

Corpus based Discourse History Approach

--Take the Public Climate Speeches by Biden and Harris as Examples

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Abstract

This article analyzes the corpus of public climate speech released by Biden and Harris with Discourse-Historical Approach (DHA), to find out the climate-discourse strategies employed by the present American leaders, and to study how the US government see the climate issues. This paper find that the US government pretends to attach great importance on improving climate, but they do it just for meet their political and economic goals. When there is a contradiction between climate and economy, the US government underestimates the former. Besides, this study also expands the usage of DHA that has been applied to analyze discrimination in various situation.

Keywords

Climate; Discourse; Discourse-Strategies; Discourse-Historical; Approach; Corpus; Approach.

1. Introduction

Climate change is a topic for all. This year, the Ministry of Foreign Affairs of China announced eight countermeasures against the US Congressman Pelosi's visit to Taiwan. Among them, the "suspension of US China climate change talks" has aroused unprecedented attention from the community on climate issues. The DHA explains the basic and research characteristics of sociolinguistics, pragmatics and text linguistics, and it shows the influence of critical theory, history, argumentative theory and political linguistics.

Previously, the main way to study the political discourse of national leaders is utilizing critical discourse analysis and post structuralism theory to analyze mainstream newspapers, parliamentary debates, and relevant policy documents, and many researchers tended to make theoretical comments and case studies. Therefore, there was insufficient research on the historical background of such texts. Since language is ideological and plays a role in shaping the society, DHA hopes to reveal the ideological significance behind the language structure. Thus, language analysis must be an important part of this approach to research the discourse on social issues.

The public speeches of a country's leaders represent the country, so the analysis of such political texts can assist study the current US government's attitude towards climate issues. Therefore, this paper will use DHA to study the 17 climate speeches made by President Biden and Vice President Harris since they took office to explore the government's attitude towards climate.

2. Theoretical bases

Ruth Wodak, an Austrian critical discourse analyst, proposed Discourse-Historical Approach in 2001. This method emphasizes the social and historical context of political discourse and tracks the evolution of discourse events. Besides, the selective method focuses on social issues and the characteristics of the historical context of discourse. It was used to analyze the anti-Semitic tendency in Austria after the war in the early stage, and later widely employed in gender discrimination and national identity research. DHA can be used to study language hegemony, discrimination or xenophobia, so as to awaken people's awareness of the judgments, political tendencies and purposes imposed on discourse.

Three steps are required in using this method: (1) Select the topic of the discourse; (2) Discuss the discourse strategies; (3) Check how the discourse strategies work.

DHA mainly includes two parts: three-dimensional context analysis and linguistic analysis. Three-dimensional analysis needs to combine specific contexts: (1) the immediate linguistic context of discourse, (2) the context of situation of non-discourse, and (3) the sociopolitical and historical contexts, among which the second one needs to consider the attributes of social organizations, norms of social organizations, and changes in social organizations.

On the basis of context, three-dimensional analysis should examine the intertextuality between different discourses, languages, topics and texts in the selected social phenomena; explain social phenomena in combination with the situational context of the selected text; analyzes the selected social phenomena in combination with the relevant socio-political and historical context.

Linguistic analysis includes the analysis of five strategies most commonly used by researchers: (1) referential strategy, (2) strategies of prediction, (3) strategies of perspective, (4) strategies of argument, and (5) strategies of enhancement and mitigation.

3. Corpus Selection

This paper searches the official website of the White House of the United States for 17 climate related public speeches and inaugural speeches delivered by the President and Vice President since Biden took office and recently (January 20, 2021 to November 18, 2022), and makes them into a small corpus containing 30,764 words: Climate Speech by Both Presidents (CSBP). In addition, this paper searches all of Biden's 85 climate related speeches in the two months before and after the date of China's countermeasures, which are used to build a reference corpus containing 267,685 words—Biden's Multi-theme Speech on Climate Issues (BMSCI).

The corpus analysis software used in this study is LancsBox 6.0. This corpus software is equipped with powerful retrieval and statistics functions, supports various types of retrieval operations, and has collocation diagrams to complete collocation methods.

It also supports the simultaneous import and analysis of multiple corpora, as well as the comparison on the same screen. This version has 7 functional modules, namely KWIC (to retrieve syntactic structures, phrases, words, etc); GraphColl (to generate collocation diagrams); Words (to generate thesaurus); Ngrams (to retrieve multiple words at the same time); Whelk (to retrieve the distribution of words in documents); Text (to locate the source of the search term) and Wizard (to generate general report of idiom library).

First, this paper uses the word frequency filtering function of Words to count 50 high-frequency words related to climate topics in the CSBP. The above 100 words are divided into five categories: Environment, Appellation, Economy, Measures, Crisis. See Table 1.

Table 1: 50 High-frequency Vocabulary Related to climate

Environment	Fre.	Appellation	Fre.	Economy	Fre.	Measures	Fre.	Crisis	Fre.
Climate	233	Nation	108	Job	85	Commitment	39	Crisis	76
Energy	91	People	92	Work	44	Goal	37	Change	60
Emission	58	World	91	Economy	41	Effort	26	Justice	30
Power	39	Country	73	Investment	35	Technology	26	Security	24
Gas	37	Leader	70	Worker	32	Vehicle	25	Threat	24
Heat	23	Leadership	23	Sector	31	Innovation	19	Impact	19
Air	22	State	22	Plant	23	Order	19	Challenge	19
Water	22	Everyone	20	Infrastructure	21	Movement	18	Pollution	19
Methane	19	Folk	20	Dollar	17				
Wind	18	Generation	20						
Degree	17	Government	18						
Greenhouse	16	Friend	16						

4. Corpus Analysis

Discourse strategy analysis is the core of DHA. Based on the vocabulary statistics in Table 2, this paper will start from the climate topic and discuss the three aspects of environment, application and economy with reference strategy and strategies of prediction in DHA. By doing so, discuss the importance that the current US government has attached to environmental issues since taking office.

4.1. Referential strategy

Referential strategy refers to the construction of community identity through metaphor, metonymy, membership categorization and language expression techniques to distinguish the internal and external of a group, so as to explore how to form behaviors, objects, social actors, events and processes in discourse. This section will study the high-frequency nouns used by Biden and Harris in their speeches on “environment” in different periods, so as to trace the discourse historical background of the topic and explore the attitude of the current US government on the topic.

First of all, this paper uses the GraphColl of LancsBox 6.0 to search for five related collocations (except functional words) with “climate”, which appears most frequently in this corpus, as the search term. The words related to “climate” are all represented by dots with different depths. The darker the color and the closer to the head word, the closer the relationship between the word and the head word. As shown in Figure 1.

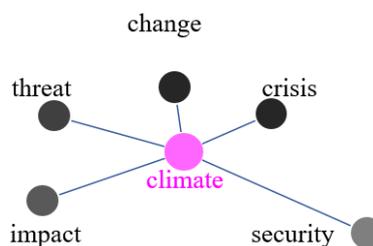


Figure 1: Related words of “climate”

“Change”, “crisis”, “threat”, “impact” and “security” are the words closest to the search term. Later, this paper uses the KWIC to divide the original corpus into two corpora: CSBP-2021 and CSBP-2022. Retrieving “crisis” and “threat” with negative points. In CSBP-2021, the “crisis” appears 29 times; the frequency of “threat” is 13. In CSBP-2022, the “crisis” appears 28 times; the frequency of “threat” is 6. The frequency and proportion of the two words in 2022 are lower than that in 2021. The use of these two referential strategies in different periods will be summarized in the following sections.

(1) In my view, we’ve already waited too long to deal with this climate crisis and we can’t wait any longer. Jan. 27th, 2021.

This sentence is selected from Biden’s speech before he signed the Administrative Action to Tackle Climate Change, Create Jobs and Restore Scientific Integrity a week after taking office. In his speech, Biden says the “Climate Day” as the “Employment Day”. Taking various natural disasters in 2020 as an example, he mentioned the relationship between the climate problem and the mortality rate of COVID-19 to emphasize why the climate problem needs to be solved urgently. At this time, the Biden government attaches great importance to climate issues. Biden said publicly before he was elected President of the United States that “climate change is the existential threat to humanity...Unchecked, it is going to actually bake this planet. This is not hyperbole. It’s real. And we have a moral obligation. “ At that time, the Guardian reported, “A US president who recognizes global heating as an ‘existential threat’ will be a vital extra pillar propping up the teetering edifice of climate diplomacy. (Nov. 2020)”. It can be seen that Biden won a lot of support on climate issues before he was elected.

(2) And we need to work together, once again, to build a clean energy future that delivers good jobs and overcomes the threat of climate change — investing in innovation and in our people, raising our ambitions, ensuring every nation does its part. Apr. 23th, 2021.

This sentence is selected from the speech delivered by Biden at the at the Virtual Leaders Summit on Climate Session 5: The Economic Opportunities of Climate Action. In the speech. Biden stressed that the way to improve the climate is to invest in emerging energy-saving industries, and this will also create a variety of jobs. It was also emphasized that improving the climate requires a lot of technical support. In addition, Biden specifically stated that the United States will play a leading role in this regard.

Here, CSBP is divided into Biden’s internal speech CSBP-Domestic (CSBP-D) and Biden’s external speech CSBP-External (CSBP-E). Take the words retrieved from the “ Appellation” in Table 1 as the search object. And purify the words that have little difference in frequency between CSBP-D and CSBP-E, finally selected “world”, “country” and “leader” as the search words for retrieval in two sub-corpora. The results showed that the frequency of the three words in CSBP-E was 67, 51 and 26 respectively; The frequency of occurrence in CSBP-D was 24, 22 and 44 respectively. In his foreign speeches, Biden always stressed that the rise of the world’s temperature will bring serious consequences, such as fires, floods, hurricanes, etc., and called on all countries in the world to work together to reduce carbon emissions. In his domestic speech, Biden emphasized that the United States will become stronger and more prosperous in all aspects and lead the world in clean energy by solving environmental problems. It can be seen that the Biden government in 2021 attaches great importance to climate issues, not only because this topic can create more jobs and help promote the economy, but also because it can intensify the leadership role of the United States.

(3) We can tackle the climate crisis and make sure all people can breathe clean air, drink clean water, and have access to clean energy. Aug. 1th, 2022.

This sentence is excerpted from the Remarks by Vice President Harris on Climate Resilience. The full text focuses on the threat of climate change to human survival, as well as the contributions made by the current administration in the United States last year. The economic

impact of climate change is rarely mentioned. In addition, several other speeches in the same period also mentioned the impact of climate change on the economy, but they are more like a background for other industries. By searching the subject term “climate” in the reference corpus BMSCI, it was found that Biden mentioned climate issues on various occasions, Global Infrastructure and Investment (PGII) Meeting, Rally for New York Governor Kathy Hochul, the Summit on Fire Prevention and Control, Fire Prevention and Control Summit, Democratic National Committee Event, etc., but did not focus on them. It can be seen that during this period, the Biden government has paid less attention to climate.

(4) So, for years, our nation and many of us have discussed, have lamented, have talked about the threat of climate change. For years, we debated the potential impact that climate change could have on our communities, on our country, and our world. Aug. 1th, 2022.

This part and example (3) are selected from the same speech. This part only describes the “potential” impact of climate change, compared with the direct economic impact of the climate problem described by Biden in 2021. The climate related laws promulgated by the current US government: January 25, 2021 -Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis; February 1, 2021 -Tackling the Climate Crisis at Home and Abroad (2021); February 9, 2021 -Executive Order on Rebuilding and Enhancing Programs to Resettle Refugees and Planning for the Impact of Climate Change on Migration; May 12, 2021 -Executive Order on the Establishment of the Climate Change Support Office. They all focus on 2021. By the deadline of 2022, the authorities and governments have not issued climate related laws, but pay more attention to fields such as chips. It can be seen that in the two periods, the US government will pay more attention to climate related topics in 2021, while the focus of its work will shift in 2022.

4.2. Referential strategy

The declaration strategy means evaluate the attributes of social actors, phenomena, time or processes. The common way is to take the advantage of certain predicate verbs, adjectives, nouns, etc. In this section, we will search the words of the left and right five words of “job” in Table 2 to determine the declaration strategies used in this discourse. The results show that “create” and “good” are the closest with “job”. As shown in Figure 2:

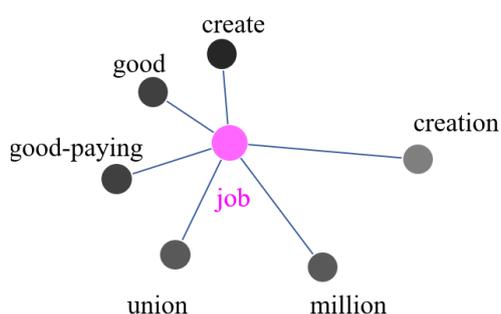


Figure 2: Related words of “job”

The occurrences of “create” and “good” in CSBP is 45 and 55 respectively. In CSBP-2021, the two words appeared 27 and 29 times respectively, while in CSBP-2022, the two words appeared 18 and 26 times. In contrast, the frequency of the two words in the second stage is lower. In combination with “jobs”, “create jobs” will appear 23 times in 2021 and only 10 times in 2022; However, “good jobs” appeared seven times in 2021 and only four times in 2022. According to the data of the U.S. Bureau of Labor Statistics, the unemployment rate of the United States will be 5.46% in 2021, and 3.7% before December 2022. The data shows that the unemployment rate of the United States is no lower than that of 2022, especially when the US

authorities emphasize that increasing climate-investment can increase jobs in 2021. That is to say, the decline of unemployment rate in the United States in 2022 has no obvious relationship with environmental investment.

(5) We need to ensure that the financing will be there, both public and private, to meet the moment on climate change and to help us seize the opportunity for good jobs, strong economies, and a more secure world. Apr. 22th, 2021.

It comes from the Remarks by President Biden at the Virtual Leaders Summit on Climate Session 2: Investing in Climate Solutions. Biden believes that his hosting of the summit in the first 100 days of his administration shows that his government regards addressing the climate crisis at home and abroad as the top priority of the United States. At this time, the United States “encourages” participating countries to propose their own carbon reduction goals by means of improving the environment to help increase employment. This coincides with the way in which the United States has won popular support at home. In President Biden’s speech before signing the administrative action to deal with climate change, create jobs and restore scientific integrity, Biden said, “We need engineers to design them and workers to manufacture them. We need iron workers and welders to install them. Technologies they invent, design, and build will ultimately become cheaper than any other kind of energy...” It can be seen that in 2021, Biden will preach to both domestic and foreign countries that solving the climate problem can alleviate the problem of asking questions.

(6) You know, we’re here at this summit to discuss how each of us, each country, can set higher climate ambitions that will in turn create good-paying jobs, advance innovative technologies, and help vulnerable countries adapt to climate impacts. Apr. 22th, 2021.

This part comes from the Remarks by President Biden at the Virtual Leaders’ Summit on Climate Opening Session. In this speech, Biden mentioned at the beginning, “That’s why, when talk about climate, I think jobs.” It can be seen from this that the Biden government has positioned this meeting. Before the opening ceremony, Biden rejoined the Paris Agreement and formally submitted the United Nations Framework Convention on Climate Change. It can be seen that in this period, the Biden government attached great importance to climate issues, and also paid attention to the job opportunities and economic benefits brought by investment in the new energy industry.

(7) Folks, we are proving that good climate policy is good economic policy. It’s a strong foundation for durable, resilient, inclusive economic growth. It’s driving progress in the private sector. Nov. 11, 2022.

This sentence is selected from President Biden’s speech at the 27th Conference of the Parties to the Framework Convention on Climate Change (COP27) in 2022. In the corpus CSBP-2022, the frequency of “good jobs” decreased (only 5 groups). Biden’s attitude towards climate has weakened, and he seldom emphasizes the work that can be brought about by improving climate in 2022. It simply means that a good climate policy is a good economic policy. From the work priorities of the Biden government in 2022, it can be found that wind energy and reducing household energy costs are related to climate issues only in September and November. However, on February 4, 2022, the Biden Administration passed the Executive Order Protecting Access to Reproductive Health Care Services, Pre-Eminence in Technology and Economic Strength (COMPETES) Act of 2022, which mainly benefits the chip manufacturing industry. On August 9th, Biden signed the CHIPS and Science Act of 2022, forcing enterprises receiving chip subsidies from the United States must make chips in the United States. Have a glance of Biden’s speeches in 2022: Meeting with CEOs and Labor Leaders on the Importance of Passing the CHIPS Act on July 26, Marking the Signing of Governor Whitmer’s Executive Directive to Implement the CHIPS and Science Act of 2022 on August 2, Rebuilding American Manufacturing Through the CHIPS and Science Act on September 9, the CHIPS and Science Act at IBM

Poughkeepsie on October 6, Micron's Plan to Invest in Chips Manufacturing on October 27. From these remarks, we can see that the Biden government's focus in 2022 is not on climate, but on chips. At present, the United States only retains the light assets of the semiconductor industry chain, such as software development, chip design and brand promotion, because they are the part with the highest profits but the least pollution. In the mentioned public speeches, Biden stressed the need to rebuild the U.S. manufacturing industry and mentioned the jobs created by the chip industry. But the crux of the problem is that the chip manufacturing enterprises that the United States attracted back from other countries through investment are very unfriendly to the environment. A research team of Harvard University wrote in 2020 that chip manufacturing "accounts for the majority of carbon emissions of electronic equipment". Forrester analyst Glenn O'Donnell said that several aspects of the semiconductor production process require a lot of power: extracting raw silicon, melting, purification, making silicon rods and other steps are extremely energy consuming. However, the United States has ignored this fact and only focused on its employment goals and the title of "world leader", neglecting climate and environmental pollution.

(8) One of the companies investing in the factory here joined me at the White House this month. Vineyard Winds, whose CEO told me about the ground-breaking project labor agreements they've negotiated, would create good-paying union jobs. Jul. 20th 2022.

This is part of Remarks by President Biden on Actions to Tackle the Climate Crisis. However, the speech did not focus on environmental issues, but as the background by issuing a 3.1 billion dollar infrastructure law, formulating workplace standards on extreme high temperatures, limiting coal power plants, investing in clean energy, building nuclear power plants and other measures through the adverse effects of specific natural disasters (hurricanes, tornadoes, western wildfires, melting permafrost) on the medical, military, and supply chain of the United States. Accordingly, "job creation" is only the additional effect brought by its investment in clean energy. The bill signed by the U.S. government in this period: July 8, Protecting Access to Reproductive Healthcare Services; On July 15, the Establishing an Emergency Board to Investigate Disputes Between Certain Railroads Represented by the National Carriers' Conference Committee of the National Railway Labor Conference and Their Employees Represented by Certain Labor Organizations; on July 19, Bolstering Efforts to Bring Hostages and Wrongfully Detained United States Nationals Home. The signed bill has no direct relationship with climate change. It can be seen that the Biden government's concern for climate in 2022 is indeed decreasing.

5. Conclusion

In this paper, the DHA is used in the self-built corpus to analyze the climate discourses from Biden and Harris. It is found that the Biden government, taking climate as the reform background, aims to increase the manufacturing jobs in the United States, improve the employment rate in the United States, strengthen the supply chain of the United States, and let the country return to the status of a major manufacturing country in the world. At the beginning, Biden focused on climate and later shifted his focus because the chip reform bill previously proposed was not passed by the House of Representatives. After the chip bill was passed, the US authorities weakened the climate issue, turned the focus to the chip industry, and ignored the environmental threats brought by the chip manufacturing industry. The reason is that the benefits of the chip industry for the United States are far greater than those of climate investment: increase employment, consolidate the position of the United States as a chip power, strengthen the weapons manufacturing industry, help the United States lead the world in quantum computing, artificial intelligence, and advanced manufacturing, and improve national security.

The leaders' discourse will have different meanings in different historical environments. The core of applying DHA is to analyze discourse from three different dimensions, instead of just sticking to the text itself. This paper combines corpus with DHA, and appropriately applies it to climate discourse analysis, which broadens the scope of application of this approach.

Common corpus research uses a single corpus analysis software. This paper argues that Lancs Box 6.0 makes and uses corpora to improve the accuracy of the corpus, and to increase the expression of the corpus rather than presenting it in a single list of results.

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