
ТІЛТАНУДЫҢ ӨЗЕКТІ МӘСЕЛЕЛЕРІ АКТУАЛЬНЫЕ ПРОБЛЕМЫ ЯЗЫКОЗНАНИЯ ACTUAL PROBLEMS OF LINGUISTICS

Article
UDC 81
<https://doi.org/10.31489/2026PHI1/6-15>

Received: 01.11.2025
Accepted: 09.01.2026

O. Kapranov*

*NLA University College, Oslo, Norway
(e-mail: oleksandr.kapranov@nla.no)*

Discourse Markers in Climate Change Reports by the Greater London Authority

London, the capital of the United Kingdom (the UK), and other major cities in the world experience a range of climate change-related phenomena that impact negatively on people's quotidian lives [1]. Among them, we should mention a dramatic change in weather patterns [2], heatwaves [3], excessive rainfall [4], sea level rise [5], and flooding [6]. The current Mayor of London, Sadiq Khan, and the Greater London Authority (the GLA) are acutely aware of the negative consequences of climate change [7]. Accordingly, they develop, implement and communicate measures that are aimed at mitigating the negative impact of climate change on London and Londoners [7]. Particularly, the GLA communicates its climate change-related activities in specialised reports. The GLA's climate change reports, however, attract limited attention of linguists and philologists [8]. In order to compensate for the shortage of relevant literature, the present study examines a corpus of climate change reports by the GLA and analyses metadiscursive means in them. Specifically, the study investigates the frequency of such metadiscursive means as discourse markers (DMs) in the corpus. The quantitative investigation of the corpus demonstrates that the DMs *and*, *as*, *however*, *but*, and *if* occur frequently. The frequency of their occurrence and their roles in the GLA's climate change communication are further discussed in the article.

Keywords: climate change communication, climate change reports, discourse markers (DMs), London, the Greater London Authority

Introduction

The climate crisis is evidenced by such phenomena as global warming [9], extreme weather [11] that involves erratic periods of rain and drought [12], and irreversible changes to the polar ice caps whose melting contributes significantly to sea level rise [13]. Climate change-related phenomena impact negatively on people's health [14], their economic stability [15] and security [16]. In this light, the issue of climate change has become a substantial global as well as local (i.e., "glocal") challenge that needs to be tackled [17]. Accordingly, the issue of climate change is addressed by a range of political and public actors [5], as well as representatives of hard [18] and soft sciences, such as, for example, education for sustainable development [19], discourse and communication studies [9]. Furthermore, the issue of climate change is tackled by international, national, and local authorities [20], for instance, the Greater London Authority (the GLA) in the United Kingdom (the UK) [21]. In this regard, it should be specified that the GLA, which is also quite often referred to as London City Hall, is the local governance body of Greater London, i.e. London and its constitutive boroughs [8].

As far as the tackling of climate change on the local level is concerned, the GLA provides an outstanding example of environmental and climate change-related stewardship that involves a thoughtfully planned strategy of addressing and minimising the negative impact of climate change on London and Londoners [22].

* Corresponding author's e-mail: oleksandr.kapranov@nla.no

Importantly, the GLA is known for a continuous effort to communicate its climate change-related activities [23]. For example, the GLA regularly publishes climate change-related reports [8], which aim at informing Londoners, as well as the public at large, about the GLA's climate change-related agenda [24]. The GLA's climate change-related reports, however, are not amply discussed from the vantage point of discourse studies [8].

In order to minimise the current gap in scholarship, the present study seeks to (i) to collect and examine a corpus of the GLA's climate change-related reports and (ii) investigate the frequency of discourse markers (DMs) and their pragmatic roles in the corpus. We, perhaps, should note that DMs are considered such words as although, however, nevertheless, which "glue" the textual pieces together and facilitate the flow of the text without contributing to it syntactically and conceptually [25]. Importantly, however, DMs help to set a relevant pragmatic tonality that streamlines the entire message, be it a written text or an orally delivered statement [26].

Against the aforementioned background, our interest in examining DMs in the corpus is accounted by a number of considerations. Firstly, as mentioned above, DMs are worth considering in the corpus of the GLA's reports on climate change due to the DMs' involvement in guiding the readers' attention to what is being written on the issue of climate change [27]. Secondly, DMs enable the flow of ideas, ensure textual cohesiveness and coherence and, by doing so, contribute to the GLA's effective communication of its climate change-related agenda to the public at large [28]. Consequently, a study of DMs in the GLA's climate change reports can enhance our understanding of how the GLA communicates its climate action plans and policies. In light of these factors, our study seeks to answer the following **research question (RQ)**:

RQ: What DMs are used in the corpus of the GLA's climate change reports and what is their frequency in the corpus?

In order to provide answers to the RQ, we will, first of all, review the literature on DMs in climate change discourse. Thereafter, we will describe the study and its corpus. We will indicate the approach to the analysis of DMs in the corpus and present the results of the quantitative analysis. Following that, we will discuss the results and formulate the conclusions. Finally, we will indicate limitations of the study and suggest possible directions for future research.

The literature outline: DMs in climate change discourses

We should commence the literature outline section with an observation that research on DMs in climate change discourse is rather limited. Nevertheless, the literature outline is comprised of several fairly recent studies on DMs in climate change discourse in the Anglosphere. For instance, a study on DMs in corporate annual reports concerning the issue of climate change by British Petroleum and the Royal Dutch Shell corporations shows that British Petroleum frequently employs such DMs as *also*, *and*, *as*, and *but*, whereas the Royal Dutch Shell uses *accordingly*, *also*, *and*, *but*, *further*, *furthermore*, *however*, *such*, and *therefore* [27]. Furthermore, the most frequent DMs in corporate annual reports on climate change by British Petroleum and the Royal Dutch Shell are reported to be similar in distribution [27]. This finding is suggestive of the discursive convergence by these two fossil fuel corporations as far as the frequency of DMs in climate change reports is concerned [27].

Similarly to the use of DMs in climate change reports by British Petroleum and the Royal Dutch Shell, the literature indicates that DMs *and* and *also* are employed rather generously in corporate disclosures on climate change by The Bank of England, which is considered a leading financial actor in the UK [28]. The frequent use of the additive DMs *and* and *also* by The Bank of England is in line with The Bank's pragmatic strategy that consists in clarifying, commenting and elaborating upon climate change-related reporting [28]. These findings indicate that The Bank of England communicates the issue of climate change by resorting to such metadiscursive means as additive DMs in order to present itself discursively in a favourable light as a corporate actor whose approach to climate change is thoughtful and meticulous [28]. In terms of climate change communication, the positive image of The Bank of England arises from the pragmatic strategy of using addition and elaboration, which facilitate positive image-building of The Bank as a trustworthy institution, whose stance on climate change is to be respected [28].

Whilst the additive DMs (e.g., *and*) are plentiful in the Anglophone corporate discourses on climate change, the literature demonstrates that the Anglophone legal discourse on the issue of climate change involves the frequent use of such contrastive DMs as *but* and *or*, which are associated with the manifestation of

contrast and/or opposition [29]. These findings are explained in the literature as a rhetorical and communicative strategy of expressing alternative options and arguments related to the issue of climate change [29]. It could be inferred from the literature that the Anglophone legal discourse on the issue of climate change intentionally uses a range of contrastive DMs in order to specify alternative points and render precision in their legal interpretation [29]. Furthermore, the literature posits that the Anglophone legal discourse on climate change employs a rather limited repertoire of DMs [29].

Analogously to the frequent occurrence of the contrastive DMs in the Anglophone legal discourse on climate change, contrastive DMs (for instance, *but*) are also rather frequent in climate change discourse by His Royal Majesty King Charles III, the current monarch of the UK [30]. In addition to the generous use of the contrastive DMs, however, King Charles III also employs additive DMs abundantly (e.g., *and*) [30]. The literature contends that a combination of the additive and contrastive DMs in climate change discourse by King Charles III represents an interesting and, arguably, unique case of climate change discourses on the grounds of His Royal Majesty's status, which vacillates between a political actor and a public figure per se [30]. Accordingly, his choice of DMs in climate change discourse bears resemblance to the typical distribution of DMs in British political discourses on climate change [30]. Concurrently, however, the repertoire of DMs used by King Charles III resembles that of public figures [31]. In this regard, the literature shows that British politicians and, in particular, Keir Starmer, who is the incumbent British prime minister, frequently employ additive DMs, such as *and*, as well as contrastive DMs, for instance *but* [31].

It follows from the literature that DMs in climate change discourses play an important pragmatic role [32], which is reflective of the peculiarities of the interlocutor's rhetorical purposes [33], stance [34], and communicative strategy/strategies [35]. Furthermore, the literature implies that the frequency of DMs in climate change discourse is regarded as a key indicator of the interlocutor's metadiscursive practices [27]. In addition, the literature reveals that DMs, inclusive of their frequency and pragmatic roles, may provide a deeper insight into the specifics of Anglophone climate change discourses [36].

In this light, we may contend that the literature in discourse studies and business communication treats DMs as a useful and insightful means that streamlines, organises, and facilitates climate change discourses in the Anglosphere [29]. Building upon the literature, we assume in the present study that the GLA's reports on climate change can involve a range of DMs, which we examine quantitatively in our study. Further, in the subsequent section of the article, we provide a detailed description of the study, inclusive of its theoretical foundations, corpus, and research methodology.

The present study: Its theoretical foundations, corpus and research methodology

The present study, as mentioned in the introduction, focuses on identifying and quantifying DMs in the corpus of the GLA's reports on climate change. Prior to proceeding to the particulars of the study, however, we should outline its theoretical foundations. From the vantage point of theory, the study is informed by the view of DMs as a critical discursive tool that is typically represented by lexical expressions (e.g., *and*) and/or phrases (e.g., *I mean*) [37], which are used to join two clauses, for instance, Clause 1 and Clause 2 [38], and aid the interlocutor's understanding of the clauses [39] by means of providing pragmatically-oriented input [40] without contributing to conceptual and syntactic aspects of the propositional content [41]. Seen through the aforementioned lens, DMs are conceived of as a discursive means that not only liaises two clauses, but enables the pragmatic flow of ideas between them [38]. We should emphasise that within such an approach to DMs, a DM is usually found in the parenthetical position in Clause 2 [37].

Having clarified the theoretical approach to DMs in the study, we will proceed to the description of the corpus. As mentioned in the introduction, the corpus is comprised of the GLA's climate change reports. The corpus is collected on the official site of the GLA at <https://www.london.gov.uk/> by means of searching for the following keywords: climate, climate crisis, climate change, climate change report, climate change reporting, climate change strategy, green energy, net zero, and zero carbon. The procedure of corpus collection has resulted in 14 official reports published online within the period of time of 15 years (i.e., from 2010 to 2025). The corpus is comprised of 402 824 words in total (mean = 28 773.9 and standard deviation = 25 525.8).

As far as the corpus analysis is concerned, we should specify that, initially, the corpus is analysed manually in order to identify DMs in it. The process of DMs identification is based upon the definition of DMs that is found in Fraser [39]. Having compiled the list of DMs in the corpus, we examine them quantitatively in the computer concordance program AntConc [42]. The quantitative examination consists in feeding each individual report into AntConc in order to compute the frequency of the occurrence of DMs in absolute val-

ues. The findings are again checked manually to factor out omissions and misclassifications. The absolute values of DMs per report are, thereafter, fed into the program Statistical Package for Social Sciences (SPSS) version 20.0 [42], which calculates their means (M) and standard deviations (SD). The results of the quantitative analysis are presented, discussed and illustrated in the following section of the article.

Results and discussion

The results of the quantitative corpus analysis demonstrate that there are 734 DMs in the corpus in total (M 15.3, SD 31.7). Further, in Table 1, we present their total number (N) in absolute values, their respective means and standard deviations, and the normalised values per 10 000 words.

Table 1

The Results of the Corpus Analysis

#	DM	Total N	M	SD	Normalised per 10 000 Words
1	<i>Above all</i>	2	1.0	0	0.05
2	<i>Accordingly</i>	3	1.0	0	0.07
3	<i>All in all</i>	2	1.0	0	0.05
4	<i>Already</i>	1	0	0	0.02
5	<i>Also</i>	14	1.6	0.8	0.3
6	<i>Although</i>	15	2.5	1.3	0.4
7	<i>And</i>	188	13.4	12.6	4.7
8	<i>As</i>	90	6.9	6.6	2.2
9	<i>Because</i>	2	1.0	0	0.05
10	<i>Broadly</i>	1	0	0	0.02
11	<i>But</i>	44	3.7	3.4	1.1
12	<i>Conversely</i>	3	1.5	0.5	0.07
13	<i>Currently</i>	11	1.6	1.0	0.3
14	<i>Despite</i>	7	1.4	0.5	0.2
15	<i>Eventually</i>	1	0	0	0.02
16	<i>Finally</i>	11	1.4	0.5	0.3
17	<i>For example</i>	31	2.6	2.5	0.8
18	<i>For instance</i>	7	1.0	0	0.2
19	<i>For the first time</i>	1	0	0	0.02
20	<i>Furthermore</i>	3	1.0	0	0.07
21	<i>Generally</i>	4	1.3	0.5	0.1
22	<i>However</i>	90	6.4	8.3	2.2
23	<i>If</i>	41	3.7	2.3	1.0
24	<i>In accordance with</i>	5	1.0	0	0.1
25	<i>In addition</i>	34	3.1	4.0	0.8
26	<i>In general</i>	3	1.0	0	0.07
27	<i>In light of</i>	4	2.0	1.0	0.1
28	<i>In particular</i>	11	1.4	0.7	0.3
29	<i>Instead</i>	2	1.0	0	0.05
30	<i>In turn</i>	1	0	0	0.02
31	<i>Likewise</i>	1	0	0	0.02
32	<i>Moreover</i>	4	1.0	0	0.1
33	<i>Nevertheless</i>	12	2.0	1.5	0.3
34	<i>Of course</i>	3	1.0	0	0.07
35	<i>Once</i>	1	0	0	0.02
36	<i>Overall</i>	19	2.0	0.9	0.5
37	<i>Particularly</i>	8	1.0	0	0.2
38	<i>Perhaps</i>	1	0	0	0.02
39	<i>Rather</i>	1	0	0	0.02
40	<i>So</i>	8	1.6	0.9	0.2
41	<i>Specifically</i>	5	1.7	0.9	0.1
42	<i>Thereby</i>	1	0	0	0.02
43	<i>Therefore</i>	16	1.8	1.3	0.4
44	<i>Thus</i>	4	1.0	0	0.1

45	<i>Unfortunately</i>	1	0	0	0.02
46	<i>While</i>	14	2.0	1.1	0.3
47	<i>Worryingly</i>	1	0	0	0.02
48	<i>Yet</i>	2	1.0	0	0.05

It follows from Table 1 above that the GLA reports communicate the issue of climate change by means of using a rather wide range of DMs (N of types of DMs = 48). The range of DMs in the corpus is in line with the literature [27-28], which indicates that the major corporate actors in the UK employ a vast array of metadiscursive means, inter alia DMs, in their corporate reporting that concerns the issue of climate change. However, our findings are in contrast to the prior studies, which show that the Anglophone legal discourse on climate change employs a modest range of DMs [29].

It follows from Table 1 that the most frequently occurring DMs in the corpus are (i) *and*, (ii) *as*, (iii) *however*, (iv) *but*, and (v) *if*. Further in the article, we will focus our discussion on the aforementioned DMs. The occurrence of the DM *and* in the corpus lends support to a number of prior studies [27-31], which indicate that *and* forms an intrinsic part of the British discourses on climate change. Clearly, the high frequency of the occurrence of *and* in the present corpus serves as a relevant indicator of the importance of the additive DM *and* in climate change discourses in the Anglosphere. In the present corpus, the additive DM *and* is actively employed in order to create cohesive ties and manifest an explicit pragmatic connection between the coordinate clauses, as seen in excerpt (1) below:

- (1) Ready for the future: Water, energy, and raw materials for the products we consume will be less readily available in the future, **and** climate change will mean higher temperatures, more intense rainfall and water shortages. [44; 19]

It should be noted that in (1) only one in three occurrences of *and* in total is considered a DM in accordance with the approach to DMs postulated by Fraser [37-40]. Let us consider all the cases of *and* in (1) more specifically. The first occurrence of *and* in the noun phrase “water, energy, and raw materials” is not regarded in this study as a DM, since it does not join two independent clauses. To be precise, *and* in “water, energy, and raw materials” merely liaises the constituent parts of this noun phrase. Identically, *and* joins two noun phrases, namely (i) “more intense rainfall” and (ii) “water shortages” and does not join the respective clauses. Hence, *and* in “more intense rainfall and water shortages” is not a DM. The only case of *and* as a DM in (1) is the occurrence of *and* at the beginning of the clause “climate change will mean ...”, because it is used to connect two clauses, clause 1 “Water, energy, and raw materials for the products we consume will be less readily available in the future” and clause 2 “climate change will mean higher temperatures, more intense rainfall and water shortages”.

Following the DM *and*, both the DMs *as* (N = 90) and *however* (N = 90) are the second most frequent DMs in the corpus. Whilst both *as* and *however* can be argued to partake in signaling of transitions between the two ideas and themes, their pragmatic roles differ substantially. For instance, the contrastive DM *however* in the corpus typically introduces a clause that softens the idea manifested in the preceding clause, as well as renders it in a more cautious manner. This contention is illustrated by excerpt 2 below:

- (2) Local emissions from vehicles, buildings, construction and other sources contribute significantly to air pollution in London. This is what the Mayor can most directly control and influence. That means we must understand how these emissions are being reduced to understand how effective particular policies and proposals could be. **However**, there is a complex relationship between reducing emissions within London and reducing concentrations, given the other factors at play. [44; 44]

Specifically, in (2) we observe that the contrastive DM *however* provides a transition in the argument encapsulated by the first three sentences, which deal with the sources of emissions and the way they can be mitigated. This argument is further connected to a more cautious contention, which points to a complex relationship between the sources of emission and their reduction. The softened and almost hedge-like contention in the final sentence in (2) is introduced by the DM *however*. Also, we should point out that the high frequency of the DM *however* in the corpus is in alignment with the literature, which reports a relatively high

frequency of *however* in climate change reports by the Royal Dutch Shell [27], in which it is used as a hedging device.

Whilst the DM *however* in the corpus is involved in softening and hedging the preceding proposition, the DM *as* (N = 90) in the corpus is engaged in elaboration, which is often combined with cause-and-effect implications. This finding is emblematised by excerpt (3):

- (3) Alongside the implementation of mitigation measures after an event, a trend can be observed of companies increasingly considering climate change resilience and adaptation at every stage of the process, notably in the logistics chain. Drax has implemented a multi-port strategy in order to maintain supplies of fuel to the power station. **As** part of this, the geographic split of the ports to ensure resilience to localised events such as storm surges and other potential climate change related impacts has been considered [45; 25]

We can notice in (3) that the DM *as*, just like other frequently occurring DMs *and* and *however*, introduces a transition in the flow of ideas that show how to mitigate the climate crisis. Particularly, the DM *as* in (3) is employed not only to provide a logical and cohesive transition from the preceding sentence, but also to convey the discursive tonality of elaboration on the measures of climate change mitigation. Additionally, we may argue that in (3) the DM *as* is used in rendering an implicit cause-and-effect relationship, which is manifested by the sentence “As part of this, the geographic split of the ports to ensure resilience to localised events...”. In addition, we should emphasise that the high frequency of the DM *as* is in line with the literature, which demonstrates that the major corporate actors in the UK, for instance British Petroleum, frequently employ *as* in their climate change reports [27].

Whilst *as* in the corpus is associated with elaboration and the cause-and-effect relationship, the contrastive DM *but* (N = 44) is related, in the majority of cases, to the expression of contrast, as shown in excerpt (4):

- (4) And we have already taken huge strides to deliver on many of its aims — from improving the quality of our air to reducing single-use plastic bottles and food waste. **But** we now need the Government as well as all of London — businesses, communities charities, local authorities and ordinary Londoners — to play their part in helping us to deliver good growth for our city — growth that makes London cleaner, greener and ready for the future. [44; 6]

As shown by (4), the contrastive DM *but* is introduced in order to (i) liaise the sentence “But we now need...” with the preceding one and (ii) demonstrate an alternative view concerning the ideas expressed in sentence “And we have already...”. Furthermore, the contrastive DM *but* in (4) seems to be involved in explicating an implied idea of concession in the sentence “But we now need ...”. In this regard, it should be noted that a fairly similar use of the contrastive DM *but* is reported in the prior studies [30-31], which indicate that *but* is employed plentifully in the Anglophone segment of climate change discourses. In this respect, it should be mentioned that contrastive DMs, such as *but* and *or*, have been found to be quite frequent in climate change discourses, for instance in climate change discourse by His Royal Majesty King Charles III [30]. In the present corpus, however, the contrastive DM *or* is located only on the phrasal level and, surprisingly, not on the clausal level as a DM that liaises two clauses. Hence, the DM *or* is not listed among the DMs that are summarised in Table 1.

Finally, let us consider the conditional DM *if* (N = 41). In the corpus, it is used in its prototypical role of signaling the relationship of condition and/or assumption, as demonstrated by excerpt (5).

- (5) Unless these are reduced, temperatures will continue to rise. Eventually, a tipping point could be reached, overcoming the earth’s natural buffering systems, bringing catastrophic climate change. [...] **If** all greenhouse gas emissions stopped now, it is projected that the world would still need to adapt to at least a century of irreversible climate change [46; 138]

In (5), we can conceive of the conditional DM *if* as a marker of the assumption that is expressed by the conditional clause “If all greenhouse gas emissions stopped now...”. Furthermore, we may argue that the

DM *if* is involved in projecting the evidential dimension onto the entire sentence “If all greenhouse gas emissions stopped now, it is projected that the world would still need to adapt to at least a century of irreversible climate change [46; 138]. Obviously, the evidential dimension is only implied in (5), however, its association with the presence of the conditional DM *if* opens avenues for further research in this direction. Furthermore, we should mention that the high frequency of the conditional DM *if* is not reported in the prior studies on climate change discourses [27–36]. Admittedly, a relatively high number of occurrences of *if* in the present corpus is suggestive of the peculiarities of the GLA’s climate change reporting, which, as previously mentioned, is evocative of the evidential dimension. Arguably, the exploration of evidentiality in conjunction with the use of DMs in climate change reporting may constitute a promising area of future studies.

Conclusions

The present study focuses on the identification and quantification of DMs in the corpus of climate change reports. The quantitative investigation of the corpus shows that the corpus is marked by the presence of such frequently occurring DMs as (i) *and*, (ii) *as*, (iii) *however*, (iv) *but*, and (v) *if*. These findings lend support to the previous research, which indicates that the DMs *and*, *but*, and *however* are rather frequently employed in the Anglophone segment of climate change discourses. Also, the present findings point to the frequent occurrence of the DMs *as* and *if*. Notably, the literature on DMs in climate change discourses does not seem to demonstrate that *if* occurs frequently in climate change reports.

Judging from the above, we may suggest that climate change reports by the GLA are characterised by the frequent use of the additive DM *and*, whose pragmatic role in the reports contributes to the maintenance of the discursive tone that expands upon the argument, elaborates upon it, and adds ideas to the argument in a cohesive and logical manner. Identically to *and*, the contrastive DM *however* is found to manifest transitions between the ideas and climate change-related themes. Furthermore, the corpus analysis points to the use of the contrastive DM *however* as a hedging device that imparts the reports a veneer of cautiousness. At the same time, we may conclude that the use of DM *however* in GLA’s reports is combined with the extensive use of the contrastive DM *but*, which, arguably, counterbalances the cautious and prudent manner of the GLA’s climate change communication. In other words, we contend that the combination of the DMs *however* and *but* in the corpus facilitates the creation of a balanced way of presenting climate change-related information in the reports. In addition, we argue that a relatively high frequency of the occurrence of the DM *if* provides the GLA’s reports on climate change with a semblance of the evidential dimension, which, apparently, enriches the discursive space of the reports and makes them look more credible and reliable. Similarly, we may conclude that the DM *as* adds a layer of elaboration that co-occurs with implicit cause-and-effect relationships, which impart the corpus an impression of a nuanced and fine-tuned manner of climate change communication.

Finally, we should point out that the study has uncovered a group of infrequent DMs that are typically associated with the manifestation of stance. Among them, we should mention the DMs *broadly* (N = 1), *conversely* (N = 3), *unfortunately* (N = 1), and *worryingly* (N = 1). These findings are suggestive of the sparing use of DMs that contribute to the manifestation of the attitudes and positioning of the reports’ authors. Admittedly, this is purposefully done in order to present the GLA’s reports in a more objective and less personal manner.

Summarising the aforementioned conclusions, we posit that the study of DMs in the GLA’s climate change reports contributes substantially to our understanding of the way the GLA communicates with its stakeholders and the public at large as far as the topic of climate change is concerned. Consequently, the added value of the present research investigation consists in unpacking the repertoire of DMs in the GLA’s climate change reports and the frequency of their use, which, in turn, may serve as a blueprint to be used in climate change reporting by the local authorities in other cities and towns in the UK and abroad.

Whilst the present study has generated new knowledge on DMs and provided added value to scholarship, the study has the following limitations. First of all, the corpus of the study consists only of the GLA’s official reports on the issue of climate change. It would be desirable in future studies to collect a similar corpus of speeches on climate change delivered by the GLA’s representatives and compare the written mode of the GLA’s communication on climate change with the oral one. Second, the study is limited by the analysis of the corpus of the GLA’s reports that are available online. It would be pertinent to analyse not only publicly available reports on the matter, but also scrutinise internal documentation on the issue of climate change. Hopefully, the limitations of the study will provide new impetus for further research on the GLA’s discourse and communication concerning the issue of climate change.

Primary sources

<https://www.london.gov.uk/>

References

- 1 Kapranov, O. (2025). Flooded London: Sensory lexica in The End We Start From by Megan Hunter. *East-West Cultural Passage*, 25(2), 167–189. <https://doi.org/10.2478/ewcp-2025-0019>
- 2 Gjerstad, Ø., Catellani, A., & Fløttum, K. (2025). Imagining action on climate change: A comparison of Belgian and Norwegian surveys. In A. Catellani, L.-A. Cougnon, Ø. Gjerstad, & A. Nugier (Eds.) *An Interdisciplinary Approach to Climate Change* (pp. 13–35). London: Routledge. <https://doi.org/10.4324/9781003630968>
- 3 Parviainen, J., Hochrainer-Stigler, S., Cumiskey, L., Bharwani, S., Schweizer, P. J., Hofbauer, B., & Cubie, D. (2025). The Risk-Tandem Framework: An iterative framework for combining risk governance and knowledge co-production toward integrated disaster risk management and climate change adaptation. *International Journal of Disaster Risk Reduction*, 116, 1–17. <https://doi.org/10.1016/j.ijdrr.2024.105070>
- 4 Kapranov, O. (2015). Conceptual metaphors in Ukrainian prime ministers' discourse involving renewables. *Topics in Linguistics*, 16(1), 4–16. <https://doi.org/10.2478/topling-2015-0007>
- 5 Kapranov, O. (2024). The framing of King Charles III's climate change-related activities by the leading American and British mass media. *Philologia*, 22(1), 53–73. <https://doi.org/10.18485/philologia.2024.22.22.3>
- 6 McManus, P. (2025). Science and science communication of anthropogenic climate change and extreme weather-related events: A Critical Discourse Analysis of the Alpha Road/Tambaroora bushfire in Australia, 2023. *Global Environmental Change*, 92, 1–10. <https://doi.org/10.1016/j.gloenvcha.2025.102996>
- 7 Khan, S. (2023). *Breathe: Seven Ways to Win a Greener World*. New York: Random House.
- 8 Kapranov, O. (2025). Modal verbs in London's climate change reports. *ExELL: Explorations in English Language and Linguistics*, 13(2), 94–110. <https://doi.org/10.51558/2303-4858.2025.13.2.94>
- 9 Kapranov, O. (2024). Climate change disclosures by the Bank of England: A framing analysis. *Language: Codification, Competence, Communication*, 2(11), 7–22. <https://doi.org/10.2478/lccc-2024-0007>
- 10 Appleby, P. (2025). *The Overburdened Planet: Making Sense of Sustainability*. Cham: Springer.
- 11 Pordeus, M.P., Pordeus, C.L.V., dos Santos, V.H.H., Santos, M.D., Nogueira, G.I., & Fonteles, J.C.P. (2025). Climate change and human activity: Global challenge in public policy and the cause-and-effect relationship in natural disasters around the world between 2020 and 2024. *Revista de Gestão Social e Ambiental*, 19(7), 1–20.
- 12 Johansen, B.E. (2023). *Global Warming and the Climate Crisis*. Cham: Springer. <https://doi.org/10.1007/978-3-031-12354-2>
- 13 Kapranov, O. (2017). Conceptual metaphors associated with climate change in corporate reports in the fossil fuels market: Two perspectives from the United States and Australia. In K. Fløttum (ed.) *The Role of Language in the Climate Change Debate* (pp. 90–109). London: Routledge.
- 14 Kapranov, O. (2023). Modal verbs in English-medium research articles on the issue of climate change and health. *Acta Marisiensis. Philologia*, 5(5), 38–48.
- 15 Tepe, S., Çabuk, A., & Aslantaş, S. (2025). The social impacts of climate change and its reflections on working life in terms of occupational safety. In S. Al-Naemi, R. Benlamri, W.L. Filho, J. McDonnell, R. Sadiq, H. Moda (Eds.) *International Conference Water and Food Security in the Face of Climate Change: Challenges and Opportunities for Resilience* (pp. 13–26). Cham: Springer. https://doi.org/10.1007/978-3-032-00098-9_2
- 16 Soomro, S., Sahito, J.G.M., & Gilal, F. (2025). The link between climate change and human health. In J. Bento & M.M. Torres (Eds.) *Global Perspectives on Climate Change, Inequality, and Multinational Corporations* (pp. 183–208). Cham: Springer. <https://doi.org/10.1007/978-3-031-80797-8>
- 17 Gupta, J., Van Der Leeuw, K., & De Moel, H. (2007). Climate change: a “glocal” problem requiring “glocal” action. *Environmental Sciences*, 4(3), 139–148. <https://doi.org/10.1080/15693430701742677>
- 18 Chao, Q., & Feng, A. (2018). Scientific basis of climate change and its response. *Global Energy Interconnection*, 1(4), 420–427. <https://doi.org/10.14171/j.2096-5117.gei.2018.04.002>
- 19 Kapranov, O., & Voloshyna, O. (2023). Learning English under the air-raid sirens: Analysing undergraduate EFL learners' sustainable practices. *Sustainable Multilingualism*, 23, 1–24. <https://doi.org/10.2478/sm-2023-0011>
- 20 Allman, L., Fleming, P., & Wallace, A. (2004). The progress of English and Welsh local authorities in addressing climate change. *Local Environment*, 9(3), 271–283. <https://doi.org/10.1080/1354983042000219379>
- 21 Buckley, P., & Enderwick, P. (2025). Tackling grand challenges: reimagining a moral ecology of globalisation. *Asian Business & Management*, 24(1), 33–54. <https://doi.org/10.1057/s41291-025-00294-9>
- 22 Phelps, N.A. (2021). *The Urban Planning Imagination: A Critical International Introduction*. Cambridge: Politi Press.
- 23 Siders, A.R. (2017). A role for strategies in urban climate change adaptation planning: Lessons from London. *Regional Environmental Change*, 17(6), 1801–1810. <https://doi.org/10.1007/s10113-017-1153-1>
- 24 Jennings, N., Fecht, D., & De Matteis, S. (2020). Mapping the co-benefits of climate change action to issues of public concern in the UK: a narrative review. *The Lancet Planetary Health*, 4(9), 424–433.

- 25 Kapranov, O. (2017). Discourse markers in academic writing in EFL by Swedish pre-service secondary school teachers. *Logos et Littera: Journal of Interdisciplinary Approaches to Text*, 4(1), 21–39.
- 26 Taboada, M., & de los Ángeles Gómez-González, M. (2012). Discourse markers and coherence relations. *Linguistics and the Human Sciences*, 6(1–3), 17–41.
- 27 Kapranov, O. (2016). Corpus analysis of discourse markers in corporate reports involving climate change. *EPiC Series in Language and Linguistics*, 1, 216–227.
- 28 Kapranov, O. (2025). Discourse markers in corporate disclosures on climate change by The Bank of England: A quantitative analysis. *Scientific Notes of Vinnytsia Mykhailo Kotsiubynskiy State Pedagogical University. Series: Philology (Linguistics)*, 39, 51–63. <https://doi.org/10.31652/2521-1307-2024-39-05>
- 29 Kapranov, O. (2025). Discourse markers in Scottish legal discourse on climate change. *Acta Globalis Humanitatis Et Linguarum*, 2(3), 156–168. <https://doi.org/10.69760/aghel.0250020023>
- 30 Kapranov, O. (2024). Discourse markers in King Charles III's climate change discourse. *The Annals of Ovidius University. Philology*, 35, 131–145.
- 31 Kapranov, O. (2025). Discourse markers in Keir Starmer's speeches on climate change. *Studies in Linguistics, Culture, and FLT*, 13(1), 8–26. <https://doi.org/10.46687/CUPP2991>
- 32 Fløttum, K. (2010). A linguistic and discursive view on climate change discourse. *ASp. la revue du GERAS*, (58), 19–37.
- 33 Fløttum, K., & Dahl, T. (2011). Climate change discourse: Scientific claims in a policy setting. *Fachsprache*, 33(3-4), 205–219.
- 34 Fløttum, K. (2014). Linguistic mediation of climate change discourse. *ASp. la revue du GERAS*, 65, 7–20.
- 35 Gjerstad, Ø., & Fløttum, K. (2021). Climate change lifestyle narratives among Norwegian citizens: A linguistic analysis of survey discourse. *European Policy Analysis*, 7, 386–404.
- 36 Fløttum, K., & Dahl, T. (2012). Different contexts, different “stories”? A linguistic comparison of two development reports on climate change. *Language & Communication*, 32(1), 14–23.
- 37 Fraser, B. (1990). An approach to discourse markers. *Journal of Pragmatics*, 14(3), 383–398. [https://doi.org/10.1016/0378-2166\(90\)90096-V](https://doi.org/10.1016/0378-2166(90)90096-V)
- 38 Fraser, B. (1999). What are discourse markers? *Journal of Pragmatics*, 31(7), 931–952. [https://doi.org/10.1016/S0378-2166\(98\)00101-5](https://doi.org/10.1016/S0378-2166(98)00101-5)
- 39 Fraser, B. (2006). Towards a theory of discourse markers. In K. Fischer (Ed.) *Approaches to Discourse Particles* (pp. 189–204). Paderborn: Brill. https://doi.org/10.1163/9780080461588_012.
- 40 Fraser, B. (2009). An account of discourse markers. *International Review of Pragmatics*, 1(2), 293–320. <https://doi.org/10.1163/187730909X12538045489818>
- 41 Kapranov, O. (2019). Discourse markers in writing on Facebook by early balanced English/Italian bilinguals. *Brno Studies in English*, 45(2), 77–100. <https://doi.org/10.5817/BSE2019-2-4>
- 42 Anthony, L. (2022). *AntConc Version 4.0.11*. Tokyo: Waseda University.
- 43 IBM. (2011). *IBM SPSS Statistics for Windows, Version 20.0*. New York: IBM.
- 44 The Greater London Authority. (2018). London Environment Strategy. *london.gov.uk*. Retrieved from https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf
- 45 Mott-MacDonald. (2018). Technical Assistance to Deliver London's Climate Action Plan. Climate Action Planning Technical Assistance Programme Work Package 4: Impacts Assessment. *london.gov.uk*. Retrieved from https://www.london.gov.uk/sites/default/files/mott_mcdonald_london_impacts_assessment.pdf
- 46 The Greater London Authority (2016). The London Plan 2016. Chapter 5: London's Response to Climate Change. *london.gov.uk*. Retrieved from <https://www.london.gov.uk/programmes-strategies/planning/london-plan/past-versions-and-alterations-london-plan/london-plan-2016/london-plan-chapter-five-londons-response-1>

O. Капранов

Үлкен Лондон әкімшілігі дайындаған климаттың өзгеруі туралы есептердегі дискурс белгілері

Ұлыбритания Біріккен Корольдігінің астанасы Лондон және әлемнің басқа да ірі қалалары адамдардың күнделікті өміріне кері әсер ететін климаттың өзгеруіне байланысты бірқатар құбылыстарды бастан кешіруде [1]. Олардың ішінде ауа райының күрт өзгеруін [2], аптап ыстықты [3], шамадан тыс жауын-шашынды [4], теңіз деңгейінің көтерілуін [5] және су тасқынын [6] атап өтуге болады. Лондонның қазіргі мэрі Садик Хан және Үлкен Лондон әкімшілігі (GLA) климаттың өзгеруінің теріс салдарын жақсы біледі [7]. Тиісінше олар климаттың өзгеруінің Лондон мен лондондықтарға жағымсыз әсерін азайтуға бағытталған шараларды әзірлейді, енгізеді және хабарлайды [7]. Атап айтқанда, Лондон әкімшілігі өз есептерінде климаттың өзгеруі мәселесін қалай жеңілдету керек екендігін көрсетіп отырады. Дегенмен әкімшіліктің климаттың өзгеруіне қатысты

есептері лингвистер мен филологтардың назарын аз аударды [8]. Тиісті әдебиеттердің жетіспеушілігін өтеу үшін бұл зерттеу Үлкен Лондон әкімшілігі дайындаған климаттың өзгеруі туралы есептер корпусын қарастырады және оларда қолданылатын метадискурсивті құралдарды талдайды. Нақтырақ айтқанда, зерттеу корпустың дискурсивті маркерлердің (ДМ) жиілігін зерттейді. Корпустың сандық зерттеуі «және», «қалай», «дегенмен», «бірақ», «егер» сияқты дискурсивті маркерлердің жиі кездесетінін көрсетеді. Олардың пайда болу жиілігі және климаттың өзгеруі бойынша коммуникацияның Үлкен Лондон әкімшілігіндегі рөлі мақалада толығырақ талқыланған.

Кілт сөздер: климаттың өзгеруі туралы коммуникация, климаттың өзгеруі туралы есептер, дискурсивті маркерлер (DM), Лондон, Үлкен Лондон әкімшілігі.

О. Капранов

Дискурсивные маркеры в отчетах об изменении климата, подготовленных администрацией Большого Лондона

Лондон, столица Соединенного Королевства, и другие крупные города мира сталкиваются с целым рядом явлений, связанных с изменением климата, которые негативно влияют на повседневную жизнь людей [1]. Среди них следует упомянуть резкое изменение погодных условий [2], волны жары [3], чрезмерные осадки [4], повышение уровня моря [5] и наводнения [6]. Нынешний мэр Лондона, Садик Хан, и администрация Большого Лондона (GLA) остро осознают негативные последствия изменения климата [7]. Соответственно, они разрабатывают, внедряют и распространяют меры, направленные на смягчение негативного воздействия изменения климата на Лондон и его жителей [7]. В частности, GLA сообщает о способах смягчения проблемы изменения климата в своих отчетах. Однако отчеты GLA, связанные с изменением климата, привлекают ограниченное внимание лингвистов и филологов [8]. Чтобы компенсировать недостаток соответствующей литературы, в данном исследовании рассматривается корпус отчетов об изменении климата, подготовленных администрацией Большого Лондона (GLA), и анализируются метадискурсивные средства, используемые в них. В частности, исследование изучает частоту дискурсивных маркеров (ДМ) в корпусе. Количественное исследование корпуса показывает, что ДМ «и», «как», «однако», «но» и «если» встречаются наиболее часто. Частота их встречаемости и их роль в коммуникации GLA по вопросам изменения климата обсуждаются в статье более подробно.

Ключевые слова: коммуникация по вопросам изменения климата, отчеты об изменении климата, дискурсивные маркеры (DM), Лондон, администрация Большого Лондона.

Information about the author

Kapranov, Oleksandr — PhD, Associate professor, NLA University College, Oslo, Norway. E-mail: oleksandr.kapranov@nla.no