A Comparative Textual Analysis of Three Historical Resolutions Using Natural Language Processing: Tracing Institutional Memory, Strategic Evolution, and Ideational Continuity

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Abstract: Historical resolutions represent pivotal moments of institutional self-reflection, strategic recalibration, and collective memory consolidation. This study presents a comprehensive, data-driven comparative analysis of three landmark historical resolutions issued by a major socio-political organization over the course of a century. Employing an integrated suite of natural language processing (NLP) techniques—including Latent Dirichlet Allocation (LDA) for thematic modeling, TF-IDF for keyword salience, cosine similarity for inter-textual comparison, dependency parsing for syntactic complexity, sentiment and stance analysis, and named entity co-occurrence networks—we uncover nuanced patterns of continuity and transformation across these foundational documents. Our findings reveal a dynamic evolution in core thematic priorities: from foundational consolidation and internal rectification in the first resolution, through a paradigmatic shift toward modernization and systemic reform in the second, to a forward-looking articulation of long-term civilizational mission and governance maturity in the third. Despite significant contextual and lexical shifts, a deep structural coherence persists, anchored in enduring principles of unity, historical consciousness, and adaptive governance. This research not only illuminates the discursive strategies of institutional longevity but also demonstrates the robust applicability of computational linguistics to the rigorous, objective study of historical political texts.

Keywords: Historical Resolutions; Natural Language Processing; Thematic Modeling; Institutional Memory; Textual Analysis; Discourse Evolution; TF-IDF; Semantic Networks

1. Introduction

The capacity of large-scale organizations—be they states, movements, or transnational institutions—to navigate prolonged historical trajectories often hinges on their ability to periodically engage in structured self-assessment. Such moments of introspection are frequently crystallized in formal, authoritative documents known as "historical resolutions." These texts serve multiple critical functions: they diagnose past challenges, legitimize current leadership, codify lessons learned, and project a coherent vision for the future. As such, they constitute invaluable archives of institutional memory and strategic cognition.

Traditional historiography has long relied on qualitative close reading to interpret these documents. While insightful, this approach is inherently susceptible to researcher bias, limited scalability, and difficulty in capturing subtle, systemic patterns across large corpora. The advent of computational methods, particularly in the field of Natural Language Processing (NLP), offers a powerful complement: enabling objective, reproducible, and fine-grained quantitative analysis of textual features at scale.

This paper undertakes a systematic NLP-based comparison of three canonical historical resolutions produced by "the Organization"—a long-standing, influential socio-political entity with a century-long operational history. These resolutions were issued at critical junctures: the first in the aftermath of its formative struggles, the second during a period of profound internal reorientation, and the third at the dawn of a new strategic era. By treating these texts as linguistic artifacts, we ask: How do their thematic structures, lexical choices, syntactic forms, and semantic networks evolve over time? What elements of continuity bind them together despite their distinct historical contexts? And

what does this evolution reveal about the Organization's underlying mechanisms of adaptation and resilience?

Our contribution is threefold. First, we provide the first comprehensive, multi-method NLP analysis of this specific triad of historical documents, moving beyond anecdotal or purely thematic readings. Second, we develop a replicable analytical pipeline that integrates diverse NLP techniques—from topic modeling to network analysis—into a unified framework for studying institutional discourse. Third, by rigorously anonymizing all politically sensitive references, we demonstrate how computational text analysis can be ethically and effectively applied to historically significant yet contextually delicate materials, opening avenues for cross-cultural and comparative institutional studies.

The remainder of this paper is structured as follows. Section 2 reviews relevant literature on historical document analysis and NLP applications in the social sciences. Section 3 details our methodological approach and data preprocessing steps. Sections 4 through 8 present our empirical findings across five analytical dimensions: thematic evolution, lexical salience, inter-textual similarity, semantic networks, and linguistic style. Section 9 discusses the broader implications of our findings for understanding institutional memory and strategic communication. Finally, Section 10 concludes with limitations and directions for future research.

2. Literature Review

The study of historical political texts has traditionally fallen within the domains of intellectual history, political theory, and discourse analysis. Scholars such as Berelson emphasized the importance of contextualizing utterances within their original speech acts [1], while Blei & Jordan highlighted the role of discourse in constructing power and knowledge regimes [2]. More recently, the "linguistic turn" in historical studies has foregrounded language not merely as a vehicle for ideas but as a constitutive force in shaping political reality [3]. Parallel developments in computational social science have begun to bridge the gap between qualitative depth and quantitative breadth. Early applications of content analysis provided systematic coding schemes but remained labor-intensive [4]. The rise of machine learning

and NLP has dramatically expanded the toolkit available to researchers. Topic modeling, particularly LDA [5], has been successfully used to trace ideological shifts in parliamentary debates [6], and presidential addresses. Similarly, word embedding models like Word2Vec have enabled the tracking of semantic change over time [7].

In the specific context of Chinese political discourse, several scholars have applied computational methods to official texts. For instance, Hamilton et al. used sentiment analysis on government work reports [8], while Hansen employed network analysis to map policy priorities in committee plenums [9]. However, these studies often focus on contemporary or routine documents, not on the rare, high-stakes genre of historical resolutions. Moreover, many existing analyses either implicitly or explicitly reference politically identifiable entities, limiting their generalizability or applicability in certain academic or regulatory environments.

Our work builds upon this foundation but departs in two key ways. First, we focus exclusively on the unique textual genre of historical resolutions—a form of meta-narrative that synthesizes past, present, and future in a single authoritative statement. Second, we adopt a strict de-identification protocol, replacing all proper nouns and ideologically loaded terms with neutral placeholders or generic descriptors. This allows us to preserve the analytical integrity of the text while ensuring compliance with content guidelines that restrict references to specific political actors or doctrines. In doing so, we align with emerging best practices in ethical computational social science[10], which advocate for responsible data handling when dealing with sensitive historical or political corpora.

3. Methodology and Data

3.1 Corpus Construction
Our corpus consists of three full-length historical resolutions issued by the Organization in 1945, 1981, and 2021, respectively. These documents were selected because they are universally recognized within the Organization's historiography as definitive statements on its past trajectory and future direction. The total corpus comprises approximately 45,000 Chinese characters, which were professionally translated into English by a team of certified translators

specializing in political and legal texts. All translations underwent rigorous back-translation and consistency checks to ensure fidelity to the original meaning while maintaining natural English syntax.

3.2 Preprocessing

All English texts were preprocessed using the spaCy NLP library (v3.5). Steps included:
Conversion to lowercase
Removal of punctuation, digits, and non-alphabetic tokens
Stopword filtering using an extended list that includes common political function words (e.g., "the," "of," "and," "in," "for," "to," "as," "by," "on," "with")
Lemmatization to reduce inflected forms to their base dictionary form
Custom entity masking: All proper nouns (including personal names, place names, and specific ideological terms) were replaced with generic labels (e.g., [LEADER], [HISTORICAL FIGURE], [CORE CONCEPT], [NATIONAL SYMBOL]). This step was performed manually by two independent annotators with 98% inter-coder agreement.

3.3 Analytical Techniques

We deployed a multi-layered analytical strategy:
Thematic Modeling: LDA with k=5 topics per document, optimized via coherence score.
Lexical Analysis: Word frequency counts, TF-IDF scoring, and word cloud generation.
Text Similarity: Cosine similarity computed on TF-IDF vectors of the entire documents and on per-topic distributions.
Semantic Networks: Co-occurrence graphs built from noun phrases within a 5-word window, visualized using Gephi.
Stylistic Analysis: Measurement of average sentence length, parse tree depth (as a proxy for syntactic complexity), and type-token ratio (TTR) for lexical diversity.
Sentiment & Stance: Application of the VADER sentiment lexicon and a custom-trained stance classifier to detect evaluative language toward historical events or policies.
All code was implemented in Python 3.10, with results reproducible via a public GitHub repository (anonymized for review).

4. Thematic Evolution across Resolutions

LDA revealed a clear progression in the dominant concerns of each resolution.

Resolution I (1945) centered on foundational legitimacy and internal cohesion. Its top topics included:
Topic 1.1: "Correcting deviations and unifying thought" (keywords: unity, deviation, struggle, correct path, ideological line)
Topic 1.2: "Lessons from early struggles" (keywords: experience, error, comrade, historical evaluation, self-criticism)
Topic 1.3: "Defining the core mission" (keywords: people, liberation, revolution, basic principle, historical task)
This reflects a post-crisis moment where the primary goal was to consolidate authority, standardize narrative, and eliminate competing interpretations of the Organization's early history.
Resolution II (1981) marked a decisive strategic pivot. Its themes shifted dramatically toward modernization and systemic renewal:
Topic 2.1: "Economic transformation" (keywords: reform, economy, development, productivity, market mechanism)
Topic 2.2: "Institutional innovation" (keywords: system, structure, democracy, legal framework, organizational efficiency)
Topic 2.3: "Reassessing historical periods" (keywords: evaluation, complex situation, historical limitation, balanced judgment, forward-looking)
Notably, this resolution introduced a more nuanced, less absolutist language when discussing past errors, signaling a move from moral condemnation to pragmatic learning.
Resolution III (2021) projected a civilizational-scale vision. Its dominant topics were:
Topic 3.1: "National rejuvenation" (keywords: great rejuvenation, historical mission, era, dream, national strength)
Topic 3.2: "Comprehensive governance" (keywords: system, modernization, rule of law, risk prevention, long-term stability)
Topic 3.3: "Global engagement" (keywords: world, contribution, community, peace, development path)
This resolution framed the Organization's role not just domestically but as a steward of a broader historical and global project. The language became more confident, assertive, and future-oriented.
Despite these shifts, a persistent undercurrent of historical consciousness ran through all three: each resolution explicitly positioned itself as the

inheritor and interpreter of a continuous legacy, using phrases like "summarizing historical experience" and "drawing wisdom from the past."

5. Lexical Salience and Keyword Dynamics

TF-IDF analysis identified terms that were highly distinctive to each resolution.

In Resolution I, top keywords included "comrade," "struggle," "line," "error," and "rectification"—reflecting an inward-looking, corrective posture. The vocabulary was characterized by binary oppositions (correct/incorrect, unity/deviation) and a strong emphasis on collective identity.

Resolution II saw the emergence of "reform", "openness", "economy", "science" and "technology" as signature terms. Words like "mistake" were replaced by softer terms like "setback" or "limitation." The lexical field expanded to include concepts from economics, law, and administration, indicating a broadening of the Organization's functional scope.

Resolution III introduced a new lexicon of grandeur and futurity: "era," "mission," "great rejuvenation," "Chinese path," and "systemic advantage." Notably, it also featured a higher frequency of abstract nouns denoting institutional qualities ("resilience", "cohesion", "legitimacy") rather than concrete actions.

Combined with the word clouds of the Three Historical Resolutions: Resolution I was dominated by words related to internal discipline; Resolution II by terms of change and development; Resolution III by symbols of national destiny and global stature.

The type-token ratio (TTR) also increased over time—from 0.32 in 1945 to 0.41 in 2021—suggesting growing lexical diversity and conceptual sophistication.

6. Inter-Textual Similarity and Continuity

Cosine similarity scores based on full-document TF-IDF vectors yielded the following pairwise distances:

Res I vs. Res II: 0.42
Res I vs. Res III: 0.38
Res II vs. Res III: 0.61

Table 1 presents only the similarity based on Levenshtein distance. This confirms that Resolutions II and III share a much closer discursive alignment than either does with the first. However, when we computed similarity based on topic distributions rather than raw words, the distance between Res I and the later resolutions decreased significantly (all >0.55), revealing a deeper structural continuity beneath surface-level lexical change.

For example, while the word "struggle" appears frequently only in Res I, the concept of overcoming adversity persists in Res II ("navigating complex challenges") and Res III ("persevering through trials"). Similarly, the theme of "unity" evolves from a call for ideological conformity to a celebration of systemic cohesion.

Table 1. Similarity Based on Levenshtein Distance for the Three Historical Resolutions

The Three Historical Resolutions	1945 Resolution	1981 Resolution	2021 Resolution
1945 Resolution	1.0000	0.0757	0.0633
1981 Resolution	0.0757	1.0000	0.0435
2021 Resolution	0.0633	0.0435	1.0000

This suggests that the Organization maintains a stable core narrative framework while flexibly adapting its terminology to suit changing historical circumstances—a hallmark of discursive resilience.

7. Semantic Networks and Entity-Topic Mapping

We constructed co-occurrence networks linking key entities ([LEADER], [HISTORICAL FIGURE]) with thematic keywords.

Through careful examination, one can gain a preliminary understanding of the network relationships between figures and themes in the Three Historical

In Resolution I, [LEADER] was tightly connected to "correct line," "struggle," and "unity," forming a centralized, hierarchical network. Other figures were primarily linked to "errors" or "deviations," reinforcing a clear dichotomy between orthodoxy and heresy.

Resolution II displayed a more distributed network. [LEADER] was associated with "reform", "pragmatism" and "opening-up", while other historical figures were evaluated more contextually—linked to both "contributions" and "limitations." The network showed greater density and reciprocity, reflecting a more pluralistic historical assessment.

Resolution III featured a multi-generational

network, with distinct clusters for different eras. [LEADER] was now connected to "strategic vision," "long-term planning," and "civilizational mission." The network emphasized succession and cumulative achievement rather than individual heroism or fault.

These evolving network structures mirror the Organization's shifting self-conception: from a vanguard defined by purity, to a reformist engine of progress, to a mature steward of historical destiny.

8. Stylistic and Rhetorical Evolution

Syntactic analysis revealed increasing complexity:

Average sentence length: 22 words (1945) → 28 words (1981) → 34 words (2021)

Average parse tree depth: 4.1 → 5.3 → 6.0

This indicates a move from declarative, imperative statements toward more complex, conditional, and explanatory prose—consistent with a shift from mobilization to governance.

Sentiment analysis showed a decline in negative valence (from -0.15 to -0.05) and a sharp rise in positive future-oriented language (e.g., "will achieve," "is destined to"). The stance toward history also evolved from judgmental ("serious mistakes") to reflective ("valuable lessons").

9. Discussion: Institutional Memory as Adaptive Strategy

Our findings support a model of institutional memory not as static commemoration but as an active, adaptive strategy. The Organization uses historical resolutions to perform three simultaneous functions: legitimation, learning, and projection. Each resolution reinterprets the past to justify the present and authorize the future.

The lexical and thematic shifts reflect responsiveness to external pressures (e.g., economic globalization, technological change) and internal needs (e.g., generational transition, bureaucratic maturation). Yet the persistence of core motifs—unity, historical mission, self-correction—provides narrative stability.

This dual dynamic of change and continuity enables long-term resilience without ideological rupture. It exemplifies what scholars call "path-dependent adaptation" (Pierson, 2000): building new strategies atop established foundations.

10. Conclusion

This study demonstrates the power of NLP to uncover deep structures in historical political texts while respecting content constraints. By analyzing three historical resolutions through a multi-method lens, we traced a century-long arc of strategic evolution grounded in enduring principles. The Organization's discourse has grown more complex, inclusive, and future-oriented, yet remains anchored in a coherent narrative of historical purpose.

Limitations include reliance on translation and the inherent abstraction of de-identification. Future work could apply similar methods to resolutions from other cultural contexts, enabling cross-national comparisons of institutional memory practices.

Ultimately, this research contributes to a broader understanding of how large organizations use language to navigate time, manage crisis, and sustain legitimacy across generations.

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