

Original Paper

Analysis of Pragmatic Presupposition in “Qiushi” Based on LDA Model from Linguistic Adaptation Theory

Yaping Yang^{1*}

¹ Foreign Language Department, Xinjiang University, China

* Yang Yaping, Corresponding author

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Abstract

This research, grounded in Linguistic Adaptation Theory, selects 648 English Qiushi Journal articles from 2015 to 2024 as corpus. It applies the LDA topic model to proportional samples 18 papers and codes their pragmatic presuppositions via NVivo to analyze presupposition strategies' traits.

Results show six core national governance themes covering politics, economy and livelihood. Its thematic evolution falls into three dynamically adaptive stages with shifting research focuses. Besides, pragmatic presuppositions form a three-dimensional adaptive pattern matching linguistic structures, changing contexts and cultural salience.

The study enriches LDA's linguistic empirical applications, broadens Adaptation Theory's coverage, facilitates cross-research of pragmatic presupposition and macro-linguistics, and offers a fresh angle for political discourse pragmatic strategies.

Keywords

linguistic adaptation theory, LDA model, pragmatic presupposition, Qiushi, pragmatic strategies

1. Introduction

Political discourse research has garnered substantial attention in the fields of linguistics and political science and evolved into a prominent research direction. Current studies in this domain mostly adopt qualitative analysis. Nevertheless, such research is generally constrained by limited capacity for large-scale data processing and high susceptibility to subjective bias throughout the analytical process, making it difficult to objectively reveal the inherent laws of thematic evolution and pragmatic characteristics of political discourse.

In recent years, the Latent Dirichlet Allocation (LDA) topic model has been widely applied to diverse text analysis tasks by virtue of its strengths in processing massive volumes of text, delivering intuitive

semantic representation and conducting objective quantitative analysis. It effectively addresses the limitations of purely qualitative research. Dong Zhihui (2024) employed the LDA model to analyze hot topics concerning the integration of culture and tourism. Zhang Liu, Wang Xiwei, Huang Boetal. (2021) adopted this model to explore the thematic evolution of news coverage on COVID-19. These studies have validated the feasibility and superiority of the LDA model in text topic identification and quantitative analysis. Capable of efficiently processing massive textual data, extracting thematic information and mining textual connotations, the model provides a novel technical pathway for quantitative research on political discourse.

Existing studies on political discourse predominantly focus on institutional discourse analysis within the Chinese context (Wu Jue & Chen Xinren, 2018) or critical analyses of foreign media reports related to China (Sun Li & Weng Yiqin, 2015). As an important carrier of political discourse with Chinese characteristics, *Qiushi Journal* has seen a scarcity of systematic linguistic research targeting its English edition. The available relevant studies are mainly concentrated on translation techniques and strategies (Jia Yuling, 2017; Gao Bin, 2023).

Given its outstanding performance in processing large-scale texts, the LDA model boasts extensive application potential for bulk textual research. Integrating the LDA model with the Linguistic Adaptation Theory to analyze pragmatic presupposition strategies can furnish solid data support for relevant research. The combination of the two approaches can make up for the deficiencies of existing studies and achieve an organic integration of quantitative statistics and qualitative analysis in political discourse research.

Against the forementioned research background, this study combines LDA-based quantitative analysis with qualitative analysis of pragmatic presuppositions to explore the application strategies of pragmatic presuppositions in the English edition of *Qiushi Journal*. It also aims to verify the applicability of the LDA model to research on political discourse in academic journals. By incorporating quantitative statistics and qualitative analysis into political discourse research, this paper intends to enrich the methodologies and research perspectives of discourse studies.

2. Method

2.1 Theoretical Foundations

2.1.1 Linguistic Adaptation Theory

In the 1990s, Jef Verschueren, a Belgian linguist, put forward the Linguistic Adaptation Theory (LAT). This theory holds that language use is a continuous process of linguistic selection driven by communicative intentions, which is essentially a process of adaptation through language choice. Meanwhile, it proposes that language possesses three core properties: variability, negotiability and adaptability.

Research on linguistic adaptation requires comprehensive and systematic exploration from four dimensions: adaptation to context, adaptation of linguistic structure, dynamics of adaptation, and

salience of adaptation processes. These four dimensions constitute the major analytical framework of the Linguistic Adaptation Theory, enabling researchers to complete pragmatic description and pragmatic interpretation.

2.1.2 Pragmatic Presupposition

As an important pragmatic strategy, pragmatic presupposition is a research area that has experienced continuous theoretical development. In 1983, Stephen Levinson systematically sorted out presuppositional phenomena in natural language and summarized thirteen types of presupposition triggers covering lexical items, syntactic structures and other linguistic levels. However, his classification suffers from cumbersome categorization and fragmented sub-types, which poses great challenges to practical application.

On the basis of Levinson's research, George Yule simplified and reorganized the classification. He further proposed a six-category classification in 2000, namely existential presupposition, factual presupposition, lexical presupposition, structural presupposition, non-factual presupposition and counterfactual presupposition. This classification is concise and highly operable, and thus can serve as a reliable analytical tool for discourse analysis. Accordingly, this study mainly adopts Yule's six-category framework, absorbs and revises the classification system of Levinson (1983), and formulates targeted coding rules.

2.1.3 LDA Topic Model

In this study, Python 3.11 was used to construct the Latent Dirichlet Allocation (LDA) model to conduct text mining and thematic evolution analysis. As an unsupervised probabilistic generative model, LDA adopts a three-layer probabilistic structure of document-topic-word. It calculates the semantic relevance between topics and documents, as well as between topics and words to realize topic extraction.

The C-V coherence score was adopted as the evaluation criterion to select the optimal number of topics for model training. To determine the optimal topic quantity, the candidate topic range was set from 2 to 10. Ultimately, the model outputs multiple results including C-V coherence scores, topic-keyword lists, and the proportion of documents under each topic. Based on these outputs, this study completes in-depth text mining of articles from the English edition of Qiushi Journal.

2.2 Research Methods

2.2.1 Data Sources

The research data were retrieved from the official website of Qiushi Journal (English edition), covering publications issued from 2015 to 2024. The collected metadata include article titles, authors, publication dates, full texts, web links and other relevant information.

2.2.2 Article Selection Criteria

Inclusion Criteria: Articles with standard layout and no garbled characters, as well as complete key information such as titles, authors and publication dates.

Exclusion Criteria:

- (1) Articles with incomplete metadata or full texts;
- (2) Articles where all content or more than 90% of the content exists in the form of images.

2.2.3 Research Procedures

This study consists of three major parts: construction and evaluation of the LDA model, quantitative analysis of pragmatic presuppositions via NVivo, and analysis from the four dimensions of linguistic adaptation.

(1) Construction and Evaluation of the LDA Model

A total of 648 articles from the English edition of Qiushi Journal were enrolled for thematic identification and thematic evolution analysis. The overall research workflow is presented in Figure 1, which mainly involves four stages: data collection, text preprocessing, thematic analysis and statistical analysis.

To improve the efficiency and accuracy of thematic identification, raw texts were preprocessed before model training. The preprocessing procedures specifically include data denoising, word segmentation, stop word removal, letter lowercasing and elimination of low-frequency words.

Stage No.	Stage Name	Core Tasks and Procedures
Stage 1	Data Collection	► Data collection from the official website (2015–2024)
		► Filter documents according to inclusion/exclusion criteria
		► Final sample: 648 articles
Stage 2	Text Preprocessing	► Denoising → Tokenization → Stop word removal
		► Format standardization → Low-frequency word elimination
		► Output clean text dataset
Stage 3	Thematic Analysis	► LDA model training (optimized based on c-v coherence score)
		► c-v scores, t topics - high-frequency words and topic proportions

Figure 1. Thematic Identification and Evolution Analysis

(2) Coding and Quantification of Pragmatic Presuppositions

Combining the presupposition classification frameworks proposed by Yule and Levinson, this study developed a coding manual for presupposition triggers and employed NVivo to conduct coding and statistical analysis of pragmatic presuppositions in the texts.

Table 1. Coding Framework for Pragmatic Presuppositions

Types of Presuppositions	Triggers	Examples
Existential Presupposition	Definite Descriptions	the, a, an, this, that, the possessive construction, proper names, names with modifiers
Lexical Presupposition	Implicative Verbs	manage, forget, happen to, avoid
	Change-of-State Verbs	start, begin, stop, tease, continue, finish, carry on, leave, come, go, enter, arrive

	Iterative Expressions	also, too, again, other, another, anymore, return, restore, repeat, comeback, for the -th time
	Evaluative Verbs	accuse, charge, criticize
Structural Presupposition	Temporal Clauses	before, after, as, while, when, since, during, whenever
	Cleft Sentences	It is/ was... that/who....
	Comparative and Contrastive Constructions	than, as...as..., the ...the..., too, back, in return
	Non-restrictive Relative Clauses	Which is/are..., who is/are...
Factual Presupposition	Factual Verbs	know/realize/regret that, be aware/proud/glad/sad/sorry/odd/indifferent that
Non-factual Presupposition	Non-Factual Verbs	dream, imagine, pretend
Counterfactual Presupposition	Counterfactual Conditionals	If (subjunctive mood)

(3) Adaptation Analysis

Stage-sampled texts corresponding to different themes derived from the LDA topic model were coded, classified, and subjected to frequency analysis using NVivo. The specific applications of pragmatic presuppositions were then discussed in light of the Linguistic Adaptation Theory.

3. Results

The results of this study are divided into two parts: thematic identification and presupposition distribution.

3.1 Thematic Identification

Thematic identification and evolution analysis were conducted on the 648 articles from the English edition of Qiushi Journal. The C-V coherence score reached its peak value of 0.559 when the optimal number of topics was set to 6 (Figure 2), yielding six core thematic categories (Table 2).

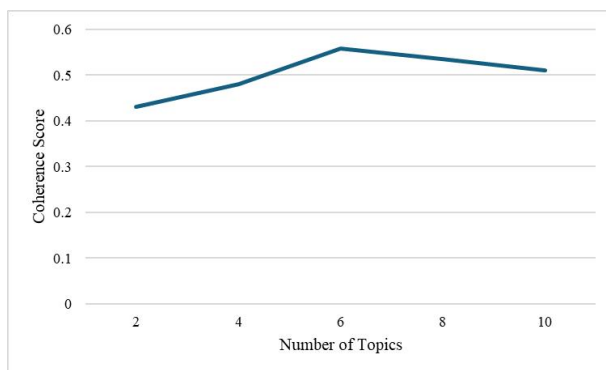


Figure 2. C-V Score

Table 2. LDA Topics-High Frequency Words

Topic ID	Topic Name	Top 15 High-Frequency Keywords
Topic 1	Ideological Theories and Party Building Culture	socialism, Marxism, modernization, era, characteristics, culture, party, history, often, cultural, members, thought, historical, spirit, nature
Topic 2	Rural Development and Industrial Economy	rural, poverty, industrial, trade, services, quality, industries, investment, mechanisms, resources, production, security, enterprises, high-quality, energy
Topic 3	International Cooperation and Diplomatic Civilization	cooperation, human, shared, rights, community, road, peace, cultural, relations, security, peaceful, civilization, belt, president, foreign
Topic 4	Democracy and Institutional Development	law, democracy, rule, congresses, democratic, legal, often, laws, cppcc, parties, legislative, standing, law based, oversight, constitution
Topic 5	Public Health and People's Livelihood Security	security, health, epidemic, medical, control, prevention, covid19, employment, workers, insurance, rate, services, who, stage, virus
Topic 6	Rural Grassroots Governance and Residents' Lives	village, had, poverty, residents, life, county, who, cultural, water, culture, local, army, said, rural, lives

Table 3. Topic Document Distribution in Three Stages (Count / Proportion)

Stage	Ideological Theories (T1)	Rural Industry (T2)	International Cooperation (T3)	Democracy and the Rule of Law (T4)	Public Health (T5)	Rural Grassroots (T6)	Total

2015-2018	86 (26.5%)	61 (18.8%)	69 (21.2%)	56 (17.2%)	45 (13.8%)	8 (2.5%)	325
2019-2021	20 (12.7%)	53 (33.5%)	21 (13.3%)	12 (7.6%)	18 (11.4%)	34 (21.5%)	158
2022-2024	18 (10.9%)	71 (43.0%)	20 (12.1%)	13 (7.9%)	9 (5.5%)	34 (20.6%)	165

3.2 Pragmatic Presupposition Data

A total of 18 articles were selected via proportionate sampling to ensure balanced sample coverage. This study statistically analyzed the categories, frequencies and distribution characteristics of presuppositions across different topics. The results are presented in Table 4.

Table 4. Frequency Statistics of Pragmatic Presuppositions in the English Edition of Qiushi Journal, 2015-2024

Types	2015-2018	2019-2021	2022-2024	Total
Existential Presupposition	116 (85.9%)	147 (85.0%)	207 (85.2%)	470
Lexical Presupposition	12 (8.9%)	15 (8.7%)	21 (8.6%)	48
Structural Presupposition	6 (4.4%)	8 (4.6%)	11 (4.5%)	26
Factual Presupposition	1 (0.7%)	2 (1.2%)	3 (1.2%)	6
Non-factual Presupposition	0 (0%)	1 (0.6%)	1 (0.4%)	2
Counterfactual Presupposition	0 (0%)	0 (0%)	0 (0%)	0
Total	135	173	243	552

4. Discussion

4.1 Adaptation of Linguistic Structure Strategies

Linguistic structural adaptation is realized through the selection of vocabulary, syntax and style to comply with the norms of the target language, and it constitutes an important linguistic strategy in political discourse. The texts of the English edition of Qiushi Journal published from 2015 to 2024 exhibit prominent structural adaptation characteristics in the use of pragmatic presuppositions, particularly in the employment of presupposition triggers.

Case 1 The Communist Party of China (CPC) boasts a glorious, 95-year history.

(Ouyang Song, 2016, Why Has the CPC Been Successful in Overcoming Adversities and Turning the Tide?)

In Case 1, the definite article combined with the proper noun CPC forms an existential presupposition. This structure concisely and uncontroversially affirms the objective existence of the referent, conforming to the nominalization and succinct expression features of English political discourse and avoiding semantic redundancy.

At the lexical level, triggers for existential presuppositions including proper nouns, definite noun phrases and possessive constructions are frequently adopted. Such usage aligns with the stylistic preference for nominalization and conciseness prevailing in English political discourse.

Case 2 Since **the 18th National Congress of the Communist Party of China** (CPC) in 2012, the CPC Central Committee headed by General Secretary has introduced a series of new principles, ideas, and strategies on the environment.

(Chen Fining, 2016, Advancing into New Territory: China's Environmental Reforms)

Temporal clauses introduced by “since” serve as structural presuppositions. They present the temporal background of relevant policies, render arguments logically organized and well-structured, and comply with the syntactic norms of formal English texts.

At the syntactic level, a small number of structural presupposition triggers, including temporal clauses, cleft sentences and comparative constructions, adapt to the syntactic logic of complex English sentences. These devices enhance discourse rigor without impairing syntactic conciseness, and thus satisfy the syntactic requirements of international political texts for clear logic and coherent structure.

4.2 Dynamic Adaptation to Context

Language use is not static, but a dynamic process adjusted continuously in response to changing contexts. Based on Figure 4, Figure 5 and Table 2, the publication period of Qishi Journal can be divided into three stages. Across all themes in each stage, the distribution of pragmatic presuppositions realizes dynamic adaptation to contextual needs.

The period from 2015 to 2018 represents the initial stage featured by diversified guidance and discourse construction. Its content covers the dissemination of ideological theories, international diplomatic cooperation, development of democracy and the rule of law, and the initial growth of rural industrial economy. During this phase, existential presuppositions account for more than 85% of the total and stand as the predominant presupposition type. This distribution conforms to the practical demands of official discourse to maintain objectivity, authority and explicit stance.

From 2019 to 2021, the research focus shifted to rural revitalization and people's livelihood development, with major themes revolving around poverty alleviation, rural development and grassroots livelihood security. Existential presuppositions still occupied a dominant position, while the proportions of lexical and structural presuppositions increased moderately. Such presuppositions effectively support the implementation of livelihood policies and other governance work, and help

forge public consensus.

The years 2022 to 2024 mark the stage of in-depth high-quality development of rural industries, where core topics focus on rural economy and industrial upgrading. The dominance of existential presuppositions remains stable; the share of structural presuppositions rises slightly, whereas factual, non-factual and counterfactual presuppositions persist at a low level. These discourse features match the demands for refined governance in economic and livelihood fields and improved policy effectiveness. They also drive the steady transition of rural revitalization from comprehensive poverty alleviation toward in-depth high-quality development.

4.3 Salience of Ideological Awareness

Variations in the proportions of different pragmatic presuppositions essentially reflect the discourse subject's strategic regulation of ideological salience. The high proportion of existential presuppositions (85.14%) reinforces the awareness of authority and public consensus. Presuppositions with medium and low frequencies highlight rational logic. Controversial presuppositions with low or zero occurrence weaken subjective speculation and arbitrary judgment.

Case 3: The Decision explicitly stated that "Furthering the reform of Party and government institutions" is a profound transformation aiming to promote the modernization of China's governance systems and capacity."

(Sun Fangu, 2015, Adhering to a Distinctly Chinese Approach to National Security)

Case 4: We will promote the high-quality development of the BRI, quickly build a multidimensional Belt and Road connectivity network, and strengthen...

(General Secretary, 2022, Advancing High-Quality and Sustainable Development of China's Social Security Programs)

Existential presuppositions account for as high as 85.14%, highlighting the awareness of consensus. Core concepts such as proper nouns and definite noun phrases are taken as inherently valid and universally accepted. In Case 1, presupposition triggers including The Decision and China's governance systems and capacity directly establish the authoritative status of modernization drive. In Case 2, the BRI and Belt and Road connectivity network reinforce the unquestionable authority of official stances. Lexical presuppositions and structural presuppositions take up 8.70% and 4.71% respectively, and their moderate frequency reflects a rational and pragmatic mindset. As supplementary linguistic devices, they serve to sort out ideas and advance relevant processes. Lexical presuppositions realized by words such as promote, build and strengthen in the cases clearly demonstrate the logic of policy implementation. Structural presuppositions embodied in temporal clauses and cleft sentences organize policy ideas, balancing discourse rigor and authority.

Non-factual and counterfactual presuppositions only make up a combined proportion of 1.45%, which deliberately downplays subjective assumptions. Such presuppositions tend to introduce personal perceptions or counterfactual hypotheses and thus undermine discourse objectivity. No subjectives or hypothetical expressions are adopted in the above cases, complying with the communication

requirements of official discourse to stay objective, neutral and controversy-free.

To conclude, the proportion of different pragmatic presuppositions is highly coordinated with ideological salience, forming a targeted paradigm for ideological regulation in official political discourse. Overall, existential presuppositions act as the core, lexical and structural presuppositions serve as auxiliaries, and low-frequency or controversy-free presuppositions function as supplements, so as to precisely regulate the salience of ideas in discourse.

5. Conclusion and Prospects

5.1 Main Conclusions

Taking 648 articles from the English edition of Qiushi Journal published between 2015 and 2024 as the research corpus, this study adopts the LDA topic model for thematic identification and quantitative statistics. Combined with the Linguistic Adaptation Theory, it systematically analyzes the thematic evolution and pragmatic presupposition strategies of the journal's political discourse. The main conclusions are summarized as follows.

Comprehensive theme coverage. The LDA model accurately identifies six core themes: ideological theories and Party building culture, rural development and industrial economy, international cooperation and diplomatic exchanges, democracy, the rule of law and institutional development, public health and people's livelihood security, as well as rural grassroots governance and residents' life (see Figure 2). These themes fully cover core areas of national governance including politics, economy, society, people's livelihood and foreign affairs, constructing the framework of major communication topics for political discourse in the English edition of Qiushi Journal.

Distinct evolution rules. As indicated in Figure 3 and Table 1, thematic evolution presents three stages of dynamic adaptation in line with domestic and international development contexts. The period 2015-2018 is a diversified guidance stage with relatively even distribution of topics. Ideological theories and Party building, international cooperation and diplomacy, rural development and industrial economy, together with democracy, the rule of law and institutional development, constitute the major topic clusters. From 2019 to 2021, the proportion of rural-related themes rises remarkably, with rural development and industrial economy ranking first and accounting for a total of 55%. Poverty alleviation and grassroots livelihood improvement become the primary focus. During 2022-2024, rural industries emerge as a key topic: the share of rural development and industrial economy reaches its historical peak, while rural grassroots governance and residents' life remain at a high level, and other themes continue to decline.

Coordinated adaptation of presuppositions. Pragmatic presuppositions achieve dynamic adaptation across linguistic structure, contextual dimensions and cultural awareness. High-frequency expressions conform to the international discourse system; themes evolve dynamically with changing contexts; and presupposition strategies adapt to variations in physical, social and psychological contexts. Existential presuppositions occupy an absolutely dominant position, accompanied by appropriate use of lexical

and structural presuppositions. Factual, non-factual and counterfactual presuppositions are rarely employed. This distribution caters to the communication features of official political discourse, namely objectivity, neutrality, pragmatism and restraint (Table 1).

Supplementary research methods. The integration of LDA-based quantitative analysis and qualitative interpretation guided by the Linguistic Adaptation Theory remedies the deficiencies of traditional political discourse research, including insufficient quantification and subjective bias. This study adds new empirical cases for the application of the LDA model in linguistics, expands the applicable scope of the Linguistic Adaptation Theory and pragmatic presupposition theory, and provides a new combined quantitative-qualitative perspective for research on pragmatic strategies of large-scale political discourse.

5.2 Limitations and Future Research Prospects

This research has yielded certain findings on the adaptation of external political discourse. Nevertheless, restricted by research conditions, methodologies and data sources, it still has evident limitations.

First, the communication effects lack empirical verification. This study has not conducted audience surveys to examine the actual acceptance of the discourse, so the conclusions lack practical support.

Second, the sample is limited in representativeness. The research only uses data from the single platform of the English edition of Qiushi Journal, without incorporating multichannel and multilingual discourse materials. Hence, it cannot fully reflect the general rules of external political discourse communication. Third, the model has limited applicability. A single LDA model is incapable of accurately analyzing discourse with mixed themes, which may cause deviations in adaptation analysis.

The prospects for future research are put forward as follows. First, expand the sample scope by collecting multi-platform and multilingual external political discourse texts to improve the comprehensiveness and representativeness of samples. Second, strengthen empirical verification by carrying out audience surveys to test communication effects, so as to enhance the practical guiding value of research findings. Third, optimize research methodologies. Integrate interdisciplinary approaches to improve the topic identification model, build a more systematic analytical framework, refine adaptive communication strategies for external political discourse, and ultimately boost the international communication effectiveness of China's political discourse.

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