weakened to some extent, and concentration has decreased, shifting from tripartite dominance to multipolarization. Cooperative relationships between different countries in the field have also strengthened,

forming relatively stable cooperative groups.

In terms of leading research domains, discourse power research is dominated by sociology, with most achievements belonging to interdisciplinary categories, covering ontological, subjective, and practical research, showing overall characteristics of being numerous, scattered, and diverse. Different clusters intersect and overlap, with research themes interrelated and intertwined. From the perspective of evolutionary paths and states, the number of new themes continues to increase, research content shows diverse development, and multiple evolutionary paths have emerged in research directions, with relatively clear and stable evolutionary paths.

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Abstract:

[Purpose/Significance] In the current environment of complex international relations, discourse power is regarded as an important symbol of a country's soft power. Combining the development status of discourse power research helps explore the internal logic of evolution, reveal its thematic structure, summarize its evolutionary trajectory, and guide positive development. **[Method/Process]** Aiming at measurement deviations existing in data mining, this paper designs a comprehensive retrieval strategy for discourse power research, uses bibliometric and visualization analysis methods to analyze the origins of research literature, detects annual changes in the discourse power field, superimposes the optimal annual thematic changes after cross-validation onto a biclustering map, explores disciplinary diffusion contexts from citing and cited domains, analyzes the evolution of research themes at different stages, and thereby reveals the evolutionary trends of discourse power research. **[Result/Conclusion]** Discourse power research can be traced back to Foucault's achievements in the archaeology of knowledge. The research can be integrated into five knowledge domains: linguistics, political science, sociology, etc. The overall knowledge evolution has changed from traditional research topics to refinement, interdisciplinary cross-fertilization, and cross-country cooperation of emerging topics. The evolutionary path is relatively stable and has obvious national leading effects and policy guidance effects.

Keywords: discourse power; bibliometrics; visualization analysis; evolutionary

law; knowledge map

Note: Figure translations are in progress. See original paper for figures.

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