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Political persuasion in international affairs: A computational sociolinguistic inquiry utilizing historical analysis of US Congressional rhetoric from 1873 to 2017

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ABSTRACT

Negative sentiment, when used in the context of persuasion, can play a significant role in the effectiveness of spoken rhetoric. In this paper, sentiment analysis of publicly delivered Congressional speeches on relevant foreign policy legislation and events will be the center of exploration, evaluated through historical trends of that corresponding period. This evaluation element will be key in determining whether or not negative sentiments were successful and how overall sentiment in a speech evolved over one hundred and fifty years through computational sociolinguistic analysis. The paper explores the increase in negative sentiment by drastic global events, illustrating how negative sentiment became a necessity for significant foreign policy action.

KEYWORDS: Linguistics, political science, sentiment analysis, United States history

Introduction

Negative sentiment is “expressing no” as a thought, idea, or opinion. This paper will explore Congressional rhetoric regarding foreign policy and analyze how exactly negative sentiment use has evolved since the 43rd Congress in 1873 to 2017. The goal of this paper is to determine the most effective sentiments when attempting to achieve direct action within Congress. Specifically, using pragmatics as an independent factor, exploring the evolution of Congressional rhetoric regarding foreign policy and international diplomacy from 1873 to 2017 will help bridge the gap between the intent of the speaker when using negative rhetoric and the impact on the audience. This will be expressed by evaluating historical trends and events of that corresponding period. This element of the evaluation will be key in determining whether or not negative sentiments were successful and how the use of negative rhetoric evolved throughout one hundred and fifty years.

Materials and methods

One effective approach to understanding these changes is through the analysis of congressional speeches. This overview outlines a methodological approach to analyzing Congressional speeches spanning over 150 years. The primary goal is to track shifts in political rhetoric and government policy within a specific area, with a particular focus on negative sentiment. The chosen dataset should encompass congressional speeches from a wide time range, covering at least 150 years. It should also reflect the diversity of voices in American politics. Stanford University’s comprehensive database of speeches ranging from the 43rd to 111th Congress will be used to determine the most effective rhetoric when discussing controversial political issues through computational sentiment analysis. Given the breadth and depth of the extent to which the records encompass, this paper will focus on the development and rhetoric surrounding foreign policy. Following the process of manual annotation, the study explores fifteen speeches across six time periods of US Congress speeches ranging from 1873 to 2017. The speeches were classified within the data set as foreign policy-related, so the study was conducted using those

speeches. The topic of foreign policy was selected to track a larger trend of historical development globally and the significant role the United States has often played in international affairs and global development. Data points will be identified through the use of Amazon Comprehend using the API operation Detect Sentiment. After evaluating the speech in its entirety, the API returns the following values: positive, negative, mixed, and

neutral, justified through a Sentiment Score that articulates the probability of the sentiment of that speech. From each period, 30 speeches will be randomly selected for evaluation. The speech will decisively be classified as negative if the Sentiment Score is above 90%.

Accessible data helps to obtain a more balanced and realistic understanding of the changes over time. The Stanford dataset is publicly available, so anyone can replicate this project. To complete the study, this process is implemented towards common phrases and expressions used in Congress during each corresponding time frame. This step is vital to understanding the historical context and prevailing political climate, allowing for comparative linguistic analysis with standardized results. Common phrases serve as a benchmark against which the speeches are compared. This narrow focus ensures that the research remains well-defined and provides a clear framework for assessing changes in discourse over time, so it can be operationalized. Every speech in the dataset is carefully annotated to mark words and phrases with negative connotations. This step ensures that no aspect of the data is overlooked, and it serves as the foundation for further analysis. Analyzing congressional speeches over 150 years presents a unique opportunity to track the evolution of political discourse and government policy. By focusing on negative sentiment and operationalizing the analysis through careful annotation and categorization, researchers can uncover meaningful insights into changes within a specific area of politics and government policy. Emphasizing accessibility by considering a diverse range of voices ensures that the research captures a more



complete picture of the historical shifts in American political rhetoric.

Results

The data spans several Congresses, evaluating the average length of speeches and the prevalence of negative sentiment within them. The study begins with the 43rd to the 56th Congress, where speeches averaged 257 words in length. This translated to 33.33% of the speeches being categorized as 'negative', totaling 10 out of 30 speeches that were identified as negative by the API and had a Sentiment Score, or probability of accuracy, over 90%. The subsequent Congresses continued to reveal notable shifts.

The 56th to 71st Congress saw a decrease in the average length of speeches to 210 words, but a significant increase in negative sentiment. Noting the length, 16 out of the 30, or 53.33% of randomly selected speeches were identified as negative by the API and had a Sentiment Score, or probability of accuracy, over 90%. As the analysis progresses through different Congressional periods, overall sentiment continued to be more and more negative, with some fluctuation, becoming distinctly evident. The 71st to 86th Congresses displayed an increase in the average length of speeches to 232 words and a further rise in negative sentiment. This resulted in 63.33% of speeches being labeled 'negative', equivalent to 19 out of 30 speeches. The 86th to 96th Congress showcased a continued increase in the average length of speeches reaching 357 words. The negative sentiment constituted 70% of speeches, with 21 out of 30 speeches considered 'negative.' Moving to the

subsequent Congresses, from the 96th to the 106th, the average speech length remained high at 335 words. The negative sentiment saw a slight decrease amounting to 60% of speeches being 'negative', or 18 out of 30 speeches. The analysis culminates with the 106th to the 114th Congress, where the average length of speeches expanded to 403 words. This elevated the 'negative' classification to 80%, encompassing 24 out of 30 speeches. The trends discerned from this comprehensive analysis suggest a pattern of evolution in both speech length and negative sentiment across the analyzed Congressional periods. There appears to be an overall increase in the average length of speeches over time, progressing from 257 words in the earlier Congresses to 403 words in the later periods. This expansion could signify a growing depth or complexity in the topics covered or a change in the style of communication employed by speakers over the years. Simultaneously, there is a consistent rise in the prevalence of negative sentiment in the speeches across the Congressional eras. The increase in the usage of negative language, from 33.33% to 76.66% percent, illustrates a significant shift in the tone and emotional content of political speeches. The escalation of speeches deemed 'negative' follows a non-linear trajectory across the different

Congressional periods, with notable fluctuations. However, there is a discernible upward trend, with the proportion of 'negative' speeches, in the most recent, signaling a substantial transformation like political discourse over time, which is revealed through the US's isolationist shift.

Congress	43rd to 56th	56th to 71st	71st to 86th	86th to 96th	96th to 106th	106th to 114th
Negative sentiment (%)	9/30 ~ 30%	16/30 ~ 53.33%	19/30 ~ 63.33%	21/30 ~ 70%	18/30 ~ 60%	23/30 ~ 76.66%
Average words per speech	257	210	232	357	335	403

Figure 1: The comparative development of negative sentiment across Congresses

Discussion

The analysis of congressional speeches from the 43rd to the 114th Congresses presents a compelling narrative of the evolving nature of political rhetoric in the United States. The quantitative data depicting an escalation in the use of negative sentiment within these speeches signifies a profound transformation in the tone, content, and perhaps the underlying dynamics of political communication over nearly a century.

The progression of increasing negativity within congressional speeches suggests a multifaceted correlation with the historical context of each era. To fully interpret this trend, it is crucial to dissect the historical events, societal changes, and political shifts that coincided with each period. Beginning with the 43rd to the 56th Congress, which occurred from 1873 to 1901, the speeches were characterized by a relatively low prevalence of negative language regarding foreign policy, with only 30% of speeches considered 'negative.' This post-Civil War era was marked by few foreign crises and thus likely required less negative sentiment to achieve tangible action in

Congress. Commencing with Grant's presidential administration, the president's foreign policy was largely successful except for the attempt to annex San Domingo. Due to the president's domestic focus on rebuilding after the division of the Civil War, there was little negative sentiment regarding foreign policy. Towards the end of this era, to annex Hawaii and to mitigate the impact of the Cuban War for Independence, the speeches marked as negative were to invoke the necessary emotion to gain Congressional approval or disapproval for these events. Congress was forced to declare war in 1898 to gain control of Puerto Rico, Cuba, and the Philippines in the Spanish-American War. This historically correlated with negative speeches selected randomly from the dataset. Transitioning to the 56th to the 71st Congress, which was from 1901 to 1929, the tone shifted noticeably with a marked increase in negative language. This commenced with the 1904 Roosevelt Corollary, which served as an extension of the Monroe Doctrine and reaffirmed the US's control and influence over Latin America. Furthermore, while nonviolent, the introduction of dollar



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diplomacy in 1909 to mitigate economic instability in poor countries was a new implementation of foreign policy and sought to help the US assert dominance globally. Finally, the construction of the Panama Canal likely served as a positive foreign policy effort and prevented further negative sentiment perpetuated by Congress. This helps reaffirm the results of 53.33% of speeches being classified as negative. Next, during 71st to 86th Congress, which occurred from 1930 to 1960, was marked by significant societal and political upheavals. This period coincided with the aftermath of World War II, the beginnings of the Cold War, and a growing sense of global ideological conflict. The heightened negative sentiment in speeches is likely attributed to the escalating international tensions, ideological differences, and the fervent anti-communist sentiments prevalent in the United States during this time. Furthermore, World War 2 necessitated decisive action in response to Japan's bombing of Pearl Harbor, and an effective method of increasing military spending and allocating resources was through negative sentiment.

Particularly with President Franklin Delano Roosevelt's executive order and "Day of Infamy" address, acquiring the full might of the US military required more negative sentiment to ensure such decisive action from Congress. Furthermore, the xenophobia towards Japanese Americans as well as the mandate of internment camps, as well as the suspension of civil liberties, was heavily motivated by negative sentiment from Congress. Finally, as World War 2 came to an end, the growth of communism globally and the US's efforts to counteract this spread through economic and military efforts also required negative sentiment to enact, such as the Marshall Plan and increased CIA involvement globally. Through the next Congress, which spanned from 1959 to 1980, the Civil Rights Movement, the Vietnam War, economic fluctuations, and increased partisan polarization served as characterizing events. These major events and societal shifts are mirrored in the language of congressional speeches, with an increasing prevalence of negative sentiment.

The societal divisions, the fervor of social movements, and the polarized political environment likely contributed to the use of more divisive, critical, and emotionally charged language by political figures. As the nation grappled with profound changes and challenges, the language employed by politicians in Congress seemed to reflect the intensifying societal divisions, polarizations, and ideological conflicts, historically corroborating the negative sentiment distribution of 70%. With the 96th to 106th Congress, the percentage of negative sentiment consisted of 60% of speeches, decreasing slightly to accommodate President Ronald Reagan's foreign policy. While significant negative sentiment remained amidst tensions with Russia and the Iran-Contra scandal, Reagan signed the INF treaty with Michael Gorbachev, the first diplomatic agreement regarding arms control and nuclear de-escalation. With the disintegration of the Soviet Union in the 1990s, the Persian Gulf War likely necessitated further negative sentiment in Congress to affirm, but largely continued the course of this political era. Finally,

with the 106th to 114th Congress, from 2000 to 2017, the language became sharper, more emotionally charged, and increasingly adversarial, potentially in response to the shifting dynamics and heightened tensions within American society. Moreover, as media landscapes evolved, the impact of the press and later, digital platforms, might have amplified the visibility and influence of political speeches. Politicians might have adjusted their language to capture attention in an increasingly competitive media environment, potentially contributing to the escalation of negative sentiment in speeches as a strategy to engage, provoke, or appeal to their audiences.

The heightened political polarization amidst the 2008 recession, President Obama's healthcare policies, and the rise of populism with the emergence of President Donald Trump increased negative sentiment in Congress to 76.66%. The trend towards increasing negativity in congressional speeches also reflects the changing nature of political communication strategies. Politicians might have chosen to employ negative language deliberately to provoke emotional responses, rally support from their base, or express strong disagreement or disapproval in an increasingly competitive political environment. The correlation between the rising negativity in congressional speeches and United States history underscores the intricate relationship between political discourse and the broader socio-political landscape. The language used by political figures doesn't merely describe political climate; it also influences and shapes public opinion, reflecting the shifting sentiments and values within American society. The gradual increase in the prevalence of negative language in congressional speeches mirrors the complexities and challenges of each era, demonstrating how language in politics can be both a response to and a catalyst for societal and political changes. It not only reflects the prevailing sentiments but also serves as a tool to influence and mobilize public opinion and political support, most effectively through negative sentiment. The interpretation of the data on congressional speeches from the 43rd to the 114th Congresses showcases a clear trajectory towards greater negativity in political language. Understanding this correlation is fundamental to comprehending the complexities of political communication and its impact on American democracy and public discourse.

Conclusion

The quantifiable data underscores a consistent and pronounced trend: a progressive rise in the utilization of negative sentiment within these speeches over almost a century. This evolution in the tone and content of political rhetoric bears significant correlations with the historical, societal, and political context of each of the six Congressional eras discussed in this study from 1873 to 2017. The findings portray a vivid reflection of American history and the shifting socio-political dynamics. From post-war reconciliation to Cold War tensions, civil rights movements to the Vietnam War, and the rise of digital media, each era brought its distinct challenges and changes. These historical junctures influenced the language used by political figures, with the prevalence of negative language in speeches



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increasing over time. The progression from a predominantly cautious and conciliatory tone to an increasingly adversarial and emotionally charged language reflects the nation's changing temperament. The language employed in these speeches mirrors the societal divisions, ideological conflicts, and polarizations prevalent in the United States throughout these periods. This is a distinct sign of political polarization in the United States. Moreover, the data demonstrates a clear indication of the strategic use of language in political communication, with politicians potentially adjusting their rhetoric to resonate with evolving media landscapes and capture the attention of their audiences. This analysis underlines the intricate relationship between language, politics, and historical context.

However, this analysis does not define the progression of the United States as due to the study's limitations, only 30

speeches per era, selected randomly, could be analyzed. The significance of this correlation can't be understated—it elucidates not only the evolving nature of political communication but also its role as a reflection and influencer of public sentiment. Understanding this correlation is crucial for a deeper comprehension of the dynamics of political discourse and its impact on American democracy and public perception. The evolution of political rhetoric encapsulated in these congressional speeches serves as a mirror to the nation's history, providing profound insights into the ever-changing landscape of American politics.

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