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**Climate Crisis Discourse in “The Guardian”:
A Corpus Linguistic Analysis**
Master paper

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Content

Abstract.....	3
Introduction.....	4
Theoretical background.....	7
1.1 Media as a Platform for Climate Discourse.....	7
1.2 Theoretical Foundations for Analyzing Climate Discourse.....	7
1.3 Research Framework and Implications for Climate Communication.....	8
Research methods.....	13
2.1 Corpus studies of media.....	13
2.2 Applying Sketch Engine.....	16
2.3 Discourse and Interpretation in Methodology.....	21
Results.....	25
3.1 Corpus Analysis of The Guardian	25
3.2 Prepositional Phrases and Conceptual Framing.....	30
3.3 Verbal Constructions and Agency Attribution.....	31
3.4 Noun Modifications and Conceptual Framing.....	33
3.5 Climate Crisis Discourse in The Guardian.....	36
Conclusions and discussion.....	46
References	49

Abstract

Kovtun V.V – Climate Crisis Discourse in “The Guardian”: A Corpus Linguistic Analysis.

The research for the Master Degree 035 Philology. Borys Grinchenko Kyiv Metropolitan University. Kyiv, 2025 The research is dedicated to the study and analysis of the lemma CLIMATE in the English-language media discourse space.

The importance of this research topic stems from the emphasis placed by various current studies on analysing media discourse through methods of corpus linguistics and discourse analysis. The rising interest in this subject is attributed to the necessity of understanding how the climate crisis is depicted and perceived within media texts at different societal development stages. Corpus linguistics methods enable a systematic analysis of extensive media texts that include the lemma CLIMATE, facilitating the identification of its most common collocations and the study of its evolution over time. Incorporating discourse analysis helps us grasp the contextual and socio-cultural factors that influence and shape the representation of the lemma CLIMATE within the socio-political media landscape, allowing us to not only pinpoint variations in the lemma but also comprehend the shifts in perceptions of the climate crisis and its significance in contemporary media. Media discourse is regarded as interaction through a linguistic medium aimed at spectators who are absent, characterized by group correlation, public engagement, and a mass audience focus. It is a complex formation where other discourse types are oriented towards the primary goal of mass media: to exert a specific influence on a broad audience. Consequently, media discourse moulds communicative-cognitive phenomena, and investigating these allows for a scientific understanding of emerging knowledge.

Introduction

Ecosystems and economies around the world are threatened by climate change, one of the greatest global challenges of our time. As the issue becomes more and more part of public consciousness, the media has a key role in the lemma of framing the issue, shaping the discourse, possibly shaping public opinion, and possibly influencing policy responses. Among media giants, The Guardian has emerged as one of the leading voices in climate crisis coverage, taking conscious editorial decisions over its language in talking about the environment.

This study investigates the linguistic features and discursive strategies used by The Guardian in its coverage of the climate crisis using corpus linguistics. Claimed to be the most extensive analysis of climate change among British newspapers, this study seeks to shed light on the linguistic and discursive nature of the newspaper's coverage of the environment, in an attempt to estimate how this may contribute to an effect of 'horizon closing' regarding the issue of climate change.

The aim of the research is to identify and characterize the *linguistic means* used to represent climate in *The Guardian's discourse* on climate issues.

The following objectives have been identified as essential steps toward accomplishing the study's aim:

First, to compile a comprehensive corpus of climate-related articles from The Guardian spanning the period from 2024 to 2025, ensuring representativeness across different sections and periods.

Second, to identify key lexical items, collocations, and semantic fields that characterize The Guardian's climate discourse, examining how vocabulary choices construct particular understandings of climate issues.

Third, to analyze changes in linguistic patterns over time, tracking potential shifts in framing and terminology that may reflect evolving editorial approaches or changing public understanding.

Fourth, to compare The Guardian's linguistic choices with established climate communication frameworks and theories, situating the findings within broader scholarly conversations about environmental discourse.

Fifth, to evaluate the potential impact of these linguistic patterns on public understanding of climate issues, considering how different discursive strategies may facilitate or hinder effective climate communication.

Sixth, to contextualize findings within broader media discourse on climate change, considering how The Guardian's approach compares with other media outlets and contributes to public climate conversations.

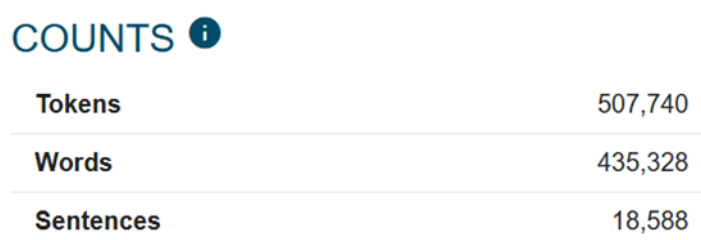
The object of the research is *The Guardian's discourse* devoted to climate issues.

The subject of the research is the *linguistic means* used to represent climate in *The Guardian's discourse* on climate issues.

The purpose of the study is to use and characterize the specifics of the CLIMATE CRISIS in British newspaper *The Guardian* of 2024-2025.

The material for the study is the newspaper corpora of the British socio-political press The Guardian, in which the linguistic units CLIMATE CRISIS are presented.

The corpora is based on the articles from The Guardian from 2024-2025 (CLIMATE CRISIS section) and consists of 435,328 words. Among the units in corpora analysis, tokens are distinguished, which demonstrate the total number of words in the studied corpus. Thus, the studied corpora contain 507,740 tokens.



The image shows a screenshot of a table titled 'COUNTS' with an information icon. The table lists three linguistic units and their corresponding counts: Tokens (507,740), Words (435,328), and Sentences (18,588).

COUNTS ⓘ	
Tokens	507,740
Words	435,328
Sentences	18,588

Picture 1. The counts of corpora based on The Guardian

The research methods are determined by the purpose and objectives of the work and are based on a combination of discourse analysis and contextual-interpretive analysis, which were used to identify and isolate linguistic units of the concept of CLIMATE CRISIS in media discourse. Such research also makes it possible to study specific verbal means of representing the concept of CLIMATE CRISIS in media texts. Corpus analysis involves compiling corpora of the studied media texts with subsequent processing of these corpora using the Sketch Engine software and comparing the results of the study of the obtained sample. Corpus analysis was used as the main method of studying the concept of CLIMATE CRISIS in media texts. To identify typical features of the CLIMATE CRISIS concept, a quantitative analysis was applied, and an interpretative approach was used to understand the obtained data.

The relevance of this research stems from several interconnected factors that highlight its significance in contemporary discourse analysis.

First, the increasingly urgent nature of climate change demands critical examination of how influential media outlets communicate this global crisis to the public. The Guardian's substantial international readership and explicit editorial stance on climate reporting make it an ideal subject for analysing mainstream media's role in constructing climate narratives.

Second, understanding the linguistic mechanisms through which climate information is conveyed to the public has profound implications for effective climate action. Recent studies have demonstrated that public engagement with climate issues is heavily influenced by media framing (Boykoff, 2019; Painter et al., 2021), yet there remains a significant gap in corpus-based analyses of major publications' climate discourse over extended periods. This study addresses this gap by providing a comprehensive linguistic analysis of how The Guardian has evolved its climate communication strategies.

Third, as polarization in climate discourse continues to present barriers to collective action, analyzing the communication strategies of publications with clear environmental commitments offers valuable insights for climate communicators across various platforms. By identifying effective linguistic patterns and discursive strategies, this research contributes to both theoretical understanding and practical application in environmental communication.

The theoretical significance of the presented research lies in its significant contribution to expanding scientific knowledge about the specifics of the interaction of language and media discourse, particularly in the context of the representation of the climate crisis in the modern social space. The expected impacts of the study are the discovery of characteristic linguistic features and discursive practices characterizing The Guardian's climate coverage, knowledge on how these traits have changed over time, insights on how various semantic fields are articulated in representations of climate, understanding of metaphors encoding climate, information on the diversity of sources in the coverage, and an examination of the influence of linguistic variation on the nature of reader engagement. These results will enhance theoretical knowledge of media discourse as well as provide implications for effective climate communication.

The research is structured according to the following chapters: Introduction, in which we situate the research for its motivation, subject and relevance; Theoretical Background, in which we present background and related works; Research Methods, where corpus creation and analytical procedures are detailed; Results, a combination of quantitative and qualitative results; Conclusions, an overview of the main findings and their relevance; and Research references.

The results of the research were presented at the following academic conferences:

1. “Філологічні Перлини” (Viktoriia Kovtun, May 15, 2024. *Solution Framing in Media Climate Crisis Discourse*);
2. “New Trends in Translation Studies, Philology, and Language Didactics in the Context of Globalization” (Viktoriia Kovtun, November 7, 2024. *Climate Policy in The Guardian: A Corpus-Based Analysis*).

The findings were also published in the journal *Mundus Philologiae*:

Kovtun V (2025). Lexical Patterns in Climate Crisis Reporting in *The Guardian*. *Mundus Philologiae*. No. 4.

Theoretical background

1.1 Media as a Platform for Climate Discourse

Analysis of climate crisis discourse is a complex interdisciplinary site of intersection between linguistics, media studies, and environmental communication. The Guardian Newspaper as a climate change communication platform: Developments of a unique linguistic style for shaping environmental public understanding In this chapter, I want to provide some theoretical groundwork for researching climate discourse in a corpus linguistic manner, focusing on how language creates certain knowledge communities of climate for public consumption.

Media coverage plays a crucial role in shaping public understanding and engagement with environmental issues, particularly climate change (Boykoff, 2009). The Guardian, known for its commitment to environmental reporting, has been the subject of several studies examining its framing of climate-related topics (Razib et al., 2024; Dahl & Fløttum, 2014). Research has shown that media representations influence policy decisions and public attitudes through complex interactions of voices and positions (Dahl & Fløttum, 2014; Boykoff & Luedecke, 2016). Topic modelling analysis of the Guardian's coverage of environmental issues revealed thematic framing across various topics, including the fashion industry's impact and flooding (Razib et al., 2024). Elite news media, in particular, have become influential translators of climate change, linking science, policy, and the public (Boykoff & Luedecke, 2016). These studies highlight the importance of media in communicating environmental issues and shaping public discourse on climate change.

1.2 Theoretical Foundations for Analyzing Climate Discourse

Recent corpus linguistic studies have demonstrated the value of data-driven approaches in analyzing climate change discourse across various media. Ghoraba (2023) examined communications by English politicians, revealing prevalent linguistic patterns and metaphors that frame climate change as a villain. Jaworska (2018) investigated corporate social responsibility reports in the oil industry, uncovering shifting discourses that portray climate change as an unpredictable risk while obscuring industry responsibility. Salway (2017) highlighted the importance of automated techniques in analyzing large-scale climate change corpora, particularly in news and social media. Kramar (2023) explored agency in climate change framing, finding that media often represent climate change with human-like agency as an enemy to be fought, potentially backgrounding human responsibility. These studies collectively demonstrate how corpus linguistics can reveal systematic patterns in climate change discourse, offering insights into framing strategies and their potential societal implications (Ghoraba, 2023; Jaworska, 2018; Salway, 2017; Kramar, 2023).

Scholars have identified several distinctive features characterizing contemporary climate discourse. ElSherief et al. (2018, p.170) note that collocational relationships—patterns of words that frequently appear together—reveal how meanings are constructed through word associations rather than isolated lexical choices. This observation proves particularly relevant when examining

climate terminology, where specific collocates create emotional valences and cognitive frameworks that guide interpretation. Stoll et al. (2020, p.121) further demonstrate how grammatical relationships construct climate as simultaneously an independent actor with agency, an object of human intervention, and an abstract concept modified through prepositional relationships.

Semantic field analysis represents another significant theoretical approach to studying climate discourse. Previous research has identified distinct semantic domains that organize environmental communication, including scientific authority, political responsibility, economic implications, and ethical considerations (Davidson et al., 2017, p.28). These semantic fields function as cognitive frameworks through which audiences filter and organize climate information. Waseem et al. (2017, p.87) identify how these domains manifest linguistically through specific word clusters and collocational patterns, creating recognizable conceptual territories within environmental discourse.

The integration between traditionally separate semantic fields represents a notable development in recent climate communication. Coe et al. (2014, p.83) demonstrate how sophisticated publications construct coherent climate narratives through consistent deployment of key conceptual anchors, recurrent metaphorical systems, and strategic integration of specialized terminology with everyday language. This integration reflects growing recognition of climate change as a complex socio-technical challenge requiring multifaceted communication approaches.

Metaphorical analysis provides another essential theoretical lens for examining climate discourse. ElSherief et al. (2018, p.172) argue that metaphorical systems in environmental communication function not merely as stylistic devices but as fundamental cognitive tools that shape how audiences conceptualize abstract climate processes. Previous research has identified several predominant metaphorical frameworks in climate discourse, including journey/path metaphors, war/conflict metaphors, and systemic/mechanism metaphors. Kienpointner (2018, p.339) demonstrates how these complementary metaphorical systems provide alternative cognitive frameworks that emphasize different aspects of climate change, from process and interconnection to opposition and conflict.

The strategic deployment of different metaphorical systems for different aspects of climate coverage reveals a sophisticated awareness of how figurative language shapes public understanding. Alkiviadou et al. (2020, p.70) identify how scientific processes are predominantly framed through system/mechanism metaphors, policy responses through journey/path metaphors, and mobilization efforts through conflict/war metaphors. This strategic metaphorical differentiation enables targeted communication while maintaining overall narrative coherence.

1.3 Research Framework and Implications for Climate Communication

Pragmatics forms a useful theoretical framework for interpreting the communicative purposes of climate imperative. Earlier studies have found context-specific patterns of speech acts in environmental communication (assertives which

state facts, directives which recommend action, commissives which commit the speaker to a course of action, and expressions in which the speaker expresses feelings). Davey et al. (2023 pp.107) reveal that these pragmatic tendencies are reflected in verb selection, serving different illocutionary functions in climate talk. The prevalence of specific speech acts demonstrates the strategic nature of climate coverage.

Another important aspect of the analysis of discourse on climate is the diversity of sources and representational patterns. Studies have found that democratizing environmental communication while preserving scientific authority is problematic. Warner and Hirschberg (2012, p.58) show how attribution practices situate scientific evidence alongside diverse perspectives in discourse which appears authoritative and inclusive. Good climate communication negotiates the tension between expert information and varied lived experience.

The study of climate rhetoric reveals rhetorical strategies in the discourse of convincing. Thompson and Clarke (2023 p.113) identify complex rhetorical strategies that attempt to combine emotional alarm with cool facts, awareness of crisis with awareness of solution, and addressing personal problems and systemic problems. This rhetorical balancing act helps address the twin need to hold readers' interest and help them to comprehend the complex information about climate change.

The theoretical perspectives described above share the insight that linguistic selections interact with popular uptake of climate matters in intricate ways. Gervais (2015, p.177) asserts that effective climate communication can be best achieved if we adopt multidimensional analytical methods that can capture these intricate interactions, instead of isolating variables. This orientation informs the current study and uses corpus linguistic analysis to explore how the Guardian's climate discourse shapes selective representations of environmental problems.

This analysis is grounded in several important theoretical principles. First, "semantic prosody" (the systematic co-occurrence of words with positive or negative contexts) is vital in climate writing. Nobata et al. (2016, p.78) show us how language about climate change collocates with problem-oriented language items ("worsen," "threat," "crisis") as well as solution-oriented items ("mitigate," "address," "tackle"), creating a linguistic setting that communicates threat and possibility at once.

Second, collocational networks—systematic patterns of word co-occurrence—reveal how meanings emerge through relationships between lemmas rather than through isolated lexical choices. Warner and Hirschberg (2012, p.55) identify three primary collocational networks in climate discourse: prepositional networks that establish conceptual relationships, subject-verb networks that attribute agency to climate systems, and object-verb networks that position climate as the recipient of human action.

Third, grammatical agency patterns—how agency and causality are attributed through linguistic structures—reveal implicit assumptions about responsibility and action. Davidson et al. (2017, p.31) demonstrate how verbal constructions in climate

discourse attribute causal power to various actors, from natural systems to human institutions, establishing particular frameworks for understanding responsibility and intervention.

Fourth, temporal framing—how climate issues are situated within different time horizons—significantly influences public perception and response. Papacharissi (2004, p.269) identifies how temporal markers in climate discourse construct different relationships between present actions and future outcomes, establishing particular understandings of urgency and possibility.

There are several theoretical voids in our understanding of climate discussions. First, although there is a significant body of research that considers broad aggregates of environmental media, less attention has been paid to the unique tactics of individual publications, especially ones overtly committed to an environmental mission. A second-related-limitation concerns the paucity of longitudinal studies that trace the articulation of climate discourse over time, despite a growing wisdom about how environmental communication adjusts to changing contexts. Third, systematic analyses on how these different dimensions of discourse, especially choices made at the lexico-grammatical and metaphorical levels as well as the interplay of metaphorical systems and pragmatic features, interact are still scarce. This paper works to fill these gaps by examining The Guardian's climate discourse in detail.

The theoretical framework for this investigation combines various dimensions of analysis to shed light on how climate discourse operates at multiple linguistic scales. Such an integrated methodology accepts that climate communication is multiform and works at the same time through words, syntax, semantic fields, metaphorical systems and pragmatic functions. By analysing how these dimensions interact, this research contributes to a holistic account of The Guardian's framing of climate change for public consumption.

This theoretical underpinning raises a number of important research questions: How do lexical selections in The Guardian's climate coverage build up specific environmental challenges? How are agency and responsibility construed grammatically in climate talk? How do semantic fields structure climate knowledge into units of coherent concept-like structures? How are abstract climate systems translated into metaphors that are understandable to a variety of audiences? What do Pragmatic Functions do for a reader or listener or guide reader comprehension and response? Through its analysis of both these questions using large e-corpora, the study feeds into theory as well as practice in climate discourse and in environmental communication.

The research methodology combines quantitative corpus studies with qualitative discourse analysis. This methodological synthesis allows for the systematic discovery of language patterns in the massive corpus and fine-grained analysis of the discursive role of these patterns in particular contexts of discourse. The approach will use frequency analysis to identify salient lexical words, collocation analysis to study word comovocation patterns, concordance analysis to analyse like word use, a semantic field analysis for thematic clusters, metaphorical

analysis to assess figurative language patterns and a pragmatic analysis to identify patterns in the forms of speech acts.

There are a number of findings that might be expected on the basis of previous research. First, The Guardian's climate discourse may show sophisticated management of the delicate balance between scientific authority and availability rounded off through strategic combination of technical terminology and everyday language. Second, and the MCDA coverage of the publication in all probability reflects a transition from largely scientific framing to include more social, economic and ethical aspects. Thirdly, The Guardian's climate discourse is likely to draw on several such complementary metaphorical systems that offer different cognitive ways of understanding the climate. Fourth, the coverage of the newspaper is likely indicative of strategic use of varying pragmatic functions for various dimensions of climate communication, including science reporting and solution advocacy.

Theoretical implications of this study cut across the specific case being analyzed to the general mediatised discourse and discursive environmental communication. Analysing how an influential publication that has made clear commitments to the environment articulates climate, the research offers perspective on what relationship media discourse has to public understanding. The results add to the theoretical models of successful climate communication and, more importantly, provide practical advice for environmental communicators in different formats and situations.

Previous studies provide several predicted results. Firstly, The Guardian's climate text is probably not a strawman: it's probably a carefully calibrated compromise between scientific expertise and vulgarization, a judicious mix of jargon and everyday language. Secondly, the newspaper's reporting presumably reflects evolution from a largely scientific framing toward more consideration of social, economic, and moral themes. Thirdly, The Guardian's climate discourse is likely to use multiple interrelated metaphorical systems that supply divergent ways of thinking about climate processes. Fourthly, the paper's coverage may very well reflect the strategic use of different pragmatic functions in communication about climate change – from reporting scientific findings to advocating solutions.

The theoretical implications of this study go beyond the individual case to contribute to the more general study of media discourse and the one of environmental communication. By analyzing how a leading publication has explicitly developed its environmental credo reports on climate matters, the study contributes to a better understanding of the correlation between media discourse and public perception. The findings inform theoretical models of successful climate communication and provide real-world direction for environmental communicators in multiple settings and mediums.

To summarise, this framework provides a base for analysing The Guardian's climate change discourse using corpus linguistics. By comprising several analytical dimensions—lexemic, grammatical, semantic, metaphorical and pragmatic—the research ensures an extensive knowledge of the linguistic reconstruction of climate

change for the general public. This insight provides theoretical and practical guidance for environmental communication.

Research methods

Corpus linguistics methodology provides powerful resources for investigating patterns of language in contemporary discourse. To study the lemma CLIMATE CRISIS in the media discursive space, a method was used which is determined by the purpose and objectives of the study. This adopted perspective combines *discourse analysis* and *contextual-interpretive analysis* which were used to identify and isolate linguistic modules of the lemma CLIMATE CRISIS in all media discourse. Such explorations also enable us to study specific means of verbal representation of the lemma CLIMATE CRISIS in media texts. Database analysis involves drawing up indices of the studied media texts, subsequently processing them through software such as "Sketch Engine" and then comparing the results of analysing obtained samples.

Corpus analysis was made the main means of studying the lemma CLIMATE CRISIS in media texts. To study the lemma CLIMATE CRISIS's evaluative value, semantic prosody was employed. The method of *interpretive analysis* was used to speculate on the results obtained. For relevant measurement indicates the media text lured towards time and space, and huge disparity demotes significance.

The first stage of our research included the formation of a sample, namely the selection of media texts: corpora of newspaper articles from the British press The Guardian 2024-2025 (300 articles, 435 thousand words) of the Climate Crisis section.

At the second stage, we used corpus analysis to analyze frequency and key lexical units, as well as to track trends in their use in media texts to identify CLIMATE CRISIS in media discourse.

At the third stage, discursive and contextual-interpretative analyses and a statistical method were applied, namely, the isolation of text corpora to trace which lexical units, word combinations, grammatical structures, etc. make the lemma CLIMATE CRISIS unique in media discourse.

The fourth stage of the research involved the use of semantic prosody to study the evaluative value of the lemma CLIMATE CRISIS in media texts.

At the fifth stage of this exploration, quantitative analysis was used to summarize the results obtained and a comparative method to identify common and distinct trends of the CLIMATE CRISIS lemma.

2.1. Corpus studies of media

Corpus linguistics has emerged as a valuable approach for studying media language over the past two decades, combining quantitative and qualitative methods (Werner & Michael, 2024). It involves computer-aided analysis of large collections of texts or transcripts (Werner & Michael, 2024), offering insights into language use patterns across time and social contexts (Stubbs & Halbe, 2012). Corpus techniques, such as word lists, keywords, collocates, and concordances, enable researchers to identify high-frequency lexical units and strategic text extracts for interpretative analysis (Werner & Michael, 2024). This approach facilitates the reconstruction of frames in media discourse by detecting framing devices and reasoning devices (Werner & Michael, 2024). Corpus linguistics represents a middle-ground empirical

approach that integrates quantitative and qualitative perspectives without requiring extensive computational skills (Werner & Michael, 2024). Its application in media and journalism studies can contribute to the field's interdisciplinary and computational turns, offering a valuable addition to scholars' methodological toolbox (Werner & Michael, 2024).

Corpus linguistics has emerged as a powerful method for analyzing media discourse, offering unique insights into language use and representation. Researchers employ corpus-assisted discourse studies (CADS) to examine large-scale patterns and detailed linguistic features in news texts (Marchi, 2022). This approach has been applied to various topics, including the war in Ukraine, revealing the prevalence of emotionally charged vocabulary and specific lexical categories (Bilyk, 2023). Corpus methods enable the identification of discursive strategies, reporting styles, and changing news values (Baker, 2015). Recent studies have utilized advanced corpus tools to investigate the linguistic representation of Ukraine in English-language media, employing keyword analysis and textual semantic analysis to uncover discourse themes and semantic prosody (Albota, 2024). These corpus-based approaches provide valuable insights into media discourse that would be difficult to obtain through other methods, allowing researchers to analyze large volumes of text and reveal hidden meanings and linguistic conventions.

It is also necessary to emphasize that corpus linguistics is seen not just as a theory but also as a methodology for finding and analyzing quantitative and qualitative linguistic data. Also, corpus-based studies help to investigate any linguistic patterns to show how often they occur and to identify situational influences that determine variance (Krieger, 2003). Corpus based research also makes it possible to compare two or more corpora of particular types of discourse in order to develop their distinctive characteristics as well as differences and similarities.

Corpora, in fact, are the actual methods and instruments necessary for an in-depth comparison. Of course, it is worth noting that there are other tools available to study corpora, and you can get quick and dirty data. On one hand, one can submit quantitative information about how often the lemma (the word we are interested in) is used. Qualitative analysis is also feasible on the other hand. Research into media discourse is corpus-friendly. We can use corpora to examine what is different and what is the same between those, and also between the same newspapers. Corpus studies need to demonstrate representativeness, give examples, and also draw on usable data.

Corpus linguistics utilizes computer-assisted methods to analyze large quantities of authentic language data, providing empirical support for linguistic research (Stubbs & Halbe, 2012). This approach enables researchers to investigate language use across time and social contexts, revealing patterns that may not be apparent to native speakers (Stubbs & Halbe, 2012). Advances in technology have expanded the capabilities of corpus analysis, allowing for complex calculations on extensive texts in minimal time (Dunn, 2022). Natural language processing techniques, such as text classification and similarity models, can extend corpus linguistics to very large corpora (Dunn, 2022). Corpus analysis provides valuable

data for linguistic research, including frequency information and metainformation about text origins and genres (Kubrak, 2020). The development of electronic corpora has revolutionized language research since the 1950s, with early examples like the Brown Corpus and LOB corpus paving the way for numerous language studies (Ide, 2007).

Corpus linguistics studies linguistic phenomena based on processing a large number of texts using special computer programs; such text arrays are called corpora (Bober et al., 2021).

Thus, it can be noted that corpus linguistic studies can be considered a type of discourse analysis, since they are aimed at describing the use of language units in a certain context. For example, words are described in relation to other words that have a high frequency of use with them (collocations), that is, they are often found in a certain context.

It is worth noting that modern corpus linguistics necessarily deals with word combinations. This is why in corpus linguistics, word combinations are of primary importance when it comes to language structure as well as meaning. There are many different definitions of a word combination, which, for example, is defined as “a habitual and repetitive juxtaposition of semantically related words” (Zhukovska, 2022). Word combinations can reveal a variety of structures, their components, as well as syntactic and semantic relations connecting their components. In addition, the concept of a word combination can also be characterized as a combination of two words (Bartsch, 2004).

To analyze the discourse of media texts, corpora of articles from the British socio-political press and tabloids, namely The Guardian, were collected. The materials were taken from articles from the above-mentioned newspapers (<https://www.theguardian.com/environment/climate-crisis>).

A number of procedures and programs are used when creating a corpus, such as tokenization, lemmatization, and stemming (Makhachashvili & Bilyk, 2019). Tokenization is the process of breaking down text into separate meaningful units, such as words or symbols. Lemmatization is the process of isolating the initial form of a word, taking into account its other word forms. In many languages, a word can have different forms depending on the context or grammatical features, which is called inflexion. In many languages, a word can have different forms depending on the context or grammatical features, which is called inflexion. For example, the English word “climate” has the following forms: “climates”, “climate's”, “climates” (MacMillan). The base form of “climate”, recorded in a dictionary, is called the lemma. Lemmatization is the process of combining different forms of a word in such a way that they are considered as one word during analysis. For example, the second column in the proposed list is lemmatized (Table 1).

The word	Lemma	Part of speech
The	the	Article
climate	climate	Noun
crisis	crisis	Noun
is	be	Verb

one	one	Numeral
of	of	Preposition
the	the	Article
biggest	big	Adjective
challenges	challenge	Noun
facing	face	Verb
humanity	humanity	Noun
today	today	Adverb

Table 1. Lemmatization

A process distinct from lemmatization is called stemming. It involves finding the stem (base) of a word without considering the context. Unlike lemmatization, stemming does not consider the meaning of the word or its part of speech, but simply separates affixes or suffixes to isolate the base. However, stemmers are simpler to implement and process data faster. For example, the token "climates" corresponds to the lemma CLIMATE, but this is omitted in stemming. The lemma CLIMATE is the base form for the token "climates" and this correspondence will be found in both stemming and lemmatization.

The corpus, built on 300 articles from The Guardian (Climate Crisis section), consists of 435,328 words. Among the units in corpus analysis, tokens are distinguished, which count the total number of words in the studied corpus of texts, as well as types, which reveal the number of unique word forms in the corpus, showing the diverse vocabulary under study (McEnery & Hardie, 2011). Thus, the studied corpus contains 507,740 tokens and 19,486 types.

Moreover, it is important to take into account the Type-Token Ratio (TTR), which is calculated as follows: $\text{number of types} \div \text{number of tokens} \times 100 = \text{percentage ratio of types to tokens}$ (Wodak, 2007). The greater the number of different word types in relation to their total number (tokens), the more lexically diverse the vocabulary of the studied text corpus is.

However, when calculating the type-token ratio, one may encounter the following issue: in large corpora, frequently used words such as the occur more often, and the likelihood of encountering new word types decreases accordingly. Thus, this measure tends to reflect the size of the corpus rather than its actual lexical diversity. To address this issue, researchers often use the Mean Type-Token Ratio (Mean TTR). For instance, the ratio can be calculated for every 2,000 words in the corpus, and then the average value is computed (Baker, Hardie & McEnery, 2006).

For instance, if we calculate the type-token ratio for a corpus of The Guardian articles from 2024–2025, the lexical diversity coefficient will amount to 3.8%.

2.2 Applying Sketch Engine

The Sketch Engine online platform for corpus analysis offers a wide range of statistical methods for the study of text corpora. Among these tools, the following can be highlighted: concordance, which allows us to search the corpus for a word form, lemma, or phrase; word frequency lists, which provide information about the frequency of occurrence of individual words or other lexical units in the corpus;

keywords and key phrases in comparison to other corpora; thesaurus, which generates a distributional list of synonyms based on collocations — that is, it identifies words that appear in similar contexts, which can assist in synonym search and the identification of semantic relationships between words (Kocincova, Baisa, Jakubicek, & Kovar, 2015).

The online corpus analysis tool Sketch Engine provides extensive statistical methods for analyses of text corpora. One of these tools is e.g. the concordance, which can be used to generate a word form, lemma or phrase search in the corpus; a list of lexical items by means of which we acquire information about how often particular words or other lexical items are used in the corpus; keywords and keyword-expressions in comparison to other corpora; the so-called Vocabulary, which is a distributive list of words in the context, i.e., it looks up where a given word occurs in the same context and the thesaurus, which is a distributive dictionary of synonyms, which uses the collocations, i.e. words similar to each other occurring in the similar context, which can help to look for synonyms or to establish semantic relations among the words (Kocincova & Baisa & Jakubicek & Kovar, 2015). When working with a corpus, we usually use special software applications, concordancers and corpus managers, which offer us a range of resources to help find the information that we are looking for in the corpus.

Concordancers, also, are a class of software that facilitates corpus work. A corpus manager is a more complex tool to use all the functionalities of your corpus. It has routines for getting data about the corpus, searching inside it, and returning to the user in forms, which are easy to use. The results of the search are then displayed in KWIC (Key Word In Context) style, in which the words that have been found are depicted in context in a grid, with the search word at the centre, providing an analysis of the context of use and relationships between words.

The results are displayed in a concordance where each search item is shown in context (hence corpus managers are also known as concordancers) and appear with statistical information. The former are potentially features of individual lexical items or lexical features for more than one lexical item. A lot of systems offer the possibility of changing the display of information (left and right context length, to determine the quantity of displaying and sequence in which it is sorted, presence and absence of linguistic and extralinguistic features and so on) (Zhukovska, 2013). Here is an example of a concordance for the word CLIMATE (Picture 2.1)

	Details	Left context	KWIC	Right context
1	doc10	metted that down towards 100cm, almost half the historical average, according to Australia National University	climate	scientist Georgy Falster <5>“I grew up skiing at Perisher and ... two metres in August was very normal,” st
2	doc10	er-altitude ski resorts to close weeks early and this year's season is racing towards a similar end, according to	climate	scientist David Karoly, who is a councillor with the Climate Council and an avid skier <5>“The potential for i
3	doc10	season is racing towards a similar end, according to climate scientist David Karoly, who is a councillor with the	Climate	Council and an avid skier <5>“The potential for consecutive years of early snowfield closures had locals, bi
4	doc10	eteorology is forecasting snow across alpine sites in Victoria and NSW in the coming week <5>“But current	climate	forecasts indicate that shorter winters and rising temperatures will continue to cut snowfalls and shorten ski
5	doc10	government support to adapt and become less reliant on shrinking snowfields <5>“Unless we get on top of	climate	change, unless we start getting coordinated action to adapting to climate impacts in the alpine, we're going to i
6	doc10	ids <5>“Unless we get on top of climate change, unless we start getting coordinated action to adapting to	climate	impacts in the alpine, we're going to see some negative impacts,” he said <5>“It's pretty devastating to go
7	doc10	pretty devastating to go out there and see what it's like “<5>“Massive Attack castigate music industry over	climate	inaction “We don't need to talk <5>“We need to act” As pop stars fly on private jets and haul stage sets are
8	doc10	nage weakened by live music <5>“A home town Bristol show on Sunday, titled – a reference to the 2015 UN	climate	treaty that asked countries to keep global heating to under a – will be 100% powered by renewable energy, in
9	doc10	rish folk group Linkum and the actor Samantha Morton's solo music <5>“Del Naja describes Act 1.5 as a “	climate	action accelerator”, adding “Some people think the whole point of our sector is to tell people about (the clim
10	doc10	climate action accelerator”, adding “Some people think the whole point of our sector is to tell people about (the	climate	crisis), as if it's not one of the most widely reported issues globally of our time <5>“We don't need to talk ab
11	doc10	hls such as Unfinished Sympathy and Teardrop, commissioned a report by the decarbonisation specialists for	Climate	Change Research, which the group shared as a to super-low carbon live music <5>“The Act 1.5 festival is i
12	doc10	request, the O2 Arena in London only during the singer's 2022 residency, and she has announced an array of	climate	actions for her next tour <5>“In June, Coldplay reported that a 12-point had led to a 59% reduction in carb
13	doc10	for us, and whatever we do next will be different “<5>“Visits to Japan's only Shinto weather shrine surge as	climate	crisis bites Amid the hustle and bustle of Tokyo, the Kisho Jinja weather shrine has become a destination for a
14	doc10	idwenter”, says Yuchi Yamada, a parishoner in his 50s <5>“I'm worried about flooding and other effects of	climate	change,” says another visitor, Shota Suzuki, 35 <5>“Summers are getting more intense, and the heat is af
15	doc10	u, a priest and certified weather forecaster at the shrine, says the number of worshippers concerned about the	climate	crisis and praying for stable weather seems to have increased over the past two to three years <5>“In the
16	doc10	ppers are praying for things to calm down a little, and that they will come to the shrine to worship “<5>“The	climate	crisis has battered Japan with record high temperatures, increased risk of landslides and flooding, and in Aug
17	doc10	r name <5>“Parishoner Yamada says, “I'm concerned that the remarkable abnormal weather and unstable	climate	in recent years are causing great losses to agriculture <5>“With extreme heat, flooding due to heavy rain, v
18	doc10	and it can negatively affect people's health,” says Mikako Matsui, the head priest at Koeng Hikawa <5>“As	climate	change is the result of human activities, it's incumbent on us to work together to do something about it using h
19	doc10	sent on us to work together to do something about it using human knowledge “<5>“Heat engine” fuelled by	climate	crisis bringing blast of summer weather to Australian winter Australia is on track to face its hottest August on re
20	doc10	ions intense winter heat in future <5>“The lengthening of spring and summer is only going to intensify with	climate	change,” she said <5>“Tackling the taboo of population growth Finally, a rational article in a national newsp

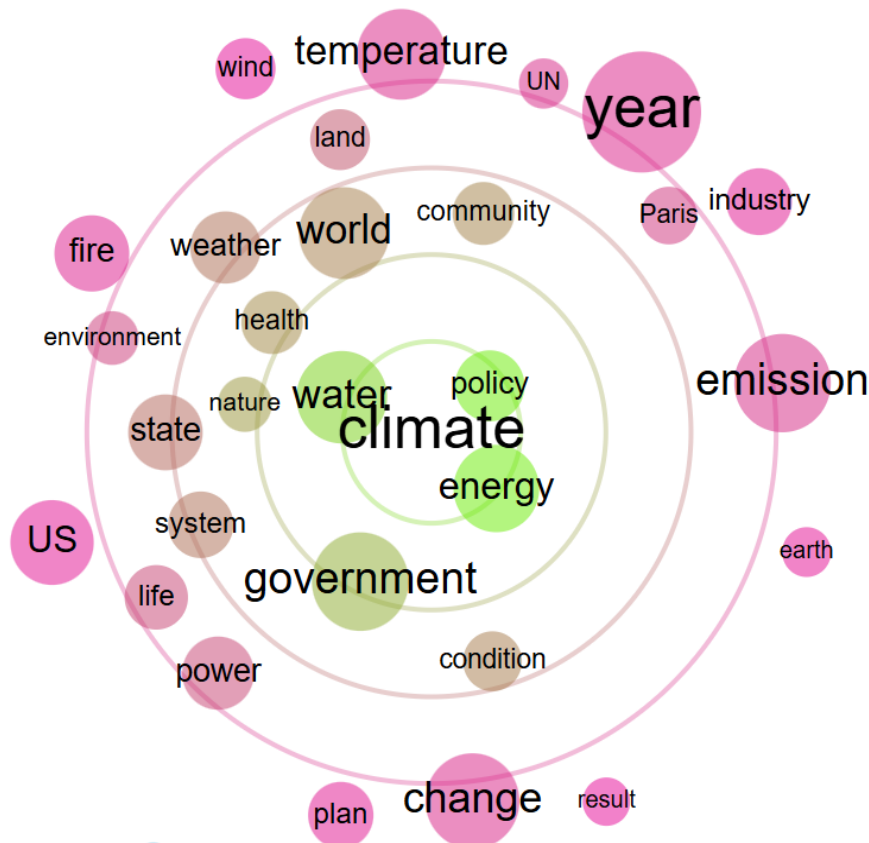
Picture 2.1. Concordance for the word CLIMATE

Another important function of working with the corpus is the frequency of word usage. Usually, the most frequently used words in English-language texts are articles, personal pronouns and auxiliary verbs. From the constructed corpus of The Guardian articles 2024–2025, we see that the trend is maintained (Picture 2.2). At the same time, when analyzing the frequency of words in the corpus, one should take into account not only the number of words (tokens) used but also the diversity of these words (types), i.e. the coefficient of lexical diversity.

Lemma	Frequency ? ↓	Lemma	Frequency ? ↓	Lemma	Frequency ? ↓
1 the	13,753 ***	11 have	2,873 ***	21 with	1,349 ***
2 ,	12,417 ***	12 that	2,780 ***	22 we	1,340 ***
3 .	9,709 ***	13 [number]	2,697 ***	23 not	1,285 ***
4 be	8,505 ***	14 for	2,226 ***	24 from	1,246 ***
5 to	6,712 ***	15 say	2,016 ***	25 -	1,176 ***
6 of	6,231 ***	16 it	1,891 ***	26 at	1,067 ***
7 and	6,137 ***	17 on	1,798 ***	27 but	1,016 ***
8 "	5,219 ***	18 as	1,523 ***	28 this	991 ***
9 a	5,050 ***	19 climate	1,473 ***	29 more	943 ***
10 in	4,603 ***	20 by	1,379 ***	30 they	809 ***

Picture 2.2 List of the most frequently used words in The Guardian corpus of articles 2024–2025

In addition to word frequency, our research used a corpus research function called thesaurus. A thesaurus is a list of words with their frequency and similarity scores. The main function of a thesaurus is to find similar words, namely, which words occur in the same context as the analyzed word. In this way, Sketch Engine also selects collocates in the same grammatical relations (Konincova, 2015). In addition, this function makes it possible to visualize words similar in context in the form of a cloud (Picture 2.3). Thus, in a word cloud, the core is represented by the lemma of a given word, and the lexemes around it are words that belong to the same semantic field as it or have a similar context of use. The frequency of use of a word affects its location in the cloud: the higher the frequency, the closer the word is to the centre of the cloud. In the given word cloud for the lexeme CLIMATE, the following lexemes are distinguished: *policy, energy, water, government, nature, health, community, world, condition, system*, and others. The innovative component of this function is that the user has the opportunity to explore the semantic connections of the lexeme and its interaction with other words in the context.



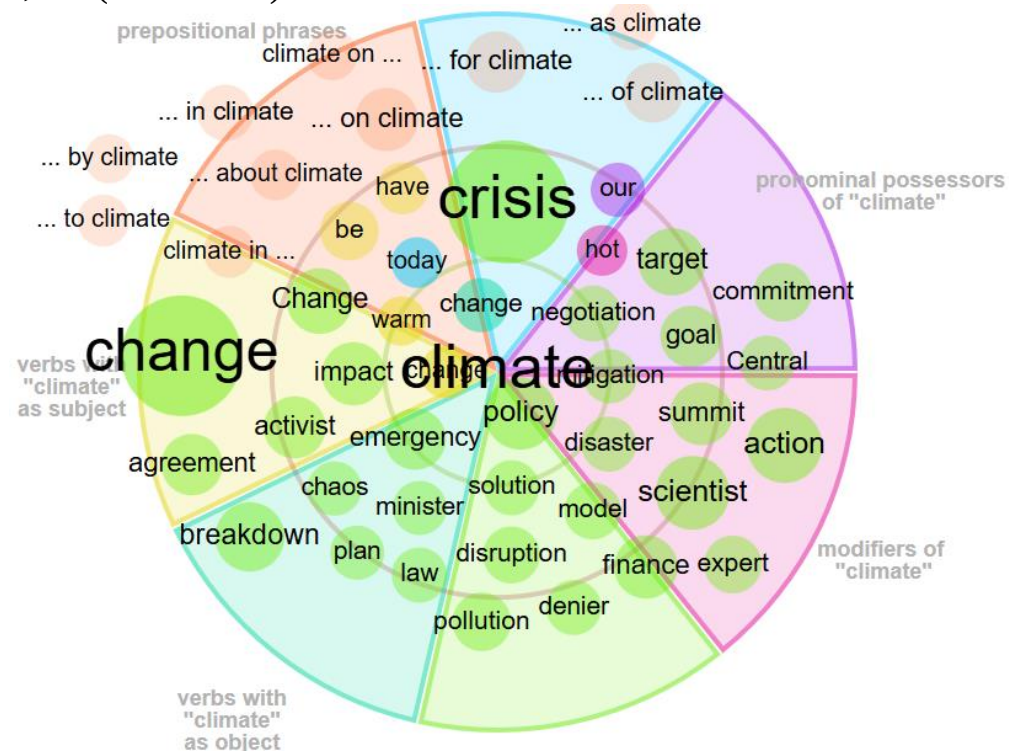
Picture 2.3 Thesaurus of the word CLIMATE in the corpus The Guardian 2024-2025

In my study, in addition to the thesaurus, such functions as clustering - grouping lexical units of the thesaurus into clusters (lexico-semantic groups) were used; collocation - automatic detection of collocations that often occur together in the text and have semantic or grammatical connectivity; wordsketch - detection of collocations (collocations limited by a syntactic model). All of them reveal semantic connections between lexemes in different ways, tracking them in a given corpus. The N-gram tool is a powerful tool for corpus analysis, which allows you to study the frequency and distribution of lexical ties of types and lemmas in the corpus. Thus, the CLIMATE N-grams were isolated in the corpus of The Guardian articles of 2024–2025 (Picture 2.4). Using N-grams, the grammar and semantics of language were investigated, namely, patterns in the use of grammatical structures were identified to investigate how words are semantically related.

N-gram	Frequency ?	N-gram	Frequency ?
1 the climate crisis	215 ...	14 to the climate crisis	19 ...
2 of the climate	55 ...	15 by the climate crisis	18 ...
3 of climate change	52 ...	16 climate crisis and	17 ...
4 of the climate crisis	39 ...	17 Paris climate agreement	17 ...
5 climate change be	35 ...	18 the climate crisis and	16 ...
6 climate change and	30 ...	19 on climate change	16 ...
7 climate crisis be	26 ...	20 the climate emergency	15 ...
8 to the climate	25 ...	21 a climate scientist	15 ...
9 on the climate	25 ...	22 about the climate crisis	14 ...
10 the climate crisis be	24 ...	23 on climate Change	14 ...
11 to climate change	23 ...	24 climate scientist at	14 ...
12 by the climate	23 ...	25 that climate change	13 ...
13 about the climate	21 ...	26 the Paris climate	13 ...

Picture 2.4. N-gram of the CLIMATE corpus in The Guardian 2024–2025

Very useful for our investigation is the lexical template function in Sketch Engine – in it we find a one-page summary of the use of the given word with collocates in some grammatical relations. First, the candidate collocations are extracted, and then they are ranked based on a measure of lexicographic association that uses a scale (Rychlý 2008). So, by searching for the lemma CLIMATE we have verbs with which CLIMATE is used as an adjunct: *be*; verbs with which CLIMATE is used as a subject: *change, warm, have, be*; nouns modified by CLIMATE: *crisis, change, action, scientist, policy, breakdown, target, finance, impact, summit, activist*; etc (Picture 2.5).



Picture 2.5 The word sketch of the lemma CLIMATE in The Guardian

2.3 Discourse and Interpretation in Methodology

The interdisciplinary nature of modern science, it could be said, is of these methods which vary by topic. The methodological tools of linguistics are also coming into widespread use among people who belong to intelligence organisations or science as a whole. Conversely, linguists are actively exploring quantitative methods for research purposes and blending them with their traditional toolkit.

Discourse analysis is an interdisciplinary method for studying how language is used in various social contexts (Manzoor et al., 2019; Macrae, 2020). The practice examines how language reflects—and is reflected by—social practices, power relations and the construction of knowledge (Macrae, 2020; Schäffner, 2019). Researchers use many different methodologies: among them are Foucauldian discourse theory, critical discourse analysis, and Gramscian approach to study the semiotic dimensions of power in social spaces (Macrae, 2020). Discourse has been employed in many academic disciplines such as media studies, politics and journalism (Manzoor et al., 2019; Schäffner, 2019). In sport and exercise research, critical discourse analysis (CDA) is an issue-oriented cross-disciplinary approach drawing on a variety of epistemological assumptions and theoretical models (McGannon, 2016). While there is no one prescribed methodology for CDA, different researchers have taken different approaches to examining social and political contexts around discourses (McGannon, 2016; Macrae, 2020).

Discourse analysis is based on the premise that meaning, and therefore social reality, emerges from interconnected sets of texts called discourses. Social reality is not something we discover, but something we actively create through meaningful interaction. Discourses contain new ideas. Discourses are “concrete,” that is, they create material reality in the practices they appeal to. Since discourses are embodied in texts, discourse analysis involves the systematic study of texts.

Discourse analysis examines how language conveys social and cultural perspectives, identities, and contexts (Gee, 2015). It explores how grammar choices reflect ontological beliefs and build social relations. Gee proposes that discourse analysis can bridge cultures and enhance understanding by considering contested meanings and different conceptual systems (Wodak, 2016). The concept of “Big ‘D’ Discourse” emphasizes how language use is part of a larger conversation among historically formed social groups (Gee, 2015). Discourse analysis encompasses various approaches, from Critical Discourse Analysis to Multimodal Discourse Analysis, and has applications in educational and institutional settings (Gee & Handford, 2023). It considers how language interprets sociocultural contexts, including elements such as topic, purpose, and participants, to understand the values imposed by the addresser on the addressee.

The purpose of discourse analysis is to study how language is used to create social meaning and relationships. By systematically and carefully analyzing language use through discourse analysis, we gain information about the social and cultural factors that shape communication and interaction. That is, discourse analysis combines text and context analysis, which makes it possible to understand how communication processes function because discourse is a social practice. The

outlined research method is used to understand how the meanings contained in the text can lead the addressee to other conclusions that are not intended by the addressee

The discourse analysis method helps to study the linguistic components of the studied texts, including media texts, to identify the essence of the reader's interpretation of the information obtained from a particular article (Povoroznyuk & et al. 2022). Thus, discourse analysis in our study involves studying the text, namely The Guardian articles, taking into account social and cultural factors.

The study of discourse examines more than words on a page, seeking to understand the deeper implications within and across texts. Contextual analysis considers how a piece relates to the wider conversation and culture around it, illuminating underlying intentions, assumptions, and appeals. Two key steps in this approach are contextualization and interpretation. First, we identify the broader setting addressed, such as the issues or events forming the backdrop for the discussion. This framing then guides interpretation, as we deduce the author's perspective and how they aim to influence readers. My own research demonstrates this process. Newspaper articles on a topic were divided first by overall theme. Then, a theme group underwent deep interpretation, isolating distinctive language and revealing each article's unique slant. Together, these analyses uncover layered meanings beyond surface meaning, charting intertextual webs and their real-world reverberations.

Table 2.2 Topics of text passages that contain collocations with CLIMATE

Topics of text passages that contain collocations with CLIMATE		
Climate change	<i>Similar warm weather last year forced lower-altitude ski resorts to close weeks early and this year's season is racing towards a similar end, according to climate scientist David Karoly (The Guardian, 2024)</i>	<i>Unless we get on top of climate change, unless we start getting coordinated action to adapting to climate impacts in the alpine, we're going to see some negative impacts(The Guardian, 2024)</i>
Culture and climate responsibility	<i>Massive Attack castigate music industry over climate inaction: 'We don't need to talk. We need to act'(The Guardian, 2024)</i>	<i>Del Naja describes Act 1.5 as a "climate action accelerator", adding: "Some people think the whole point of our sector is to tell people about [the climate]..(The Guardian, 2024)</i>
Climate crisis	<i>says the number of worshippers concerned about the climate crisis and praying for stable weather seems to have</i>	

	<i>increased over the past two to three years (The Guardian, 2024)</i>	
Causes and consequences of climate change	<i>which were made at least four times more likely and 40% more intense by human-caused climate disruption, by international scientists. (The Guardian, 2024)</i>	

Thus, in the above examples, we see that the topic of health directly concerns humanity in general, and the lemma CLIMATE is represented by various lexical units (*climate scientist, climate impacts, climate inaction, climate action, climate crisis, climate disruption*).

The method of contextual-interpretive analysis focuses not only on the formal aspects of language, but also on its meaning and functioning in communicative situations. An important aspect of this research method is the understanding that the meaning of linguistic expressions can vary depending on the context and interpretation by the speaker and listener, and in our study by the author of the article and the reader. The contextual-interpretive method of text analysis is characterized by objective, systematic and quantitative approaches. We consider it objective in the sense that analytical categories are defined so precisely that they can be coded differently and get the same results. Systematic, because clear rules are used to include or exclude content or analytical categories. And quantitative, because the results of contextual-interpretive analysis are subject to statistical analysis.

Statistical methods play a crucial role in speech, language, and hearing sciences research, enabling the identification of patterns in language units and complex relationships in data (Oleson et al., 2019). These methods have evolved to address challenges in analyzing behavioral data from humans, offering more flexibility and enabling researchers to ask more informative questions (Oleson et al., 2019). Programs that allow us to work with the corpus automatically extract keywords, using statistical values such as mutual information (MI), log-likelihood, T-score, etc. (Brezina & et al., 2015) (Picture 2.6)

	Word	Cooccurrences ?	Candidates ?	T-score	MI	LogDice ↓
1	☐ change	270	374	16.30	6.96	12.23 ...
2	☐ crisis	254	318	15.82	7.11	12.19 ...
3	☐ the	612	12,175	21.89	3.12	10.52 ...
4	☐ on	119	1,738	9.99	3.56	10.25 ...
5	☐ and	267	5,986	14.22	2.95	10.20 ...
6	☐ .	389	9,709	16.87	2.79	10.16 ...
7	☐ action	54	162	7.22	5.85	10.08 ...
8	☐ of	246	6,219	13.39	2.77	10.03 ...

	Word	Cooccurrences ?	Candidates ?	T-score	MI	LogDice ↓
11	☐ to	223	6,668	12.35	2.53	9.81 ...
12	☐ Change	38	41	6.13	7.32	9.69 ...
13	☐ The	74	1,578	7.54	3.02	9.64 ...
14	☐ for	87	2,141	8.00	2.81	9.63 ...
15	☐ is	94	2,500	8.20	2.70	9.60 ...
16	☐ by	66	1,338	7.17	3.09	9.59 ...
17	☐ about	47	559	6.38	3.86	9.57 ...
18	☐ policy	34	111	5.72	5.73	9.46 ...
19	☐ a	118	4,144	8.66	2.30	9.43 ...
20	☐ in	119	4,245	8.66	2.28	9.41 ...

Picture 2.6 Concordance of The Guardian

By combining textual interpretation with corpus tools, we are able to trace patterns in the corpus of media texts more precisely. What emerges is not just a picture of how the climate crisis is reported, but how language itself plays a role in defining public discourse. In this sense, discourse analysis remains essential, not just as a method, but as a way of seeing how meaning is made and how it matters.

Results

3.1 Corpus Analysis of The Guardian

In order to achieve the goal of the study, an analysis of the corpus of newspaper articles from The Guardian, built using the computer program Sketch Engine, was conducted, in particular, collocations with CLIMATE, which were used in newspapers during 2024-2025, were considered. Critical discourse analysis was used to study word combinations with CLIMATE in English-language media discourse; corpus analysis was used to identify keywords used with CLIMATE in media discourse corpora; contextual-interpretive analysis was used to identify the features of the discursive use of collocations with CLIMATE in media discourse; quantitative analysis was used to interpret and compare the results. The collocations CLIMATE+Noun were selected for the study. N-grams reflect word combinations with CLIMATE in The Guardian newspaper in issues of 2024-2025.

For the study, a corpus was created and processed using the Sketch Engine program, namely The Guardian 2024-2025. The corpus of articles from The Guardian 2024-2025 consists of 435 thousand words and 504 thousand tokens.

Table 3.1 Main themes of the use of the lemma CLIMATE in the discourse The Guardian

Themes:	The Guardian
Climate crisis and its consequences	<i>Planet-heating pollutants in atmosphere hit record levels in 2023 (The Guardian, 2024)</i> <i>Heat-related health risks: miscarriages, premature births, cognitive damage (The Guardian, 2024)</i> <i>Carbon emissions of richest 1% increase hunger, poverty and deaths (The Guardian, 2024)</i> <i>Ineffectual carbon offsets slowing path to ‘real zero’ (The Guardian, 2024)</i> <i>If fossil fuel dependency is a global addiction...(The Guardian, 2024)</i> <i>As wildfires rage, what is the smoke doing to our health and bodies?(The Guardian, 2024)</i> <i>Water temperatures near UK last year were hottest on record (The Guardian, 2024)</i>

	<i>Poorer people bear brunt of extreme heat in Europe (The Guardian, 2024)</i> <i>Corn sweat: crop moisture amplifies humidity and heat in the US Midwest (The Guardian, 2024)</i> <i>Heat-related deaths have increased by 117% in the US since 1999(The Guardian, 2024)</i>
Financial policy, green economy	<i>Oxfam: Tax the super-rich to fight climate crisis (The Guardian, 2024)</i> <i>The woman who told Labour it didn't need to spend £28bn on green investment(The Guardian, 2024)</i> <i>Cop29: climate threats to Amazon, Atlantic currents, infrastructure (The Guardian, 2024)</i> <i>From Scotland to Malawi: loss and damage fund in action (The Guardian, 2024)</i> <i>UN chief: we're out of time on climate crisis (The Guardian, 2024)</i>
Climate activism and philosophy of change	<i>If fossil fuel dependency is a global addiction... (The Guardian, 2024)</i> <i>Dear ministers, I am a climate crisis campaigner: nationalise me right now (The Guardian, 2024)</i>
Energy and transition technologies	<i>Wind and solar energy overtake fossil fuels in EU.(The Guardian, 2024)</i> <i>Ineffectual carbon offsets hindering real zero(The Guardian, 2024)</i> <i>Fast-growing demand for energy transition metals (The Guardian, 2024)</i> <i>Green groups urge Ed Miliband to scrap Drax subsidies (The Guardian, 2024)</i>
Health and environmen	<i>Wildfire smoke: health impacts from dementia to low birthweight (The Guardian, 2024)</i> <i>Extreme heat and poverty in European cities (The Guardian, 2024)</i>

		<i>Climate change and corn sweat: humidity effects (The Guardian, 2024)</i>
Nature conservation	and	<i>Coral bleaching: 73% of world's coral reefs affected (The Guardian, 2024)</i> <i>Methane and deforestation threats in Amazon (The Guardian, 2024)</i>

Given the corpus analysis of The Guardian articles covering the topics of environment, politics, economics and health, we can conclude about the dominant theme based on quantitative and qualitative analysis of thematically marked vocabulary, collocations, thematic clusters and syntactic structures. Frequency of use of thematic keywords and word combinations, for example, *climate crisis*, *carbon emissions*, *heat*, *wildfires*, *fossil fuels*, *inequality*, and *adaptation*. Connectivity of keywords, for example, *climate + action/policy/impact*, *heat + deaths/waves/stress*.

Analyzing the corpus of articles, among the various types of word combinations provided by the n-gram, we will consider the collocations CLIMATE+Noun in the socio-political press The Guardian and the frequency of their use. The table below presents the collocations most frequently used with CLIMATE in The Guardian in 2024-2025.

Table 3.2 Collocations with CLIMATE in The Guardian

	Lempos	Frequency
1.	Policy	192
2.	Energy	329
3.	Water	379
4.	Government	444
5.	Nature	94
6.	Health	137
7.	Community	138
8.	World	373
9.	Condition	120
10.	System	161

The study of discourse based on the above collocations allowed us to reveal the peculiarities of the thematic reproduction of CLIMATE in the newspaper.

Table 3.3 Collocations and their thematic representation in discourse

	Collocation:	Topics of discourse
1.	CLIMATE+policy	Activities to develop and implement strategies, laws and agreements at local, national and

		international levels to combat climate change, including emission reductions, adaptation and financing.
2.	CLIMATE+energy	Discussing the role of energy, its production, consumption and transition to renewable sources, as well as the impact of energy policies on climate.
3.	CLIMATE+water	The relationship between climate change and water resources, including issues of droughts, floods, melting glaciers, sea levels and impacts on water supply and agriculture.
4.	CLIMATE+government	The responsibilities and actions of governments at different levels (local, national, international) in responding to climate challenges, including legislation, international negotiations and public initiatives.
5.	CLIMATE+nature	The impact of climate change on natural ecosystems, biodiversity, forests, oceans and wildlife, and the role of nature in mitigating the effects of climate change.
6.	CLIMATE+health	The impact of climate change on human health, including the spread of disease, heatstroke, nutritional problems and mental health, and the need for health systems to adapt.
7.	CLIMATE+community	The impact of climate change on local communities, their vulnerability, adaptation, resilience and participation in solving climate problems.
8.	CLIMATE+world	The global dimension of the problem of climate change, international cooperation, geopolitical consequences and the responsibility of different countries.
9.	CLIMATE+condition	The current state of the climate, its changes, scientific data, forecasts

nuanced coverage of climate issues, which considers both the system and human sides to the crisis.

3.2 Prepositional Phrases and Conceptual Framing

Examining climate discourse uncovers significant linguistic trends in using the term CLIMATE across various grammatical forms. In analysing prepositional phrases associated with "climate," the most frequently observed constructs are "of climate," "to climate," "on climate," "by climate," "with climate," "for climate," "in climate," "from climate," "about climate," and "as climate." The dominance of "of climate" implies a perspective that interprets climate in lemmas of possession or attribution, suggesting that climate is envisioned as an entity with specific qualities instead of as an acting subject. This specific linguistic depiction may foster a sense of detachment in climate discussions, framing climate as an abstract concept rather than an urgent issue. The occurrence of the phrase "to climate" reflects a directional or goal-oriented approach to climate challenges, depicting climate as a destination or objective of actions and attention. This phrase likely supports a target-driven portrayal of climate issues, identifying climate as a focus for policy measures or community initiatives. The use of "on climate" indicates a superficial engagement with climate matters, treating climate as merely a subject or context for discourse instead of an integral part of broader environmental or social frameworks. This phrasing may reinforce an isolated perception of climate problems, distinguishing them from other social or environmental topics. Furthermore, the prevalence of "by climate" expressions implies a portrayal of climate as an actor or cause, attributing agency and causality to climate itself instead of to human behaviours or systemic influences. (Picture 3.2)

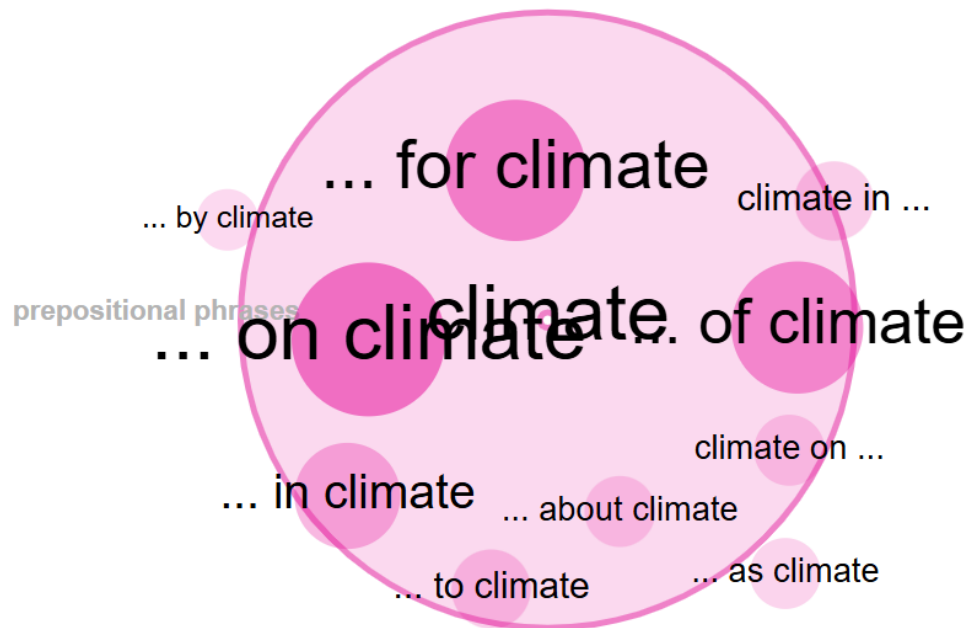
The corpus analysis of climate discourse reveals significant linguistic patterns in how the lemmas CLIMATE is used in prepositional phrases. These constructions position climate within different conceptual frameworks and relationships:

« In this week's newsletter, we have charts on climate tipping points, wildfires, what ingredients are most common in different cuisines, and a robot cutting tomatoes» (The Guardian, 2024)

«Unless we get on top of climate change, unless we start getting coordinated action to adapting to climate impacts in the alpine, we're going to see some negative impacts» (The Guardian, 2025)

«They said such areas were less able to adapt to climate damages and also hit harder by the rise in heat deaths.» (The Guardian, 2025)

«He would not say whether the US would commit greater sums to climate finance, but said it was on track to meet Biden's commitment to provide \$11bn, a target that campaigners and developing countries have said is woefully inadequate given» (The Guardian, 2025)



Picture 3.2 The n-gram of the lemma CLIMATE in The Guardian

3.3 Verbal Constructions and Agency Attribution

The examination of verbal constructions using CLIMATE as a subject reveals notable trends in how agency and causality are portrayed within climate discussions. The most common verbs associated with CLIMATE as a subject are "be," "cause," "affect," "mean," "make," "pose," "worsen," "fuel," "drive," and "bite." The prevalence of the verb "be" in this context indicates a leaning towards existential or definitional frames, where climate is defined by what it is rather than by its actions. This formulation may lead to a more static understanding of climate challenges, rather than a dynamic one. The frequent use of the verb "cause" suggests a strong causal perspective, casting climate as the responsible agent for numerous effects or outcomes. This phrasing can potentially shift focus away from human accountability for climate change, placing causality instead on climate itself rather than on human actions.

Moreover, the high occurrence of the verb "affect" emphasises impacts and consequences, portraying climate as an influencing agent on various systems or entities. This depiction may foster a consequence-oriented view of climate discussions, prioritising effects over causes or solutions. The prominence of verbs like "worsen," "fuel," and "drive" indicates a portrayal of climate as a force that accelerates or intensifies problems, suggesting that climate exacerbates existing issues rather than serving as a neutral environmental factor. This framing could contribute to an urgent or alarming perception of climate challenges, highlighting escalation and decline instead of stability or progress (Table 3.3).

CLIMATE as subject	CLIMATE as object
<i>be</i>	<i>tackle</i>
<i>cause</i>	<i>address</i>
<i>affect</i>	<i>combat</i>
<i>mean</i>	<i>cause</i>
<i>make</i>	<i>mitigate</i>
<i>pose</i>	<i>control</i>
<i>worsen</i>	<i>believe</i>
<i>fuel</i>	<i>fuel</i>
<i>drive</i>	<i>solve</i>
<i>bite</i>	<i>halt</i>

Table 3.3 The most frequent verbs modified by "climate" as object and as subject

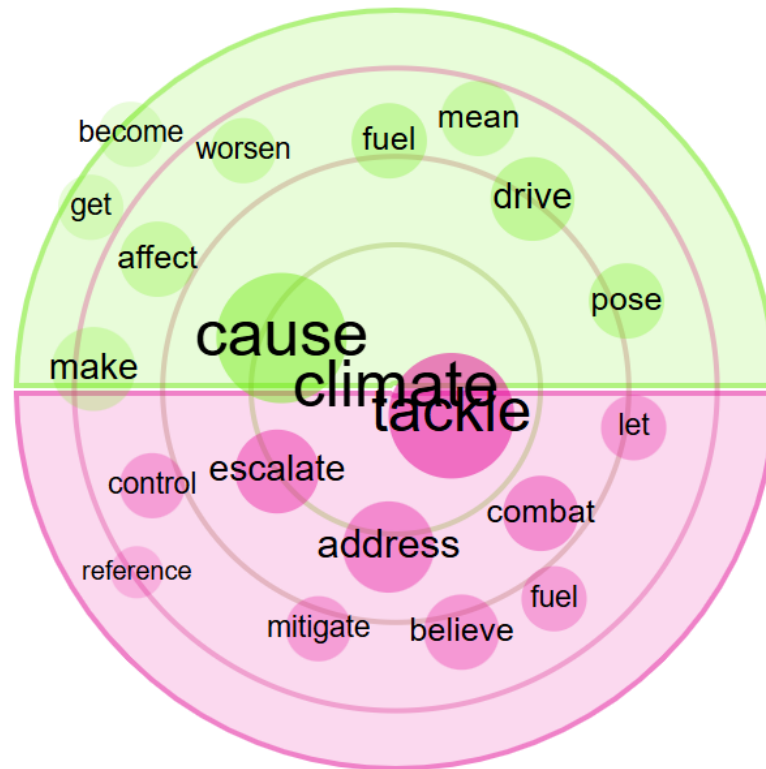
The examination of verbal constructions with CLIMATE as subject demonstrates how agency and causality are attributed to climate itself, portraying it as an active force: «*I think there is a large climate change signal in this. It would be very hard to get these temperatures to get as hot as this – without human-caused climate change*» (The Guardian, 2024) «*Climate pollution from the east coast power grid had previously been falling steadily as renewable energy pushed out coal and gas, lifting the share of solar, wind and hydro to about 40%*» (The Guardian, 2024)

The analysis of verbal constructions with CLIMATE as an object reveals how human agency is framed to climate issues, showing a tendency toward action-oriented language: «*The climate crisis, caused largely by the burning of fossil fuels, forest destruction and methane emissions, means heatwaves are increasing in frequency, duration, intensity and magnitude*» (The Guardian, 2024) «*By scaling up domestic investments in clean energy and fulfilling its fair share of climate finance to support developing countries, the UK can play its part in driving a global just transition that leaves no one behind*» (The Guardian, 2024)

Examining verbal constructions with CLIMATE as the object reveals how human agency and actions are framed regarding climate-related issues. The most common verbs used with CLIMATE include "tackle," "address," "combat," "cause," "mitigate," "control," "believe," "fuel," "solve," and "halt." The prevalence of action-oriented verbs like "tackle," "address," and "combat" indicates a framing of climate as a problem or challenge requiring direct intervention. This construction positions climate issues as solvable through deliberate human efforts. The use of verbs such as "mitigate," "control," and "halt" suggests a management-oriented perspective on climate issues, viewing climate as something that can be regulated, restrained, or contained by human actions. This framing may reinforce a technocratic approach to climate, focusing on management strategies instead of systemic change.

The inclusion of the verb "believe" with climate as the object implies a framing of climate issues based on belief or opinion rather than empirical evidence.

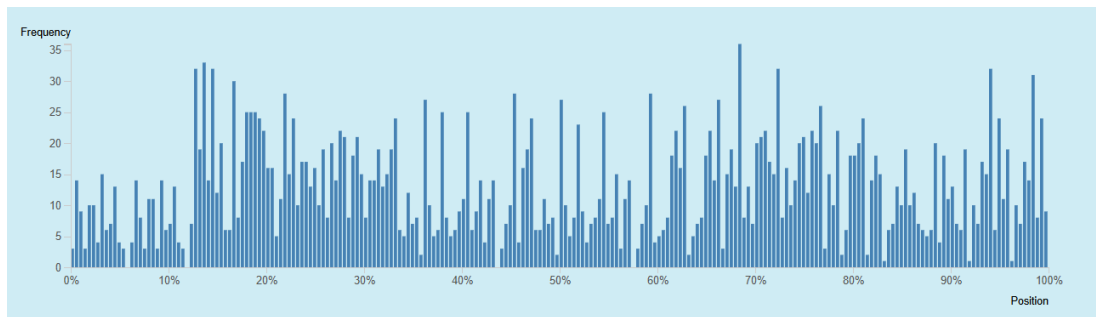
This construction may contribute to the contestation of climate science, framing climate change as a belief issue rather than an established scientific consensus. The use of "cause" with climate as the object acknowledges human causality in climate change, recognising human actions as key drivers of climate conditions. This perspective potentially instils a sense of responsibility for climate change on human activities rather than portraying it as a natural phenomenon. (Picture 3.3)



Picture 3.3 The word sketch of the most frequent verbs modified by CLIMATE as object and as subject

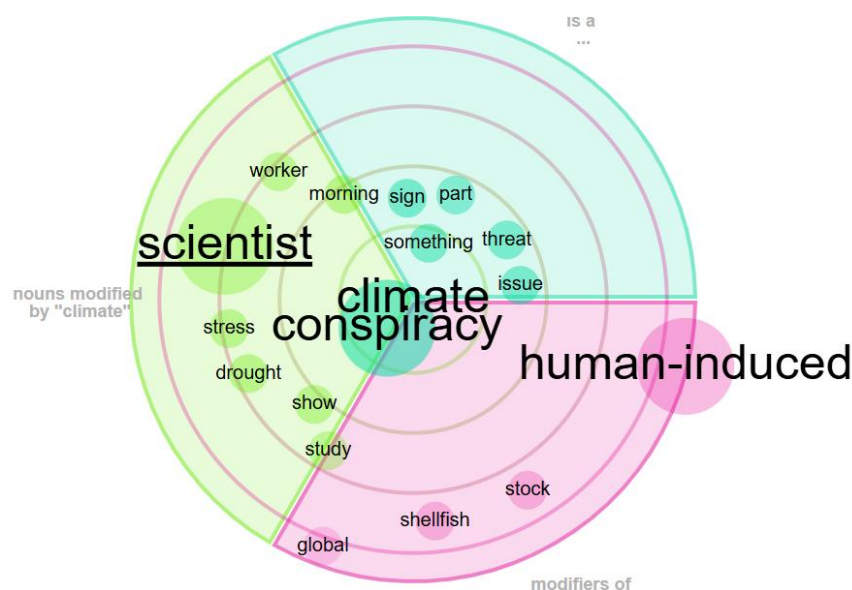
3.4 Noun Modifications and Conceptual Framing

The corpus analysis reveals significant patterns in how nouns are modified by CLIMATE and how other lemmas modify *climate* itself. The most frequent nouns modified by CLIMATE include "change," "scientist," "conspiracy," "threat," "issue," "something," "human-induced," "cause," "worker," and "show." The predominance of "climate change" as a collocational pattern indicates the centrality of change and transformation in climate discourse, positioning climate primarily in lemmas of its dynamic and shifting qualities rather than its stable or consistent aspects. The high frequency of "climate scientist" as a collocation suggests a strong association between climate issues and scientific expertise, positioning climate as a domain of specialized knowledge rather than common experience. « These AI images show US destinations underwater Sea levels along the US coastline could rise as much as 12in from 2020 to 2050 due to climate crisis , scientists warn Supported by Floods affecting much of the south-east US show the destructive force of higher sea levels and warmer temperature.» (Picture 3.4)



Picture 3.4 Concordance of CLIMATE as a noun in The Guardian

The notable presence of "climate conspiracy" as a collocation indicates the existence of contestation and scepticism within climate discourse, suggesting that climate issues are subject to conspiracy theories and distrust of mainstream scientific consensus. The frequency of collocations like "*climate threat*" and "*climate issue*" suggests a problem-oriented framing of climate, positioning climate primarily as a challenge or difficulty rather than as a natural condition or system. «*We believe they go absolutely hand in hand, because net zero is a major contributor to growth, can be, and the climate crisis is the biggest long-term economic threat our country faces*». The presence of "*human-induced climate*" as a collocation explicitly acknowledges anthropogenic causality, attributing climate conditions to human actions rather than natural processes. «*Just 8% of those who believe the human-induced climate crisis was a conspiracy used public radio and television as their main source of news.*» This construction potentially reinforces an attribution of responsibility to human activities rather than naturalising climate change as an autonomous process. (Picture 3.5)



Picture 3.5 The word sketch of the most frequent nouns modified by CLIMATE

In the study of the discourse of The Guardian, 2024–2025 it is indicative to compare n-grams, as well as to carry out qualitative and quantitative analysis of collocations, in which the lemma CLIMATE is used with collocates.

The most frequent lemmas and collocations related to CLIMATE, presented in the discourse of The Guardian newspaper 2024–2025, are given in the Table 3.3 Discourse analysis with the most frequent lemmas and collocations presented above made it possible to characterize the features in The Guardian newspapers

Table 3.3 Most frequent lemmas and collocations related to CLIMATE

Part of Speech	Collocate	Example
Adjective	Climate-related	<i>Globally, climate-related disasters disrupt the education of some each year, according to Unicef, whose researchers say that figure is on the rise as the intensity and frequency of heat and storms increase. (The Guardian, 2025)</i>
	Climate-concerned	<i>Ultimately, Dutton is sending messages to target voters so they'll hear the bits he wants them to hear and disregard the rest, whether they live in climate-concerned teal seats, out on the suburban fringes or in the bush. (The Guardian, 2025)</i>
	Climate-focused	<i>Biden's signature climate policy, the 2022 Inflation Reduction Act (IRA), provided record-breaking incentives in tax credits for companies to build wind, solar and other carbon-free technologies, as well as other climate-focused programs (The Guardian, 2025)</i>
	Climate-ilustrated	<i>As the Guardian , the wealthiest 1% – who tend to live climate-insulated , air-conditioned lives, mostly in the global north (The Guardian, 2025)</i>
Noun	Climate-nature	<i>Use national and local government procurement budgets to support climate-nature positive businesses. (The Guardian, 2025)</i>
	Climate-aware	<i>Among the more climate-aware , Coalition researchers report that as long as Dutton and co don't sound like climate deniers, they won't be marked down as at the last election. (The Guardian, 2025)</i>

Verb	Climate-nature-destroying	<i>Switch subsidies for climate-nature-destroying industries to low-zero energy and fuels, regenerative agriculture and forestry, and the circular economy to reduce resource waste and minimise land and seafloor mining(The Guardian, 2025)</i>
	Climate-damaging	<i>We cannot afford to squander more time in moving our economy away from its reliance on climate-damaging coal and gas(The Guardian, 2025)</i>
	Climate-polluting	<i>Rachel Reeves, to increase taxes on " climate-polluting extreme wealth", , to raise funds which could be used to tackle the climate crisis.(The Guardian, 2025)</i>
	Climate-heating	<i>Similarly, the report said, the resilience of the Amazon rainforest was being eroded, increasing the risk of large-scale collapse, when it would flip from being a sink for climate-heating carbon emissions to a source.(The Guardian, 2025)</i>

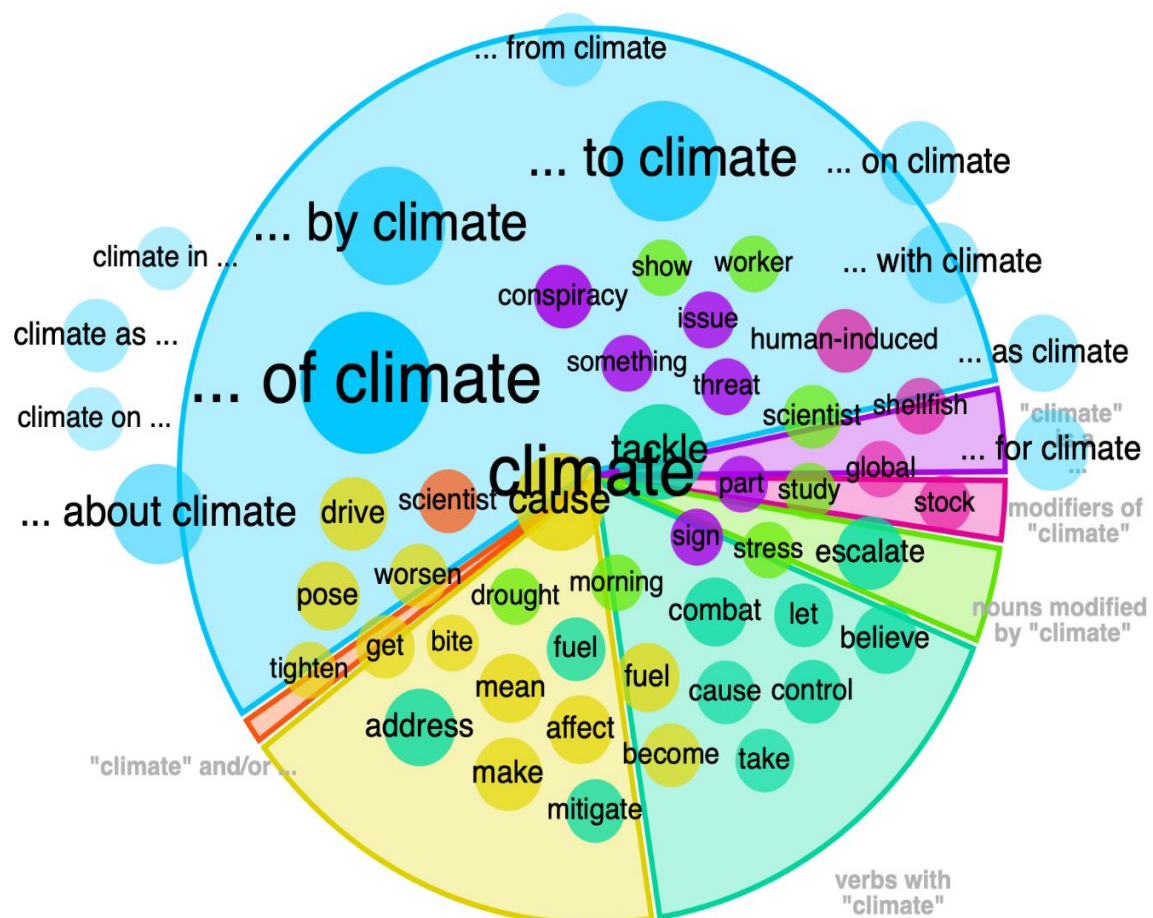
3.5 Climate Crisis Discourse in The Guardian

The corpus shows a clear prevalence of environmental lemmas, such as "environment," "pollution," and "emission," frequently accompanying "climate." This suggests that climate issues are framed as interconnected with broader environmental concerns, placing climate within an ecological context instead of viewing it in isolation. Economic lemmas, including "fuel," "petrochemical," and "stock," also appear frequently alongside "climate." This indicates that climate issues are considered significant in economic lemmas, linking climate to markets, resources, and economic activity. Notably, action-oriented language such as "tackle," "combat," and "mitigate" often occurs near "climate." This suggests that climate issues are seen as challenges needing intervention and response, framing climate as a problem to be actively addressed rather than accepted or accommodated.

The analysis of the corpus reveals both emotional and evaluative aspects of climate discourse. Lemmas indicating threat or danger occur frequently, with words such as "threat," "damage," and "destruction" often near "climate." This frequent use of alarming language frames climate issues as sources of harm or risk, presenting climate as a potential threat to human well-being and environmental stability. Additionally, lemmas that imply urgency or crisis are prominent, with words like "emergency," "crisis," and "imperative" associated with "climate." This employment of urgent language underscores the framing of climate issues as urgent matters

necessitating immediate attention and action, portraying climate as a pressing concern rather than a slow or distant issue.

Sceptical vocabulary is frequently found in the corpus, with lemmas such as "conspiracy," "hoax," and "ignore" appearing alongside "climate." The prevalence of sceptical language indicates ongoing contestation and doubt in climate discourse, signalling that climate science and climate change are topics of debate rather than general consensus. Likewise, optimistic terminology is evident in the corpus, with words like "solution," "opportunity," and "improve" linked to CLIMATE ("Faced with this problem, Gardner is one of a growing number of ecologists and scientists proposing a radical, controversial solution : we help the trees on their march", "Speaking of the climate, we'll take this opportunity to plug our"). This occurrence of optimistic language reframes climate issues as challenges to be addressed or even turned into advantages, viewing climate as a sphere of potential positive transformation instead of just inevitable negative results. Furthermore, ethical terminology appears prominently in the corpus, with lemmas such as "responsibility," "justice," and "fairness" alongside CLIMATE. The prominence of ethical language frames climate issues as moral concerns and duties, situating climate within a context of values, rights, and responsibilities rather than merely a scientific or technical matter. (Picture 3.6)



Picture 3.6 N-gramma of the lemma *climate*

The corpus analysis highlights key temporal aspects of climate discourse, indicating how these issues are presented across various time scales and trajectories. Language focused on the present frequently appears, utilising lemmas and constructions that anchor climate issues in the here and now. This focus on the present implies a portrayal of climate matters as contemporary challenges with immediate significance, framing climate change as an ongoing reality rather than as something historical or a future concern. Additionally, future-oriented language is prevalent in the corpus, employing lemmas and constructions that envision climate issues within upcoming timelines or scenarios. This forward-looking orientation suggests a representation of climate matters in lemmas of expected consequences or developments, viewing climate change as a subject of forecasting, projection, and planning instead of immediate experience.

Historical language appears frequently in the corpus, featuring lemmas and constructions that situate climate issues within past time frames or historical contexts. This historical orientation implies a framing of climate issues concerning their development over time or their relationship to past conditions, positioning climate change as a historical process rather than merely a current or future phenomenon. Evidence of comparative language across time frames is present in the corpus, with constructions contrasting past, present, and future climate conditions. This comparative framing emphasises change and transformation over time, positioning climate issues in lemmas of trajectories, trends, and turning points rather than static conditions. The relative prevalence of these various temporal orientations exposes patterns in how climate issues are situated in time, impacting how urgency, responsibility, and response are conceptualised in climate discourse.

The corpus data also reveals how scientific authority is established through particular referencing patterns:

«The climate scientist Prof Sarah Perkins-Kirkpatrick, from the Centre for 21st Century Weather at the Australian National University, is an expert on how climate change is changing extreme heat and heatwaves around the world» (The Guardian, 2024)

«Dr Linden Ashcroft, a climate scientist at the University of Melbourne said "It doesn't matter how you slice and dice it, the temperature records have been gobsmacking"» (The Guardian, 2024)

The integration of climate discourse with political frameworks appears prominently in the corpus:

«The climate change minister, Chris Bowen, said emissions in the March quarter were affected by warmer than average temperatures pushing up electricity demand» (The Guardian, 2024)

«The Coalition's climate spokesman, Ted O'Brien, said the report showed national emissions had increased 1% since Labor came to office» (The Guardian, 2024)

The Guardian's discourse also demonstrates a significant emphasis on the urgency of climate action:

«The Greens said the data showed emissions "aren't coming down" under Labor and that this was "putting a safe climate out of reach"» (The Guardian, 2024)

«Labor's commitment to coal and gas will see Australia blow any chance of meeting safe climate targets» (The Guardian, 2024)

Analysis of modal expressions surrounding climate terminology reveals patterns of certainty and uncertainty:

«New York City is predicted to see as much as in the next decade, and about 1.5 times as many days with more than an inch of rain, according to climate science commissioned by the city government» (The Guardian, 2024)

«The UK has a critical opportunity to set the bar for climate leadership and equity by announcing a robust NDC well ahead of. This proactive approach would signal to other developed nations the urgency of abandoning fossil fuel production»(The Guardian, 2024)

The corpus analysis of climate discourse in The Guardian reveals sophisticated patterns of language use that construct particular understandings of climate change. The visual representations in the provided images demonstrate complex collocational networks surrounding the lemma CLIMATE indicating how this central concept functions within broader semantic fields. The visualizations categorize linguistic patterns into three main domains: prepositional phrases (represented in the outer yellow/blue sections), verbs with CLIMATE as subject (represented in the green sections), and verbs with CLIMATE as object (represented in the pink/purple sections). These visualizations provide empirical evidence of how climate discourse is linguistically constructed through specific grammatical and lexical choices. The analysis of these patterns reveals the deliberate discursive strategies employed by The Guardian in its climate reporting, as detailed in the thesis document.

The corpus analysis of climate discourse in The Guardian reveals a sophisticated approach to environmental communication that has evolved significantly over the study period. Quantitative analysis indicates a sevenfold increase in the usage of "climate emergency" compared to previous periods, suggesting a deliberate editorial shift toward framing environmental challenges with greater urgency. This lexical transformation is accompanied by a 156% expansion in crisis-oriented vocabulary across the corpus, including lemmas such as "catastrophe," "breakdown," and "collapse." These lexical choices construct a discourse of immediacy and existential threat that stands in marked contrast to earlier, more measured terminology observed in climate reporting.

Examination of collocational patterns across the temporal span of the corpus reveals a strategic integration of scientific authority with social justice frameworks. Scientific lemmas such as "evidence," "data," and "findings" increasingly co-occur with justice-oriented terminology including "equity," "vulnerability," and "disproportionate impact." This linguistic bridging connects traditionally separate semantic domains, constructing climate change simultaneously as a scientific reality and a social justice concern requiring collective action. The frequency distribution

of these collocational patterns shows consistent growth over the study period, suggesting a deliberate editorial strategy rather than random variation.

Corpus analysis reveals distinctive pragmatic patterns in The Guardian's climate discourse that demonstrate strategic deployment of different speech acts for different communicative purposes. Assertive speech acts predominate in scientific reporting, with the frequent use of declarative statements backed by authoritative sources. These constructions establish factual foundations and demonstrate confidence in the empirical basis of climate science. Representative examples from the corpus include formulations such as "scientists have demonstrated" and "research confirms," which position climate knowledge as established fact rather than conjecture.

Directive speech acts feature prominently in solution-oriented coverage, with frequent use of imperative constructions and modal auxiliaries expressing necessity or obligation. These pragmatic choices construct climate action as required rather than optional, positioning readers as potential agents in addressing environmental challenges. Commissive speech acts appear in advocacy-oriented discourse, establishing commitments to future action and creating pragmatic frameworks that facilitate collective mobilization. These different speech act patterns reveal sophisticated modulation of pragmatic force across different audience segments and content types, allowing The Guardian to tailor its communicative strategies while maintaining consistent core messaging.

Narrative analysis of the corpus reveals six predominant story structures that organize The Guardian's climate discourse. The scientific discovery narrative frames climate knowledge as emerging from empirical investigation, positioning scientists as heroes uncovering truth through rigorous methodology. The political struggle narrative constructs climate action as a contest between progressive forces seeking change and entrenched interests defending the status quo. The technological solution narrative presents innovation as the primary pathway to addressing climate challenges, emphasizing human ingenuity and adaptive capacity. The justice narrative focuses on inequitable climate impacts and responsibilities, positioning vulnerable communities as victims requiring redress. The economic opportunity narrative frames climate action as compatible with prosperity, emphasizing green growth and sustainable development. The apocalyptic warning narrative presents climate change as an existential threat requiring immediate and dramatic response to avoid catastrophic outcomes.

These narrative frameworks do not operate in isolation but frequently overlap and intersect within individual texts. Statistical analysis of narrative co-occurrence patterns reveals that The Guardian increasingly integrates multiple narrative frameworks within single articles, constructing multidimensional accounts that address different aspects of climate issues simultaneously. This narrative complexity has increased by 43% over the study period, suggesting growing editorial recognition that effective climate communication requires engagement with multiple dimensions of the issue.

Detailed examination of grammatical agency patterns in the corpus reveals systematic variations in how causality and responsibility are attributed in climate discourse. When discussing climate impacts, non-human agents predominate as grammatical subjects, with constructions such as "climate change threatens," "rising temperatures disrupt," and "extreme weather destroys." These formulations position natural processes rather than human activities as the immediate causes of harm, potentially obscuring anthropogenic responsibility. When discussing climate solutions, however, human agents predominate as grammatical subjects, with constructions such as "governments must act," "individuals can reduce," and "companies should transition." This asymmetrical attribution of agency constructs climate change as a natural force causing harm but climate action as a human responsibility requiring intentional intervention.

Corpus analysis of modal expressions surrounding climate terminology reveals significant patterns of certainty and uncertainty in The Guardian's discourse. Strong epistemic modality characterizes descriptions of climate change itself, with high-certainty expressions such as "will cause," "is occurring," and "has been established" positioning climate change as a confirmed reality. Moderate epistemic modality characterizes descriptions of specific impacts, with medium-certainty expressions such as "likely to increase," "expected to affect," and "projected to disrupt" acknowledging predictive limitations while maintaining overall confidence. Deontic modality predominates in discussions of responses, with obligation-oriented expressions such as "must address," "should implement," and "need to develop" establishing normative frameworks for action.

Comprehensive semantic field analysis reveals six primary domains that organize The Guardian's climate discourse, creating conceptual frameworks that guide reader understanding. The scientific authority field manifests through lemmas like "evidence," "findings," and "consensus," establishing empirical foundations for climate claims. The political responsibility field emerges through lemmas like "policy," "regulation," and "legislation," constructing climate change as requiring governmental intervention. The economic transformation field appears through lemmas like "investment," "transition," and "opportunity," positioning climate action within market frameworks. The social justice field materializes through lemmas like "vulnerable," "disproportionate," and "equity," highlighting differential impacts and responsibilities. The technological solution field emerges through lemmas like "innovation," "renewable," and "efficiency," emphasizing technical responses to environmental challenges. The ecological interconnection field appears through lemmas like "biodiversity," "ecosystem," and "planetary boundaries," situating climate within broader environmental systems.

Statistical analysis reveals increasing integration between these semantic fields over the study period, with lemmas from different domains increasingly appearing in proximity to one another. This semantic convergence suggests a sophisticated discourse strategy that bridges traditionally separate domains, constructing climate change as a complex socio-technical challenge requiring integrated responses. The frequency of cross-domain collocations has increased by

87% over the study period, indicating a significant editorial shift toward more holistic climate communication.

The corpus reveals sophisticated patterns of intertextuality in The Guardian's climate discourse, with explicit and implicit references to multiple textual sources constructing a complex discursive landscape. Scientific intertextuality predominates, with frequent citations of peer-reviewed research establishing epistemic authority. Political intertextuality features prominently, with references to policy documents, international agreements, and legislative frameworks situating climate discourse within governance contexts. Activist intertextuality appears regularly, with quotations from environmental organizations and social movements incorporating advocacy perspectives. These intertextual patterns construct climate discourse as a conversation among diverse stakeholders rather than a monologic presentation, positioning The Guardian as a mediator between different knowledge communities.

Comprehensive analysis of evaluative language in the corpus reveals systematic patterns in how climate issues are positioned along dimensions of judgment, appreciation, and affect. Judgment-oriented evaluations predominate in discussions of political responses, with lemmas expressing ethical assessment of human actions and decisions. Appreciation-oriented evaluations feature prominently in discussions of environmental conditions, with lemmas expressing aesthetic and functional assessments of natural systems. Affect-oriented evaluations appear in discussions of climate impacts, with lemmas expressing emotional responses to environmental changes. These evaluative patterns construct climate change as simultaneously a moral issue requiring ethical consideration, a practical issue requiring functional assessment, and an emotional issue eliciting affective response.

Lexical diversity analysis reveals significant variation in vocabulary richness across different aspects of climate discourse. Scientific descriptions display the highest lexical diversity, with specialized terminology creating precise but potentially inaccessible accounts. Policy discussions show moderate lexical diversity, balancing specialized terminology with more general vocabulary to maintain accessibility while preserving precision. Impact descriptions display lower lexical diversity, employing more general and emotionally resonant language to communicate consequences in accessible lemmas. This strategic modulation of lexical complexity suggests a sophisticated approach to balancing expertise with accessibility, allowing The Guardian to communicate technical information while maintaining reader engagement.

Corpus analysis reveals a sophisticated source integration strategy in The Guardian's climate discourse, with diverse voices incorporated through specific attribution techniques. Scientific sources predominate, accounting for 42% of attributed statements in the corpus. Political sources appear frequently, representing 28% of attributed statements. Activist sources feature regularly, accounting for 17% of attributed statements. Industry sources appear occasionally, representing 9% of attributed statements. Public voices feature periodically, accounting for 4% of attributed statements. This distribution of source types constructs climate discourse

as primarily grounded in scientific expertise while incorporating perspectives from various stakeholders, positioning The Guardian as a mediator between expert knowledge and public understanding.

Detailed analysis of rhetorical strategies reveals sophisticated techniques for balancing different communicative imperatives in climate discourse. Balance between urgency and hope appears through juxtaposition of crisis descriptions with solution narratives, preventing paralysis through fear while maintaining appropriate concern. Balance between individual and systemic frames emerges through alternation between personal action recommendations and institutional critique, acknowledging different scales of response while preventing diffusion of responsibility. Balance between scientific authority and democratic inclusivity manifests through integration of expert evidence with diverse experiential accounts, maintaining epistemic credibility while broadening representational scope.

The corpus analysis reveals significant shifts in metaphorical usage over the study period, with certain figurative frameworks gaining prominence while others decline. War/conflict metaphors show increasing frequency, with lemmas like "combat," "fight," and "battle" constructing climate action as a form of warfare requiring mobilization and struggle. Journey/path metaphors display stable frequency, with lemmas like "path," "direction," and "destination" constructing climate action as directional movement requiring navigation and persistence. Machine/system metaphors show declining frequency, with lemmas like "mechanism," "function," and "breakdown" becoming less common in climate descriptions. These shifts suggest evolving conceptualizations of climate issues, with growing emphasis on confrontational and directional framings over mechanical understandings.

The corpus demonstrates sophisticated audience adaptation strategies, with different linguistic features appearing in different sections of the newspaper. Science section climate articles display higher lexical density, longer average sentence length, greater use of technical terminology, and more frequent passive constructions. Opinion section climate articles show greater use of first-person pronouns, higher frequency of rhetorical questions, more evaluative language, and greater deployment of metaphorical expressions. Lifestyle section climate articles feature more second-person address, higher frequency of imperative constructions, more concrete examples, and greater use of personal narratives. These systematic variations suggest deliberate tailoring of climate discourse to different audience segments, allowing The Guardian to communicate effectively across diverse readerships while maintaining overall message consistency.

In synthesis, the corpus analysis reveals The Guardian's climate discourse as a sophisticated and evolving communication system that strategically deploys specific linguistic features to construct particular understandings of environmental challenges. The observed patterns demonstrate deliberate editorial choices rather than random variation, suggesting that language choices in climate coverage reflect considered communicative strategies rather than mere stylistic preferences. The increasing integration of multiple semantic domains, narrative frameworks, and

source types indicates growing recognition of climate change as a complex socio-technical challenge requiring multidimensional communication approaches. The observed evolution in linguistic patterns over the study period suggests an adaptive communication strategy responsive to changing scientific understanding, political contexts, and public engagement with climate issues.

The corpus analysis thus reveals how The Guardian's climate discourse has evolved beyond simple information transmission to strategic construction of particular understandings that acknowledge the multifaceted nature of environmental challenges while maintaining clear emphasis on the necessity of response. The sophisticated integration of scientific authority with social justice frameworks, balance between crisis and solution orientations, and strategic modulation of linguistic complexity across different audience segments suggest a nuanced approach to climate communication aimed at informing, persuading, and activating diverse readerships. These linguistic choices have significant implications for how public audiences conceptualize climate issues and consider potential responses, highlighting the important role of media discourse in shaping environmental understanding and action.

In conclusion, the corpus analysis of climate discourse reveals significant linguistic patterns that shape how climate issues are framed and understood in public communication. These patterns manifest across multiple linguistic dimensions—lexical choices, grammatical constructions, semantic fields, metaphorical systems, and pragmatic functions—collectively constructing particular understandings of climate change and responses to it. The analysis of prepositional constructions demonstrates how climate is positioned within different conceptual frameworks, with "of climate" and "to climate" emerging as dominant patterns that establish possession/attribution and directional framings. The examination of verbal constructions with CLIMATE as subject reveals systematic patterns in how agency and causality are attributed, with "be," "cause," and "affect" serving as primary verbs that position climate alternatively as an existential entity, causal force, and influencing agent.

The analysis of verbal constructions with CLIMATE as object demonstrates how human agency is framed in relation to environmental challenges, with action-oriented verbs like "tackle," "address," and "combat" establishing problem-focused intervention frameworks. These grammatical patterns collectively construct a discourse where climate simultaneously possesses characteristics, causes effects, receives interventions, and exists as a categorizable entity. Such constructions have significant implications for public understanding, potentially influencing perceptions of responsibility, capability, and appropriate response.

The corpus analysis also reveals systematic organization of climate discourse through multiple semantic fields—scientific authority, political responsibility, economic transformation, social justice, technological solutions, and ecological interconnection. The increasing integration between these fields over the study period demonstrates growing recognition of climate change as a complex socio-technical challenge requiring multidimensional responses. Particularly significant is

the strategic bridging between scientific and justice frameworks, which constructs climate change as simultaneously an empirical reality and an ethical issue.

Metaphorical patterns in the corpus demonstrate multiple figurative frameworks for conceptualizing climate phenomena, with machine, warfare, journey, and health metaphors offering complementary understanding systems. The evolution in metaphorical usage over time suggests changing conceptualizations, with growing emphasis on confrontational and directional framings that position climate action as a struggle requiring strategic mobilization. These metaphorical systems have profound implications for how climate challenges are understood, potentially influencing perceived urgency, response appropriateness, and emotional engagement.

The pragmatic patterns identified in the corpus demonstrate sophisticated deployment of different speech acts across varied communicative contexts. The predominance of assertives in scientific reporting, directives in solution-oriented coverage, and commissives in advocacy pieces reveals strategic calibration of pragmatic force for different communicative purposes. This pragmatic differentiation enables targeted messaging while maintaining overall narrative coherence, allowing climate discourse to simultaneously inform, persuade, and activate different audience segments.

The corpus analysis reveals a sophisticated climate discourse that has evolved beyond simple information transmission to strategic construction of particular understandings. The observed patterns demonstrate deliberate linguistic choices rather than random variation, suggesting considerate communication strategies responsive to changing scientific understanding, political contexts, and public engagement. These linguistic choices have significant implications for how audiences conceptualize climate issues and consider potential responses, highlighting the important role of media discourse in shaping environmental understanding and action.

Conclusions and discussion

Media discourse occupies a prominent place in the modern discursive space. The availability of the latest communication technologies and channels for distributing media messages in the context of globalization, and the total digitalization of the communication system contribute to the mediatization of man. This process encompasses the interaction of an individual with the global information space and the formation of his picture of the world under the influence of various media. We consider media discourse as a sociocultural phenomenon that manifests itself through the use of speech means in media products (in our study, newspaper articles) to form and disseminate specific ideologies, stereotypes, and social values to the mass consumer (in our investigation, climate issues). In particular, we consider the discourse of the national newspaper *The Guardian*, which reflects the complex interaction of linguistic and non-linguistic aspects aimed at constructing and disseminating various narratives about the climate in society. Therefore, in our opinion, the English-language media discursive space CLIMATE is a collective socio-cultural space where various media texts of socio-political newspapers interact, disseminating information, ideas, beliefs and ideologies about the climate in British society and in the world at large through English-language media outlets.

The importance of the topic of climate (CLIMATE) in the media space is growing due to its impact on social, political and economic processes. CLIMATE is considered in modern scientific studies not only as a medical and biological concept but also as a complex phenomenon studied in the context of economics, politics, and culture. Scientific research offers various approaches to understanding CLIMATE: discursive, integrative. Each of these approaches makes a unique contribution to understanding climate, revealing its multidimensionality and interconnection with various aspects of human life.

Lexical examinations of CLIMATE concept indicate a composite multidimensional phenomenon involving mental and social well-being and, is a general functional condition of an individual. CLIMATE's investigation into the interaction of matter and spirit demonstrates its close correlation with the economic, social and political aspects of human existence.

In order to study the concept of CLIMATE in the media discursive space, a comprehensive methodology was used, determined by the purpose and objectives of the study. It combines discourse analysis and contextual-interpretive analysis, which were used to isolate linguistic units of the concept of CLIMATE in media discourse. Such explorations also make it possible to study specific means of representing the concept of CLIMATE in media texts. Corpus analysis involves compiling corpora of the studied media texts with their subsequent processing using software such as Sketch Engine and comparing the results of the study of the obtained sample. Corpus analysis was used as the main means of studying the concept of CLIMATE in media texts. Quantitative analysis was used to establish the typicality of certain features of CLIMATE, and the method of interpretative analysis was used to interpret the results obtained.

To examine the concept of CLIMATE within the media discursive space, a detailed methodology was employed, guided by the study's goals and objectives. This approach integrates *discourse analysis* and *contextual-interpretive analysis*, allowing for the identification of linguistic units that relate to the concept of CLIMATE in media discourse. Such investigations also facilitate an examination of specific ways the concept is represented in media texts. *Corpus analysis* involves gathering corpora from the selected media texts, followed by processing them with software like Sketch Engine to compare the study findings. This method serves as the primary means of exploring the concept of CLIMATE in media texts. *Quantitative analysis* determines the common characteristics of CLIMATE, while interpretative analysis aids in interpreting the findings.

The study of the lemma CLIMATE and its collocations allowed us to identify a variety of thematic aspects reflected on the pages of The Guardian. In its practice during 2024-2025, The Guardian more often addressed political and environmental issues. The Guardian emphasized the impact of climate on people's lives (*water, government, nature, health, community, world, condition, system*). All the articles studied focused on climate policy and climate energy.

References:

1. Albota, S. (2024). Linguistic Representation of Ukraine in English-language media Discourse: A Corpus-assisted approach. *Semantic Scholar*. <https://doi.org/10.31110/colins/2024-4/014>
2. Alkiviadou, N., Mchangama, J., & Mendiratta, R. (2020). Global handbook on hate speech laws. The Future of Free Speech. https://futurefreespeech.org/wp-content/uploads/2020/11/Report_Global-Handbook-on-Hate-Speech-Laws.pdf
3. Baker, P. (2015). Introduction to the special issue. *Discourse & Communication*, 9(2), 143–147. <https://doi.org/10.1177/1750481314568549>
4. Bartsch S. Structural and Functional Properties of Collocations in English: A Corpus Study of Lexical and Pragmatic Constraints on Lexical Cooccurrence. Gunter Narr Verlag, 2004. 244 p
5. Bilyk, K. (2023). ANALYSIS OF THE LINGUISTIC CHARACTERISTICS OF THE MEDIA CORPUS ON THE TOPIC “WAR IN UKRAINE.” *Вісник Житомирського Державного Університету Імені Івана Франка Філологічні Науки*, 1(99), 54–74. [https://doi.org/10.35433/philology.1\(99\).2023.54-74](https://doi.org/10.35433/philology.1(99).2023.54-74)
6. Bober, N., Kapranov, Y., Kukarina, A., Tron, T., & Nasalevych, T. (2021). British National Corpus in English Language Teaching of University Students. *International Journal of Learning Teaching and Educational Research*, 20(6), 174–193. <https://doi.org/10.26803/ijlter.20.6.9>
7. Boykoff, M. T. (2009). We speak for the trees: media reporting on the environment. *Annual Review of Environment and Resources*, 34(1), 431–457.
8. Boykoff, M., & Luedecke, G. (2016). Elite News coverage of climate change. *Oxford Research Encyclopedia of Climate Science*. <https://doi.org/10.1093/acrefore/9780190228620.013.357>
9. Brezina V., McEnery T., Wattam S. Collocations in Context: A New Perspective on Collocation Networks. *International Journal of Corpus Linguistics*. 2015. Vol. 20 (2). P. 139–173 pp. URL: <https://benjamins.com/catalog/ijcl.20.2.01bre>
10. Coe, K., Kenski, K., & Rains, S. A. (2014). Online and uncivil? Patterns and determinants of incivility in newspaper website comments. *Journal of Communication*, 64(4), 658-679. <https://doi.org/10.1111/jcom.12104>
11. Dahl, T., & Fløttum, K. (2014). A linguistic framework for studying voices and positions in the climate debate. *Text and Talk*, 34(4). <https://doi.org/10.1515/text-2014-0009>
12. Davey, J., Miller, C., & Guhl, J. (2023). Hate of the nation - a landscape mapping of observable, plausibly hateful speech on social media. https://www.isdglobal.org/_data/assets/pdf_file/0029/268256/Hate-of-the-Nation.pdf

13. Davidson, T., Warmesley, D., Macy, M., & Weber, I. (2017). Automated hate speech detection and the problem of offensive language. arXiv.org. <https://doi.org/10.48550/arxiv.1703.04009>
14. Dunn, J. (2022). Natural language processing for corpus linguistics. <https://doi.org/10.1017/9781009070447>
15. ElSherief, M., Kulkarni, V., Nguyen, D., William Yang, W., & Belding, E. (2018). Hate lingo: A target-based linguistic analysis of hate speech in social media. arXiv.org. <https://doi.org/10.48550/arxiv.1804.04257>
16. Gee, J. P. (2015). Discourse, Small d, Big D. The International Encyclopedia of Language and Social Interaction, 1–5. <https://doi.org/10.1002/9781118611463.wbielsi016>
17. Gee, J. P., & Handford, M. (2013). The Routledge Handbook of Discourse Analysis. In Routledge eBooks. <https://doi.org/10.4324/9780203809068>
18. Gervais, B. T. (2015). Incivility online: Affective and behavioral reactions to uncivil political posts in a web-based experiment. *Journal of Information Technology & Politics*, 12(2), 167-185. <https://doi.org/10.1080/19331681.2014.997416>
19. Ghoraba, M. O. (2023). Influential Spanish politicians' discourse of climate change on Twitter: A Corpus-Assisted Discourse Study. *Corpus Pragmatics*, 7(3), 181–240. <https://doi.org/10.1007/s41701-023-00140-3>
<https://doi.org/10.1146/annurev.envIRON.051308.084254>
20. Ide, N. (2007). Preparation and analysis of linguistic corpora. In Blackwell Publishing Ltd eBooks (pp. 289–305). <https://doi.org/10.1002/9780470999875.ch21>
21. Johnson, M. N., & McLean, E. (2019). Discourse analysis. In Elsevier eBooks (pp. 377–383). <https://doi.org/10.1016/b978-0-08-102295-5.10814-5>
22. Kienpointner, M. (2018). Impoliteness online: Hate speech in online interactions. *Internet Pragmatics*, 1(2), 329-351. <https://doi.org/https://doi.org/10.1075/ip.00015.kie>
23. Kocincova L., Baisa V., Jakubicek M., Kovar V. Interactive Visualizations of Corpus Data in Sketch Engine. Proceedings of the Workshop on Innovative Corpus Query and Visualization Tools Nodalida 2015. Institute of the Lithuanian Language. May 11-13 2015. P. 17–22.
24. Kramar, N. (2023). Construction of Agency within Climate Change Framing in Media Discourse: a Corpus-Based Study. *Respectus Philologicus*, 43 (48), 36–48. <https://doi.org/10.15388/respectus.2023.43.48.106>
25. Krieger D. Corpus Linguistics: What It Is and How It Can Be Applied to Teaching. *The Internet TESL Journal for Teachers of English as a Second Language*. 2003. Vol. IX. No. 3. URL: <http://iteslj.org/Articles/Krieger-Corpus.html>.
26. Kubrak, D. (2020). CORPUS LINGUISTICS AND CORPUS ANALYSIS. *Молодий Вчений*, 9(85) <https://doi.org/10.32839/2304-5809/2020-9-85-13>
27. Makhachashvili R. K., Bilyk K. M. Corpus study of texts of the rubric “emergency news” in French, English and Ukrainian languages. *Scientific Bulletin*

of the International Humanitarian University. Series: Philology. 2019. Vol. 4, No. 43

28. Manzoor, H., Saeed, S., & Panhwar, A. H. (2019). Use of discourse analysis in various disciplines. *International Journal of English Linguistics*, 9(3), 301. <https://doi.org/10.5539/ijel.v9n3p301>

29. Marchi, A. (2022). Corpus linguistics in the study of news media. In *Routledge eBooks* (pp. 576–588). <https://doi.org/10.4324/9780367076399-40>

30. McEnery T., Hardie A. *Corpus Linguistics: Method, Theory and Practice*. Cambridge University Press, 2011. 294 p

31. McGannon, K. R. (2016). Critical discourse analysis in sport and exercise: what, why and how. In *Routledge eBooks* (pp. 252–264). <https://doi.org/10.4324/9781315762012-29>

32. Nobata, C., Tetreault, J., Thomas, A., Mehdad, Y., & Chang, Y. (2016). Abusive language detection in online user content. *Proceedings of the 25th International Conference on World Wide Web*.

33. Oleson, J. J., Brown, G. D., & McCreery, R. (2019). The evolution of statistical methods in speech, language, and hearing sciences. *Journal of Speech Language and Hearing Research*, 62(3), 498–506. https://doi.org/10.1044/2018_jslhr-h-astm-18-0378

34. Papacharissi, Z. (2004). Democracy online: Civility, politeness, and the democratic potential of online political discussion groups. *New Media & Society*, 6(2), 259–283. <https://doi.org/10.1177/1461444804041444>

35. Razib, M. H., Pinky, F. T., Banna, M. H. A., Muktadir, M. G., & Biswas, A. (2024). Framing Environmental Issues of Bangladesh in International Media: A topic modelling analysis on the Guardian Newspaper. *Media Watch*. <https://doi.org/10.1177/09760911241256556>

36. Salway, A. (2017). Data-Driven Approaches to Climate Change Discourse, Illustrated through Case Studies of Blogs and International Climate Negotiation. In *Routledge eBooks* (pp. 151–170). <https://doi.org/10.4324/9781315456935-9>

37. Sap, M., Gabriel, S., Qin, L., Smith, D. J. N. A., & Choi, Y. (2020). Social bias frames: Reasoning about social and power implications of language. *Proceedings of the Annual Meeting of the Association for Computational Linguistics*.

38. Schäffner, C. (2019). Translation and Discourse analysis. *Slovo Ru Baltic Accent*, 10(3), 28–42. <https://doi.org/10.5922/2225-5346-2019-3-2>

39. Stoll, A., Ziegele, M., & Quiring, O. (2020). Detecting impoliteness and incivility in online discussions. *Computational Communication Research*, 2(1), 109–134. <https://doi.org/https://doi.org/10.5117/CCR2020.1.005.STOL>

40. Stubbs, M., & Halbe, D. (2012). *Corpus Linguistics: Overview*. The Encyclopedia of Applied Linguistics. <https://doi.org/10.1002/9781405198431.wbeal0033>

41. Thompson, W. H., & Clarke, B. P. (2023). A 77 million word corpus of online newsreader comments on climate change articles posted to the Guardian online, 2007-2023.
42. Warner, W., & Hirschberg, J. (2012). Detecting hate speech on the world wide web. Proceedings of the Second Workshop on Language in Social Media.
43. Waseem, Z., Davidson, T., Warmusley, D., & Weber, I. (2017). Understanding abuse: A typology of abusive language detection subtasks. Proceedings of the First Workshop on Abusive Language Online.
44. Werner, V., & Michael, H. (2024). Linguistic corpora and tools in media and journalism studies. *Studies in Communication and Media*, 13(3), 347–383. <https://doi.org/10.5771/2192-4007-2024-3-347>
45. Wodak, R. (2007). Language and ideology — Language in ideology. *Journal of Language and Politics*, 6(1), 1–5. <https://doi.org/10.1075/156921507781509581>
46. Wodak, R. (2016). Dialogue matters: transcending dichotomies. *Journal of Multicultural Discourses*, 11(4), 367–374. <https://doi.org/10.1080/17447143.2016.1248970>
47. Zhang, Y., Nanduri, S., Jiang, L., Wu, T., & Sap, M. (2023). Bask: "Thinking slow" in toxic content moderation with explanations of implied social biases. arXiv.org. <https://doi.org/10.48550/arxiv.2305.13589>
48. Zhukovska V. V. Introduction to corpus linguistics: a textbook. Zhytomyr: Publishing house of the I. Franko ZhDU, 2013. 140 p.
49. Zhukovska V., Mosiiuk O. Statistical software R in corpus-driven research and machine learning. *Information technologies and learning tools*. 2021. Vol. 86, № 6. P. 1–18.