The Connotative Meaning of the Term “climate change” from 1970 to 2020, Based on The UN General Assembly Corpus

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1. Introduction

In the domain of linguistic analysis, the study of word combinations and their recurring patterns has been a subject of enduring fascination. The study of collocations has received fresh impetus through new computational approaches and the availability of large electronic text corpora, especially since the early 1990s. With the successively wider availability of ever larger corpora, studies of collocations have become feasible on a previously unknown scale, reaching a wider coverage of empirical data than ever before (Bartsch, Evert and Erlangen-Nürnberg, 2014, p. 49).

The discourse on climate change has been a frequent focus of investigation across various disciplinary orientations in recent years. However, it is surprising that there has been relatively little linguistically-oriented research on the subject (Fløttum & Dahl, 2012, as cited in Poole & Hayes, 2022, p. 38), as the majority of studies into climate change discourse emanate from communication and media studies which rarely pursue ‘micro-textual or corpus-driven research’ (Dormer, 2020, p. 1130). While studies exploring climate change in national media are valuable, they also reflect a critique of the scarcity of linguistically oriented research in this realm (Fløttum & Dahl, 2012, as cited in Poole & Hayes, 2022, p. 40).

In light of these considerations, I have chosen to focus on the term "climate change" due to its global significance, my personal interest in the topic, and its critical importance in the contemporary discourse. As an individual deeply concerned about climate change and its environmental ramifications, I am particularly drawn to exploring its impact both globally and within individual countries, notably Iran.

The urgency of climate change places a substantial responsibility on governments worldwide. For instance, the desiccation of Lake Urmia in northwestern Iran serves as a stark example of the environmental consequences of climate change. Once the third largest salt-water lake globally, poor water management and extensive dam construction have led to the drying up of more than 70% of its surface area. Consequently, the exposed salt deposits have become susceptible to

wind erosion, with predictions indicating that salt storms originating from the dried lakebed will severely impact the lives of millions residing around the lake (Garousi et al., 2013).

In regard to this and my Iranian background, I feel especially obligated to look into the worldwide issue of climate change, focusing on its effects in Iran and other countries.

The late 1980s marked a pivotal moment highlighting the urgency of addressing climate change. The UN General Assembly, along with international conferences such as the 1988 Toronto Conference and the 1990 Second World Climate Conference, underscored the escalating momentum behind the global warming debate (Luterbacher & Sprinz, 2001). These coordinated efforts underscored the growing recognition that climate change transcends national boundaries and necessitates collective action on a global scale. Developing nations, in particular, emphasized the gravity and interconnectedness of the issue within the broader global discourse, underscoring the international community's shared responsibility in addressing climate change (Mitrani, 2017).

In this paper, I aim to investigate the frequency, collocation patterns, and evolving meanings of the term "climate change" in speeches delivered at the UN General Assembly between 1970 and 2020. Leveraging CQPweb, this analysis seeks to offer nuanced insights into the shifting discourse on climate change within the UN General Assembly, thereby illuminating global perspectives over five pivotal decades.

2. Methodology

In this section, the tools, including the corpus and the analysis system are introduced. Then, the applied methods will be introduced and described. Finally, the further necessary steps to achieve the desirable results will be described.

2.1. Tools

CQPweb is a new web-based corpus analysis system, intended to address the conflicting requirements for usability and power in corpus analysis software. (Hardie, 2012)

Concordancing, collocations, distribution tables and charts, frequency lists, keywords or key tags, and more analysis tools are offered in CQPweb.

2.2. Methods

2.2.1. Employing CQPWeb to assess the frequency of the term "climate change" in each speech.

2.2.2. Normalizing the results by considering variations in speech length, calculating the frequency of the phrase "climate change" in each speech, and expressing it as frequency per million words**.**

2.2.3. Utilizing distributional analysis to scrutinize the climate change stance of countries, identifying those most and least committed to addressing this global issue.

2.2.4. Conducting collocation analysis to explore the term "climate change" and its contextual evolution through accompanying words over each ten-year period.

3. Results

The Query of Term “Gender Quality” returned 7,898 matches in 2,350 different texts (in 25,972,547 words.

Frequency by Year:

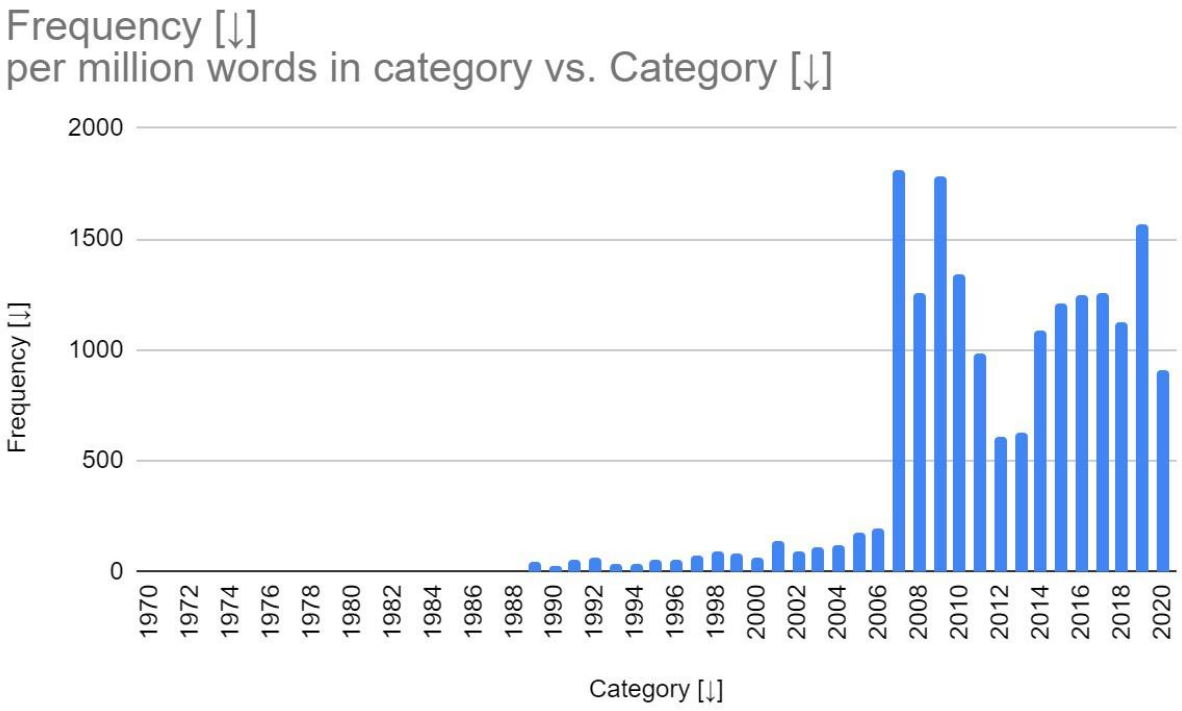

Figure 1yearly Frequency per Million Words Analysis of 'Climate Change'

Over the last fifty years, there have been several movements and trends that may be seen in the table which displays the frequency per million words of the term "climate change" in UN General Assembly addresses given in various years.
There is a slow development of discourse in the late 1980s and early 1990s, indicating an increased understanding of climate change as a global concern, after receiving little attention in the 1970s and 1980s. The 1990s and the first part of the 2000s are marked by fluctuations, but the mid-2000s saw a notable increase in frequency that corresponds with rising political and public awareness of climate change issues.

The frequency peaks in the late 2000s and early 2010s, then stabilizes at high levels through 2019. While there has been a slight decrease in recent years, discourse levels are still elevated when compared to previous decades.

Overall, the data highlights how climate change is becoming more and more important on the global agenda by reflecting its increasing importance and continuous attention inside the UN General Assembly.

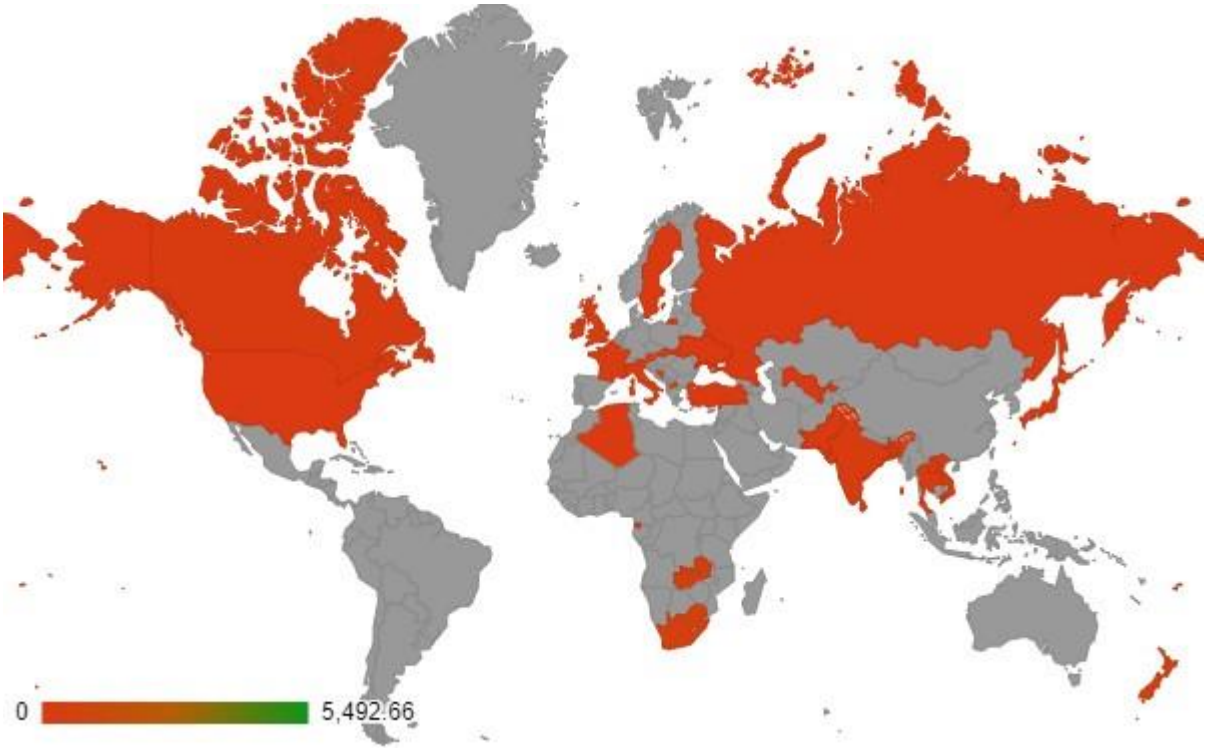

Figure 2Frequenc per million words in category

Frequency by Countries:

In the above world map, the distribution of using term “climate change” is shown by considering the frequency in each country.

In this section, as mentioned in the introduction, Iran has a frequency per million words (4.89) that is noticeably lower than that of many other nations, including its neighbors in the region and those with comparable populations or geopolitical settings.

Here are some comparisons and observations based on the frequency per million words of the term "climate change" in UN General Assembly speeches for various countries: Some countries exhibit notably high frequencies per million words, such as Kiribati (4,288.54), Marshall Islands

(1,708.71), Palau (2,707.88), Solomon Islands (1,090.93), Tuvalu (5,492.66), and Samoa (2,413.68). Conversely, some countries have relatively low frequencies per million words, including Iran (4.89), Iraq (15.82), Saudi Arabia (16.17), Syria (18.51), and North Korea (37.89).

To compare developed and underdeveloped countries, it can be said that Developed countries like the USA (78.36), UK, Germany, and France generally have moderate frequencies per million words compared to smaller island nations and some developing countries.

Many European countries and some small island nations exhibit relatively high frequencies per million words compared to countries in the Middle East and Africa.

Collocation analysis:

The examination of collocation patterns of the term "climate change" in different time periods allows the contextual evolution of discussions surrounding climate change to be uncovered. Through this analysis, key terms and phrases associated with climate change discourse can be identified, and how they have changed over time can be understood.

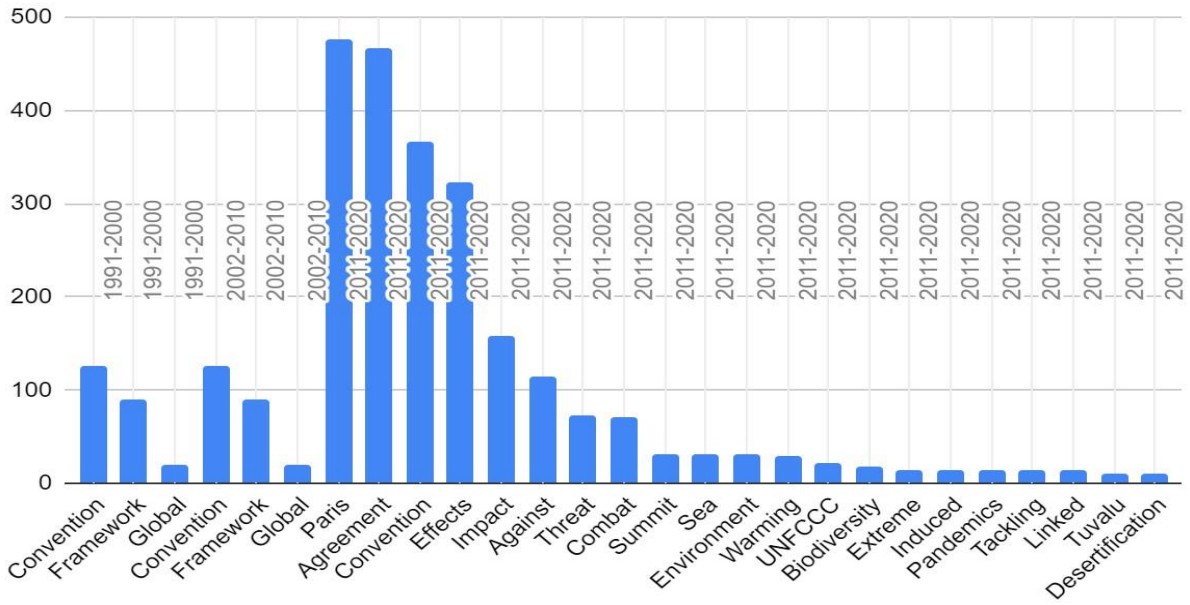

Figure 3collocational Analysis of Climate Change Discourse in UN General Assembly Speeches: Three Decades (1991-2000, 2001-

Based on the results of the collocation analysis divided into three distinct periods of ten years each:

During the initial period from 1991 to 2000, key terms like 'Convention,' 'Framework,' and 'Global' emerged, indicating the early stages of awareness and discussion regarding climaterelated issues.

Over the next ten years, from 2001 to 2010, there was a noticeable rise in the adoption and use of language related to climate change, with 2010 showing the highest frequency of use. The enduring significance of 'Convention' highlighted the ongoing focus on global accords and structures intended to tackle climate-related issues. Furthermore, phrases like "Paris Agreement" and "Agreement" demonstrated a rising dedication to cooperative methods of reducing the effects of climate change.

It seems that in the period from 2011 to 2020, foresight is very important. This decade has seen a notable emphasis on predicting the difficulties and fallout that may arise from climate change in the future. Phrases like 'Effects,' 'Impact,' 'Paris Agreement,' and 'Against' highlight a greater understanding of the global consequences of climate change. The ubiquity of these terms indicates a deliberate attempt to give strategic planning and preventative actions top priority in order to confront the changing global effects of climate change."

Some of the most important words and collocations related to gender equality in theoretical research include:

- convention on climate change
- framework convention on climate change
- effects of climate change
- Agreement on Climate Change
- Global climate change

- impact on climate change
- Adverse climate change
- Against climate change
- Greenhouse gases
- Global warming
- Carbon emissions
- Climate variability
- Climate adaptation
- Climate mitigation Carbon footprint
- Renewable energy
- Climate resilience
- Climate action
- Climate policy
- Climate modeling
- Climate science
- Climate-induced disasters
- Climate justice
- Climate finance

At the conclusion of this section, it can be asserted that my results make a significant contribution to addressing my research question. They offer detailed insights into the frequency, collocation patterns, and evolving meanings of the term "climate change" within the UN General Assembly corpus over the specified time period.

4.Discussion

This study offers policymakers valuable information to make informed decisions and support worldwide efforts to address climate change.

Results from the examination of the UN General Assembly corpus provide insight into how the conversation around climate change changed between 1970 and 2020. The frequency analysis shows that awareness of climate change has been steadily rising over the years, peaking in the late 2000s and early 2010s. As seen by the increased public and political awareness during that period, this upward tendency represents the world community's growing understanding of climate change as a critical global concern.

The examination of the frequency of "climate change" in different countries shows notable differences, which are indicative of differing degrees of dedication to tackling this problem on a worldwide scale. Developed countries generally exhibit a moderate level of engagement, whereas certain developing countries and smaller island nations exhibit higher levels of discourse. On the other hand, certain developing nations show reduced participation. The global dialogue and response to climate change are shaped by a number of intricate factors, including social priorities, economics, geopolitics, and environmental vulnerabilities.

As we saw in the results section, the use of terms such as 'Convention' and 'Framework' in the early stages symbolizes the beginning of global collaboration and policy development, setting the stage for future collective efforts. As time progressed, there was a significant increase in the use of language focused on adoption and implementation, with terms like 'Agreement' and 'Paris Agreement' becoming prominent, demonstrating a growing commitment to working together. In the most recent period from 2011 to 2020, there has been a noticeable shift towards forward-thinking dialogue, with an emphasis on terms like 'Effects,' 'Impact,' and 'Against,' showing a strategic move towards proactive planning and prevention. These trends highlight the evolving priorities and the necessity for proactive approaches in addressing the complex challenges of climate change.

It is important to recognize the basic limitations of this research when discussing its findings since they influence the study's scope and interpretation. First of all, while the study

acknowledges differences in the frequency of climate change discussions across nations, it may not delve into deeply into the underlying causes of these discrepancies, such as political, economic, or cultural variables. Furthermore, While CQPweb offers useful tools for corpus analysis, its capabilities may be limited. Complex linguistic phenomena may not be fully supported, and the accuracy of analysis depends on the quality of the data. An evaluation of CQPweb against criteria earlier laid down for a future webbased corpus analysis tool suggests that it fulfils many, but not all, of the requirements foreseen for such a piece of software(Hardie, 2012)

Moreover, despite efforts to maintain objectivity and rigor, subjective judgments and preconceptions may inadvertently impact the analysis. Additionally, the study's generalizability beyond the confines of the UN General Assembly Corpus is limited, potentially constraining its ability to reflect the full spectrum of perspectives on climate change worldwide. These acknowledged limitations underscore the necessity for cautious interpretation and highlight avenues for future research to explore more comprehensively.

In conclusion, the analysis of climate change discourse underscores the shifting dynamics of global climate governance and emphasizes the imperative of collective action. By understanding patterns and trends in discourse, policymakers can develop more effective strategies for mitigating impacts and fostering sustainable development globally.

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