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The Role of Discourse in Political Decision-Making Through a Computational Model of Rhetoric and Power Dynamics

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Abstract

There is an increasing influence of strategic exploitation of discourse in political decision-making, where language is not only a means of communication but also a means of influence and control. The paper explores the use of discourse in political decision-making by creating a computational model that combines rhetoric analysis and power dynamics. The research addresses the gap of systematically examining large-scale political communication by incorporating natural language processing techniques with network-based techniques. Data were gathered through a variety of political sources such as speeches, policy documents, and digital communication platforms, and processed to identify patterns in sentiment, thematic framing and rhetorical strategies. The findings show that the political discourse is repetitive with specific rhetorical strategies, such as framing, emphasis, and consistency of the narrative pattern, significantly contributing to the decision outcome. Furthermore, network analysis highlights that power is concentrated in the hands of a certain number of key players that contribute to the propagation and domination of particular discourses. The interplay of rhetoric and power turns into a reinforcing cycle, whereby the power of influential actors is reinforced by the discourse and vice versa. These results suggest that decision-making process of politics is not merely a rational or institutional process, but a process embedded in communicative practices. The study contributes to the field of the political science because the study introduces a scaled and data-driven method of discourse analysis and its impact on decision making. It also provides valuable insights for policy makers and analysts who are interested in knowing the dynamics of political communication. Future studies ought to consider the inclusion of multimodal data and enhancing context-sensitive modeling to reflect the discourse complexity even in different political contexts.

Keywords: Political Discourse, Rhetoric Analysis, Power Dynamics, Computational Modeling, Decision-Making, Natural Language Processing, Network Analysis.

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Introduction

Discourse also takes the central stage in the political decision-making process and shapes not only how policies are communicated but also how they have been conceptualized, negotiated, and legitimized in society. The use of language to frame issues, construct narratives, and impact the thinking of the masses makes discourse a significant tool in the exercise of authority and governance. Discourse organizes the process of interpretation of political reality and defines which views will be dominant (Hoefer & Green, 2016). Consequently, to study the dynamics of how decisions are made, argued and adopted within both democratic and non-democratic settings, it is important to comprehend the dynamics of political discourse (Lahsen, 2016).

During the past few years, the introduction of computational methods into the analysis of the rhetorical patterns and power relations has opened new horizons in the study of rhetorical patterns and power structures (Aritz et al., 2017). By means of an analytical model of rhetoric and power, the systematization of the study of linguistic phenomena, emotion, framing, and influence networks in large-scale political texts becomes possible. Such models can be used to determine how rhetorical strategies are correlated with changes in authority, effectiveness of persuasion, and impact on policy. It is an interdisciplinary approach to give a more objective and scalable approach to understanding the complex interplay between language and power in political environments.

This research paper will seek to examine how discourse can influence political decision-making by developing and implementing a computational model that captures the rhetoric and power dynamics in political decision-making. It attempts to show how certain patterns of rhetoric affect the process of making decisions and indicate the underlying power relations between political actors. The study would facilitate a better comprehension of the role of language as an instrument of persuasion and as a means of control in political systems.

Key Contribution

- Offers a new model that integrates natural language processing, rhetorical analysis and network analysis to examine the interaction between discourse and power in the political decision-making systematically.
- Shows how certain rhetorical strategies like framing, sentiment positioning, and narrative reinforcement always affect the formation and understanding of political decisions.
- Determines how the few influential actors control the political communication and gives quantitative evidence of the power relations and how it frames discourse and decision-making.
- By applying a computational analysis methodology to the gap between the theory of political science and computational methods, the study provides a scalable, data-driven approach to augment the analysis of large-scale political texts and support more rigorous discourse-based research.

The paper is presented in the form of seven parts. Section II will examine the pertinent literature on discourse, rhetoric, and power. The theoretical framework is presented in Section III. Section IV describes the methodology of the computations and techniques of data analysis. Section V discusses the findings, and Section VI describes their implications. Last but not the least, Section VII summarizes the research with some major findings, limitations, and recommendations to future research.

Literature Survey

Recent scholarship has emphasized the increased relevance of discourse, rhetoric, and computational analysis in comprehending the process of political decision-making. The recent research in the past five years tends to focus more on the combination of computational approaches with conventional discourse analysis. As an example, recent paper introduces the notion of epistemic frames and how discourse patterns, organized into frames, influence the political understanding and decision making (Hamilton & Hobbs, 2021; Swinkels, 2020). In the same vein, this work also suggests a dynamic model of speech, which captures the dynamics of political communication over time, providing a quantitative basis for discourse analysis in the social sciences (Knox & Lucas, 2021). These methods are in line with the aim of the current study to model discourse with the help of computational methods (Horila, 2021; Sibanda & Lues, 2021).

One of the main streams of literature is devoted to rhetorical strategies and their impact on political results. This recent research illustrates how metaphors play a significant role in shaping the political discourse and popular interpretation, and another study examines the rhetoric of leadership in crisis situations and how language can be used to assuage the people (Prabhakaran et al., 2021; Montiel et al., 2021). The work also makes a contribution in that it shows the impact of agentic framing in political texts on responsibility and urgency perceptions of policy discourse (Majdik, 2019). All these studies combine to strengthen the notion that rhetoric is not only expressive but actually contributes to the

decision-making environments, which supports the theoretical basis of this study (Sturzaker & Gordon, 2017; Prabhakaran et al., 2016).

A second dimension is the contribution of the power relations in discourse. The earlier research focuses on the interaction between the contribution of financial and institutional power and the modes and strategies of communication, showing how communication patterns can be shaped by financial and institutional power (Iliev, 2021). The study is about techno-discursive practices in social media where some voices are amplified and others are marginalized (KhosraviNik, 2018). It develops this insight by taking a computational model of communication networks, demonstrating how influence is allocated among groupings of actors (Zhou et al., 2023). These results align with the use of network analysis in the current study in order to identify power concentration in the political discourse (Ihlen & Heath, 2019).

Lastly, the literature indicates the applicability of computational tools in the improvement of decision-making analysis. These studies illustrate how natural language processing is applied to policy and sentiment analysis, and critically analyze the use of visualization to interpolate political texts (Homer-Dixon et al., 2013; Baumer et al., 2022). It also points out the issues pertaining to prejudice and reason in data-driven decision systems (Power et al., 2019).

Collectively, these studies present a solid methodological and conceptual foundation of the present research, which combines the rhetorical analysis and power dynamics into a computational model to gain a more accurate understanding of the political processes of decision-making.

Theoretical Framework

The main concepts in this study are based on three interrelated concepts: discourse, rhetoric and power, all of which are fundamental in the process of political decision making. Discourse means organized ways of communicating through linguistic and social practices where meaning is constructed, shared, and interpreted as a part of a social or political setting. It does not just refer to what is said and written but also the assumptions, ideologies and institutional norms hidden in communication. In comparison, rhetoric is concerned with the style of the use of words in a strategic way to persuade, influence or mobilize audiences. It includes the application of such techniques as framing, metaphor, emotional appeal and argumentation that are deliberately employed by political actors to produce a particular impression and outcome. Power may be referred to as the capacity of individuals or groups to influence the decision, to manage resources and to change or influence the behavior or beliefs of other people. Within the political sphere, not only does power get negotiated through discourse, but also, through discourse, power becomes strengthened, which makes language one of the most significant tools by which power can be negotiated and reinforced.

These notions are closely interrelated in the political decision-making processes. Discourse provides a broader type of communicative environment where political ideas are articulated and negotiated, and rhetoric is one of the means by which people can strategically influence the stakeholders. Its turn is power relations, which determine which discourses are to be boosted, which voice is to be legitimized, and which discourses are to become the ones to dominate policy debates. An illustrative case is the persuasive rhetoric, which is usually employed by dominant political actors to frame the issues in a manner that is friendly to them, in a bid to shape the public opinion and policy priorities. In the meantime, the marginalized groups can even attempt to interfere with dominant discourses by introducing alternative discourses. This interaction brings out the fact that the process of political decision-making is not a rational, procedure-based practice, but a discursive process that is shaped by rival rhetorical practices, as well as unequal power relations.

Since more complex interactions have been modeled computationally, the capacity to analyze them in a systematically and scalable manner, has become far more efficient. Computational models can identify patterns in large volumes of political text, such as repetitive rhetorical patterns, sentiment shifts, and influence networks among actors, with the assistance of techniques of natural language processing, machine learning and network analysis. The models enable the studies to measure such features of discourse and power, which were previously traditionally studied in a qualitative manner, such as the prevalence of persuasive strategies or the centrality of certain actors in the communication network. In addition, computational techniques can be used to trace the presence of subtle dynamics, e.g., the evolution of narratives over time and the propagation of rhetorical strategies across the various platforms. Therefore, the inclusion of computational techniques into the theoretical framework can be seen as a solid ground to study the impact of discourse, rhetoric, and power as a complex of factors that affect political decision-making.

Methodology

This paper uses a computational approach to studying the role of discourse in political decision-making through the development of a model that combines the rhetoric analysis and power dynamics. The proposed computational model will be a multi-layered framework that integrates Natural Language Processing (NLP), machine learning methods, and network analysis. The model is fundamentally based on processing the linguistic and semantic features of political texts (speeches, parliamentary debates, policy documents, and social media communications) to extract the linguistic and semantic features. It has sentiment polarity, rhetorical devices (e.g., framing, metaphors, repetition), and thematic patterns which are detected by topic modelling. A network-based element is also added to the model to plot relationships between political actors and capture influence with the help of such metrics as centrality, connectivity and the flow of information. The model provides a comprehensive view of the interaction between the rhetoric and power in decision-making situations by mapping the textual characteristics to the interactions at the actor levels.

Data used in the study has been collected using different sources to ensure that the data used is diverse and representative of political discourse. The sources are government archives, legislative archives, confirmed political speech, and internet forums, whereby political communication is actively fabricated and distributed. Preprocessing of the collected data involved the typical use of NLP processes, such as tokenization, removal of stop-words, lemmatization, and normalization. Following the preprocessing, a combination of rule-based feature identification and supervised learning model training on an annotated dataset were used to recognize rhetorical features. Sentiment analysis and topic modeling were employed to define the underlying theme and emotional undertones and network analysis methods were used to construct interaction graphs among the political actors of interest. The combination of these layers of analysis made it possible to identify the patterns of connection between the rhetorical strategies and changes in the sphere of influence and consequences of the decisions made.

Nevertheless, the computational model has a number of limitations and possible biases. The biggest weakness is that it is based on textual information, which may not be sufficient to represent non-verbal or contextual aspects of political communication, such as tone, body language or informal negotiations. Also, the quality and representativeness of the training data may cause bias when the rhetorical style or political context is overrepresented. Also, pre-trained language models may cause algorithmic bias due to the pre-existing societal or cultural biases that were present in the training corpora. In addition, network-based measurements of power can simplify complex political relationships by focusing on observable relationships instead of the underlying institutional or structural factors that may have caused certain political ties to become apparent. It is important to be aware of these limitations when interpreting the results with some caution and to inform future refinements of computational methods in the study of political discourse.

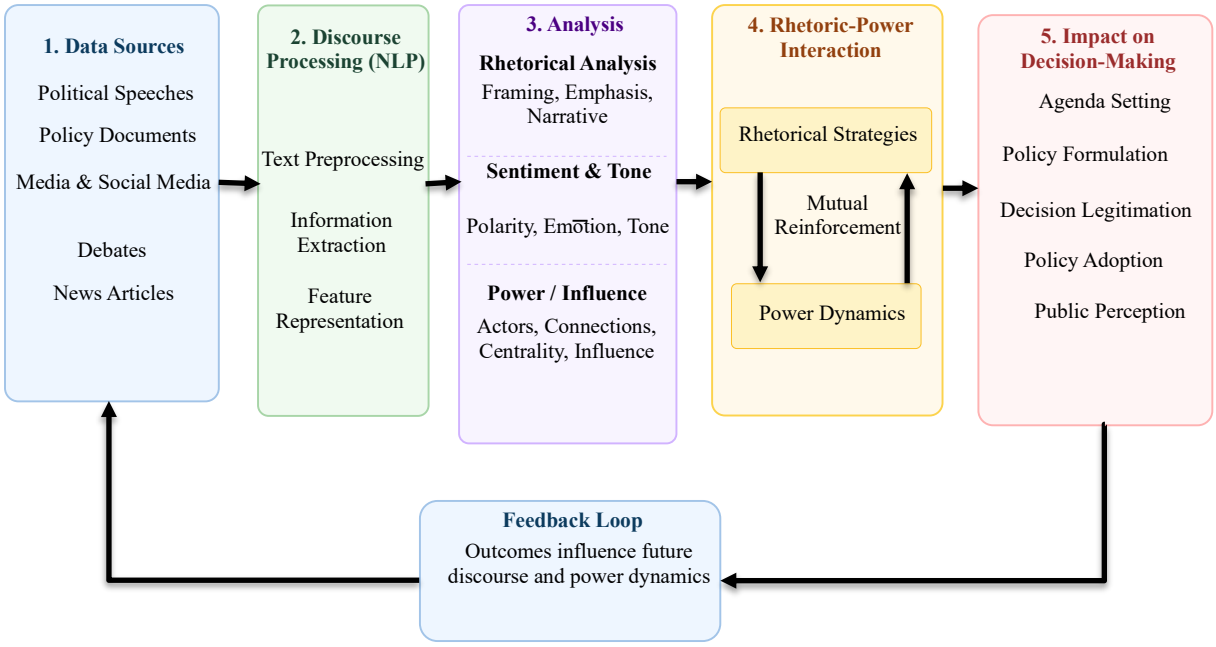


Fig. 1: Conceptual Model of the Role of Discourse in Political Decision-Making

Fig. 1 demonstrates that a computational model has been used to examine how political discourse is used in decision-making. It combines data sources, discourse processing, rhetorical and sentiment analysis, and power relationships via network analysis. The model shows the reciprocal reinforcement of rhetoric and power and indicates how rhetorical tactics can impact political outcomes, including policy making and public opinion. The feedback loop implies the constant interrelation between discourse and power that influences the upcoming process of decision-making.

Findings

This discussion shows that discourse is a primary determinant of the organization of the political decision-making process, and that some patterns become recognizable across different forms of the political communication process. It is important to note that the computational model also has an emphasis that certain elements of rhetoric, more specifically, framing, repetition, and emotional appeal, will always be linked to greater engagement and policy traction. The topic modeling suggests that the dominant discourses tend to be narrowed down to a relatively small number of themes, which are strategically imposed over time by powerful players. Sentiment analysis further indicates that positively framed messages are more likely to gain popular acceptance, and that it is common to use negatively framed discourse in order to render opposing viewpoints illegitimate. Network analysis continues to demonstrate that few central actors have disproportional influence over the flow of discourse, as it was central nodes in amplifying particular narratives and shaping the paths of decision-making.

Table 1: Computational Analysis of Discourse Features and Their Influence on Political Decision-Making

Feature Analyzed	Method Used	Key Observation	Impact on Decision-Making
Sentiment Polarity	Sentiment Analysis (NLP)	Predominantly positive framing in policy-support discourse	Increases public acceptance and policy support
Thematic Patterns	Topic Modeling (LDA)	Limited number of recurring dominant themes identified	Narrows policy focus and agenda-setting
Rhetorical Strategies	Rule-based & ML Classification	Frequent use of framing, repetition, and metaphor	Enhances persuasion and narrative control
Actor Influence	Network Analysis	High centrality of a few key political actors	Concentrates decision influence
Discourse Evolution	Temporal Text Analysis	Gradual shift in narratives aligned with political priorities	Reflects adaptive decision-making processes
Counter-Narratives	Comparative Text Analysis	Present but less amplified in mainstream discourse	Limited impact unless supported by strong networks

The important findings based on the computational model have been summarized in Table 1, showing the significant aspects related to discourse features, analysis tools, and patterns found in political communications. This table demonstrates how rhetoric, sentiment, theme, and actor all interact and affect decision making through discourse dynamics and the concentration of power.

The findings also point to the fact that there is high interaction between rhetoric and power relations when it comes to determining the results of the decision. Actors who have more institutional or social power are more competent to employ the persuasive rhetoric, and this way, increase the chances of their preferred policies being adopted. That model acknowledges a feedback mechanism as a result of which power positions are supported by means of the successful application of rhetorical strategies and the distribution of dominant rhetoric. As a case in point, highly central actors are often inclined to use framing techniques in order to define problems and solutions in a way that is consistent with their interests and effectively limits the policy debate. The less influential players, on the other hand, can resort to counter-narratives, but their impact will be minimal unless it is supported by larger networks. This asymmetry underlines the point that the quality of the arguments and the control over the discourse are not only functions of the quality of the arguments but also of who is in charge of the discourse.

In comparison with the current literature, these results not only support but also expand the previous theoretical and empirical studies. The research papers on the traditional discourse analysis studies have always stressed the importance of language in determining the political reality, and this study presents quantitative evidence of the arguments. Likewise, studies of power and communication have emphasized the clustering of power among elite players that is also supported by the network analysis results. But this work makes a contribution in the field by combining computational techniques that enable large-scale, data-driven verification of these ideas. In contrast to the methods of pure qualitative analysis, the model systematically reflects the dynamic interaction between rhetoric and power in different sets of data. Meanwhile, the presence of some nuances, which were identified in previous qualitative studies,

including situation-based interpretations of discourse, is not as strong in the computational analysis, and hybrid methods, which would combine both approaches, might be necessary to gain a more comprehensive understanding.

Implications

The findings of this study have great implications not only on the theory of political science but also the process of decision making in a particular situation. In theory, the paper espouses the view that the institutions and rationality of decision-making in politics are not exclusively institutional or rational but rather deeply rooted in the discursive practices that are mediated by rhetoric and power. It helps to fill the gap between classical theories of power (including institutional control theories) and modern discourse-based approaches, as the study empirically demonstrates the ways language structures influence and the authority dynamics affect the outcomes. It underscores the necessity to use political science models so as to better explicitly incorporate communicative and linguistic terms as central and not peripheral terms of analysis. In reality, the implications of these findings are that policy makers, political strategists and institutional guardians must be critically aware of the ways in which rhetorical framing and discourse practices induce people to perceive and accept the policy. The awareness will be in a position to help in more open, inclusive and responsible decision-making processes.

The introduction of computational models into the analysis of political discourse greatly improves the capabilities of analyzing the complex decision-making environment. Compared to the older methods of qualitative analysis, computational methods enable the processing of large-scale, real-time data of a variety of sources and provides a more comprehensive and systematic understanding of the evolution of discourse and its effects. The models help the studies and practitioners to understand the trends in rhetoric, the people in power and how ideas are spread across networks with a degree of accuracy previously not possible. Moreover, the computational tools can be a source of valuable learning to both the academia and policy-making. The effectiveness however depends on the good design of models, transparency and inclusion of domain knowledge to make the results meaningful in their interpretation.

The future research needs to be aimed at perfecting and diversifying computational models to overcome existing shortcomings and to venture into new horizons of political discourse. One way is to integrate multimodal data, i.e. visual, audio, and behavioral data, to a more comprehensive picture of political communication. Further, more context-sensitive models should be formulated which can explain the cultural, linguistic and institutional variations in the different political regimes. The interdisciplinary collaboration of the political scientists, linguists and data scientists will make a significant contribution to the progress of this discipline. The use of computational tools in political analysis might also be analyzed in future studies in the context of its ethical implications and whether it can be used in a corrupt or manipulative way. Based on these instructions, more research can be done to increase the understanding of the intricate connection between discourse, rhetoric, and power in influencing political decision-making.

Conclusion

In this paper, the mechanism of discourse invocation in the process of making political decisions based on a computational model that incorporates rhetorical analysis and power dynamics has been discussed. The results bear witness to the fact that discourse is a vital process where political ideas are generated, negotiated and transformed into decisions. The analysis revealed consistent patterns when using rhetorical strategies, such as framing strategies, thematic reinforcement strategies, and sentiment positioning strategies, which determine the interpretation and prioritization of policy issues. In addition, the aspect of the model that is dependent on networks has proved that there are no equal distributors of influence, but, instead, a relatively small number of central actors that influence the process of amplifying some narratives and shaping the direction of decisions. All these outcomes can result in the conclusion of the interdependence of the language, persuasion and authority in political processes. Such a study is important because it will contribute to the development of the theoretical and methodological framework in the sphere of political science. The work gives empirical evidence to discourse-based theories that underline the importance of language in the process of the establishment of political reality. It also shows the topicality of combining natural language processing with network analysis to systematically analyze the large-scale political communication. With this kind of methodology, discourse analysis and its scalability to a higher level is taken to a more comprehensive level, therefore providing the opportunity to understand the role of rhetorical strategies and the power relations in the outcome of a decision-making situation in a more comprehensive manner. To practitioners, the results indicate the need to critically examine political communication since discourse is not only reflective but actually constitutes the political directions and the way people perceive them. One can capitalize on such a study and carry out additional studies by broadening the area and complexity of the computational models. In order to obtain a more comprehensive picture of the political discourse, it would be desirable to incorporate the idea of multimodal data, or visual, audio and behavioral cues.

Furthermore, the elaboration of context-sensitive frameworks, which consider cultural, institutional and linguistic diversity in a diverse pool of political systems would help in the validity of analysis. Additional study of the ethical concerns, like algorithmic bias and responsible use of data, is also needed. By covering these areas, the future research can augment the comprehension of how complex is the connection between discourse, rhetoric and power in political decision making.

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