

Modality in Climate Change-Related Discourse by King Charles III

Modalidad en el discurso relacionado con el cambio climático del rey Carlos III

OLEKSANDR KAPRANOV

Institution address: NLA University College, Campus Oslo, Linstows gate 3, Oslo, Norway 0166

E-mail: oleksandr.kapranov@nla.no

ORCID: 0000-0002-9056-3311

Received: 30/11/2023. Accepted: 04/06/2024.

How to cite this article: Kapranov, Oleksandr. "Modality in Climate Change-Related Discourse by King Charles III." *ES Review: Spanish Journal of English Studies*, vol. 45, 2024, pp. 31–59.

DOI: <https://doi.org/10.24197/ersjes.45.2024.31-59>

Open access article under a [Creative Commons Attribution 4.0 International License \(CC-BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).

Abstract: The article presents a corpus-based study that aims at establishing how modality is used in climate change-related discourse by King Charles III of the United Kingdom of Great Britain and Northern Ireland (the UK). The study involved a corpus of speeches on the topic of climate change delivered by King Charles III from 2005 to 2023. The corpus was analysed in the computer software AntConc (Anthony) in order to compute the frequency of the occurrence of the central modal verbs. Thereafter, they were analysed qualitatively to establish the types of modality associated with them. The analysis revealed that climate change-related discourse by King Charles III was marked by a high frequency of the occurrence of the modal verbs *will* and *can*. Their frequency, pragmatic roles, and association with the different types of modality are further discussed in the article.

Keywords: climate change-related discourse; epistemic modality; deontic modality; dynamic modality; modal verbs.

Summary: Introduction. The Issue of Climate Change in British Political Discourse. Modality in Political Discourse on the Issue of Climate Change: Literature review. The Present Study. Results and Discussion. Conclusions.

Resumen: El artículo presenta un estudio basado en corpus que tiene como objetivo establecer cómo se utiliza la modalidad en el discurso relacionado con el cambio climático por parte del rey Carlos III del Reino Unido de Gran Bretaña e Irlanda del Norte (Reino Unido). El estudio incluyó un corpus de discursos sobre el tema del cambio climático pronunciados por el rey Carlos III entre 2005 y 2023. El corpus fue analizado en el software AntConc (Anthony) para calcular la frecuencia de ocurrencia de los verbos modales centrales. Posteriormente, fueron analizados

cualitativamente para establecer los tipos de modalidad asociados a ellos. El análisis reveló que el discurso relacionado con el cambio climático del rey Carlos III estuvo marcado por una alta frecuencia de aparición de los verbos modales *will* y *can*. Su frecuencia, funciones pragmáticas y asociación con los diferentes tipos de modalidad se analizan con más detalle en el artículo.

Palabras clave: discurso relacionado con el cambio climático; modalidad epistémica; modalidad deóntica; modalidad dinámica; verbos modales.

Sumario: Introducción. La cuestión del cambio climático en el discurso político británico. Modalidad en el discurso político sobre el tema del cambio climático: Revisión de la literatura. El presente estudio. Resultados y discusión. Conclusiones.

INTRODUCTION

The discursive means of communicating the issue of climate change to the public at large are essential in addressing, mitigating, and tackling climate change as a global challenge (Andersen et al. 397). Assuming that discursive means of communicating the issue of climate change to the public are both critical and powerful (O'Neill et al. 413), it is of paramount importance to gain insight into how celebrities, politicians, public figures, and royalty construe their discourses concerning climate change (Anderson 535). It is argued in the literature that such symbolic figures as, for instance, King Charles III of the United Kingdom of Great Britain and Northern Ireland (the UK), “are increasingly appearing as key voices within the climate change debate” (Anderson 535). Conceivably, it seems pertinent and relevant to shed light on climate change-related discourse by King Charles III (further in the article—the King), given that he is considered one of the key public figures whose views on climate change are heeded to by the British public at large (MacGregor 124).

Informed by the need to investigate the attitude towards climate change by the members of the British royalty (Anderson 535; MacGregor 124), the article presents a corpus-based study that seeks to elucidate how modality is employed in climate change-related discourse by the King. It should be specified that discourse in general is referred to as the use of language as a social practice, which is instantiated as “a way of signifying experience from a particular perspective” (Fairclough 91). In discourse, modality is argued to play a critical role that pertains to a range of phenomena in pragmatics, morpho-syntax, and semantics (Lillian 2). The present study is based upon the definition of modality as a complex grammatical, pragmatic, and semantic phenomenon, which is employed in oral and written discourse as an indication of the “speaker’s attitudes

concerning the validity, possibility, necessity, predictability, desirability, inclination, volition, obligation, permission and evaluation of the events” (Cheng 176). Modality in English is conveyed by different word classes, for instance, adjectives, adverbs, nouns and noun phrases. It is deemed to be expressed most directly by the central modal verbs, such as *can*, *could*, *may*, *might*, *must*, *shall*, *should*, *will*, and *would* (Kiefer 69; Levine 70; Lyons 787; Nuyts 7; Payne 255; Wildman 1455).

Presumably, by means of identifying and analysing the frequency of the occurrence of the central modal verbs in the King’s discourse on climate change, it would be possible to gain a deeper insight into his discursive preferences in terms of the use of modality in his speeches on the topic. Currently, however, there are no recent studies that investigate the use of modality in the King’s discourse on climate change (Kapranov, “Modality in Sustainability Discourse” 88). The present study aims at generating new knowledge about modality in the King’s climate change-related discourse by means of collecting a corpus of his speeches on the issue of climate change and analysing it in order to establish the most frequently occurring modal verbs, their respective pragmatic roles and types of modality they are associated with. Specifically, the study seeks to answer the following research questions (RQs):

RQ 1: What are the most frequent central modal verbs in the corpus of the King’s speeches on climate change?

RQ 2: What pragmatic roles and types of modalities are associated with the most frequent central modal verbs in the corpus?

Further, the article is structured as follows. First, a brief summary of the literature on the issue of climate change in British political discourse is presented in section 1. Thereafter, in section 2, an outline of the prior studies on modality in climate change discourse is provided. Then, in section 3, I discuss the theoretical premises of the study and its methodology. The results of the study and their discussion are given in section 4. Finally, in section 5, the article concludes with the summary of the major findings and avenues for future research.

1. THE ISSUE OF CLIMATE CHANGE IN BRITISH POLITICAL DISCOURSE

The issue of climate change in British political discourse appears to attract a substantial amount of attention by researchers in discourse studies (Boas 21; Capstick et al. 725; Carvalho 172; Cass 47; Detraz and Betsill 303; Jaspal and Nerlich 122; Kapranov, “Rishi Sunak’s Framing” 85; Müller and Stegmeier 309; Nerlich 31; Peters 196; Rogers-Hayden et al. 134). Judging from the prior studies, climate change in British political discourse is seen as a political challenge both on the international and domestic levels (Cass 47). Notably, current British political discourse appears to adjust the major foci of the international agenda on climate change to the domestic realities (Cass 47). In line with the international actors and stakeholders, climate change discourse in the UK addresses, primarily, (i) the considerations of negative consequences of greenhouse gas emissions, (ii) the measures undertaken to reduce greenhouse gas emissions, and (iii) the rise in mean temperatures that constitutes a threat locally (i.e., in the UK) and globally (Jaspal and Nerlich 122; Kapranov, “The Framing of Climate Change” 55).

Research indicates that British political discourse on climate change is determined, at least partially, by how British media construe the issue of climate change and communicate it to the public at large (Carvalho 172). It is argued in the literature that media representations of climate change may influence the British voters’ political engagement by pointing out some aspects of media discourses that may either facilitate or constrain their engagement in terms of the voters’ choices that involve climate change-related issues (ibid.). In addition to the transmission of climate change-related discourses by mass media, British political discourse on climate change reverberates with the public’s opinion, or rather, opinions on the matter (Capstick et al. 725). Whilst the literature notes a volatile nature of the general public’s opinion on climate change in the UK, it is, nevertheless, posited that the public understanding of climate change is based upon the voters’ ethics and value-based notions that are not likely to be changed easily (ibid.).

Considering the literature, British political discourses on climate change have incorporated the construals of security and securitisation into the issue of climate change (Boas 21; Detraz and Betsill 303; Peters 196). In this regard, the literature argues that British political discourses on climate change have undergone, at least, a partial securitisation (Boas 5; Peters 198). In other words, the issue of climate change is no longer seen

as a merely environmental problem but is regarded by the British political elite within the domain of national security (Peters 196).

Alongside the construal of climate change within the realm of securitisation, the current British political discourses appear to regard climate change from the perspective of sustainability and renewable energy, which both pertain to the issue of climate change mitigation (Kapranov, “The Discourse of Sustainability” 35; Müller and Stegmeier 309). Prior studies point out to the recurrent discursive theme in British politics that frames climate change as a political issue that needs to be resolved within the context of sustainable and renewable energy sources (Rogers-Hayden et al. 134).

Summing up the present overview of the literature, it seems conceivable to contend that climate change is involved in British political discourses as an essential component of policy-making pertaining to risk, security, sustainability, and renewable energy. Importantly, it can be gleaned from the literature that British political discourse on climate change is affected dynamically by the influence of both media and the public at large.

2. MODALITY IN POLITICAL DISCOURSE ON THE ISSUE OF CLIMATE CHANGE: LITERATURE REVIEW

Modality is a well-researched area in discourse studies (Fløttum, “A Linguistic and Discursive View” 19; Juliansyah et al. 1; Kapranov, “Modal Verbs in Research Articles” 6; Lillian 1; Malik et al. 13; Nartey and Yankson 21; Poole and Hayes 37). The literature indicates that modality, which is manifested discursively by the central modal verbs, is amply used in political discourse (Nartey and Yankson 21). In particular, Lillian (6) demonstrates that political discourse is characterised by the presence of modal verbs that are associated with epistemic modality. It should be noted that epistemic modality

is concerned with the speaker’s assumptions, or assessment of possibilities, and, in most cases, it indicates the speaker’s confidence or lack of confidence in the truth of the proposition expressed. (Coates 112)

Typically, epistemic modality is deemed to be manifested by such modals, as *might* and *may* (Portner 2). It has been established that epistemic modality, which is realised via the aforementioned modals, is

employed by politicians in order to inform and persuade the public at large (Lillian 12). In addition, the literature posits that political discourse utilises modals as a marker of stance (Poole and Hayes 37) in order to explicate the pragmatic strategies of hedging and politeness (Boicu 15; Hyryn 101).

In contrast to the prior studies on modality in political discourse, however, modality in climate change discourse by prominent politicians, public figures, and royalty has attracted insufficient scholarly attention (Juliansyah et al. 1; Malik et al. 13; Poole and Hayes 37). Judging from the studies that shed light onto modality in climate change-related issues within political discourse, *can* and *could* are reported to be frequent modals that indicate conditionality and/or possibility in addition to uncertainty (Bailey et al. 202; Fløttum and Dahl 20). Similar findings are communicated by Fløttum (“Linguistic Mediation” 8), who argues that political climate change-related discourse involves a high number of modals, such as *may*, *might*, *could*, and *would*, which are used in order to convey hedging and hesitation in climate change-related discourse.

Additionally, the literature has established that the central modal verbs *will* and *can* are rather frequent in the corpus of speeches on climate change by the Secretary-General of the United Nations (Juliansyah et al. 4). Similarly, the central modal verbs *will* and *must* are reported to be frequently used in political discourse that involves climate change-related issues by the politicians, who seek to show a strong display of conviction in the betterment of the environment (Malik et al. 19).

Summarising this section of the article, we may argue that modality is manifested in the discursive space of climate change-related political discourse by a range of modal verbs that play important pragmatic roles and reflect a variety of discourse-pragmatic purposes of the particular text at hand.

3. THE PRESENT STUDY

As previously mentioned in the introductory section of the article, modality seems to be an under-researched aspect of the King’s discourse on climate change. The current gap in scholarship concerning his climate change discourse appears rather surprising given that he has been addressing this critical issue repeatedly since the early 2000s (MacGregor 124). At that time, however, he was referred to as The Prince of Wales. In light of the contemporaneous gap in research, the present study aims to enhance our knowledge about modality in the King’s speeches on climate

change by means of (i) collecting a corpus of his speeches on this issue and (ii) identifying the central modal verbs in them. Following the research aims, two RQs (i.e., RQ 1 and RQ 2) are formulated and presented in the introductory part of the article. To reiterate, the RQs are focused on learning about the most frequent modal verbs in the corpus and their association with the pragmatic roles and types of modality. Prior proceeding to the study, however, it is relevant to specify its theoretical premises, which, in particular, pertain to RQ 2. Namely, in the subsection below, I explain the theoretical framework allied with (i) the pragmatic roles of modals in climate change discourse and (ii) the types of modality associated with them.

3.1 The Theoretical Premises of the Study

On the theoretical level, the study is informed by the approach to modality and the English modals formulated by Palmer (24–50) in his seminal monograph *Modality and the English Modals*, second edition. Palmer proposes the division of modality into epistemic, deontic, and dynamic types (35).

Let us consider in more detail the way Palmer defines and reasons about the aforementioned types of modality. According to Palmer, epistemic modality is easily distinguishable in its syntax and semantics from the other two (50). Moreover, he contends that epistemic modality is characterised by a substantial degree of internal regularity and completeness (ibid.). Specifically, Palmer indicates that

the function of epistemic modals is to make judgments about the possibility, etc., that something is or is not the case. Epistemic modality is, that is to say, the modality of propositions, in the strict sense of the term, rather than of actions, states, events, etc. (50)

In other words, he maintains that “epistemic modals are normally subjective, ie that the epistemic judgment rests with the speaker” (50). Furthermore, Palmer (ibid.) points out that the relevant modals that are associated with epistemic modality occur, predominantly, in the present tense.

As far as deontic modality is concerned, Palmer asserts that it is typically manifested by the modals that denote giving permission (e.g., *may*) (69). However, he proceeds that it also may refer to an obligation

(e.g., *must*), a promise and/or a threat (e.g., *shall*). In terms of the deontic type of modality, Palmer demonstrates that *may* appears to be almost invariable associated with deontic modality (69–82). Palmer indicates that *can* may be reflective of deontic modality, given that it is often used to give permission.

Palmer explains that the dynamic type of modality refers to the ability or volition of the subject in a clause (83). Dynamic modality is thought to consist of two subtypes. The first subtype is referred in his monograph as (i) dynamic possibility, which is conventionally represented by the modal verb *can* and semi-modal *be able to*, and (ii) dynamic necessity, which is normally associated with *must*, *have to*, and *have got to*. In addition, it should be specified that Palmer posits that

dynamic modality is subject-oriented in the sense that it is concerned with the ability or volition of the subject of the sentence, rather than the opinions (epistemic) or attitudes (deontic) of the speaker (and addressee). (113)

Another theoretical pillar of the study is represented by the approach towards the pragmatic roles of modals, which has been developed by Kjersti Fløttum (“A Linguistic and Discursive View” 19). Having examined an extensive corpus of texts on climate change, Fløttum considers modality as an invaluable linguistic resource that allows a researcher to investigate the intricacies of climate change-related discourse (“A Linguistic and Discursive View” 19; “Linguistic Mediation” 7–20). Fløttum argues that a detailed examination of modal verbs as a micro-discursive means of structuring the speaker’s discourse on climate change can facilitate a better and deeper understanding of the speaker’s intentions, stance, and attitudes towards the topic (Fløttum and Dahl 14–23). It follows from Fløttum’s (“A Linguistic and Discursive View” 19; “Linguistic Mediation” 7–20) reasoning that from the point of view of pragmatics, modal verbs are involved in the manifestation of the speaker’s stance vis-à-vis the issue of climate change. According to Fløttum (“A Linguistic and Discursive View” 19), the speaker’s stance on the issue of climate change may be direct and precise or, alternatively, less direct and, even, circuitous. In particular, Fløttum (“A Linguistic and Discursive View” 19) posits that the modals *may*, *might*, *could*, *should* and *would* are pragmatically involved in toning down, or hedging, the propositional content of a stretch of discourse on climate change in which they occur. Fløttum (“A Linguistic and Discursive View” 19) further illustrates her

contention by a quote from the Intergovernmental Panel on Climate Change (IPCC), in which the modal verb *may* is utilised as a hedging device to impart the proposition a tentative tonality, e.g.

Without substantial investment flows and effective technology transfer, it *may* be difficult to achieve emission reduction at a significant scale. Mobilising financing of incremental costs of low-carbon technologies is important. (IPCC 20)

As seen above, the modal verb *may* as a hedging device conveys a degree of uncertainty to the clause, thus facilitating its hedging. It should be noted that Fløttum's treatment of hedging in climate change discourse finds multiple parallels with hedging in academic discourse, which has been postulated by Hyland (239). In contrast to the modals, which are involved in hedging (i.e., *may*, *might*, *could*, *should* and *would*), Fløttum ("A Linguistic and Discursive View" 19; "Linguistic Mediation" 7–20; Fløttum and Dahl 14–23) considers the modals *can*, *must*, *shall*, and *will* to be associated with the pragmatic role of rendering a piece of discourse on climate change certainty and boosting a certain part of the utterance. In other words, the modals *can*, *must*, *shall*, and *will* as boosters contribute to (i) emphasising the part of discourse on climate change and (ii) facilitating its prominence.

Another theoretical consideration that harkens back to Fløttum's ("A Linguistic and Discursive View" 19; "Linguistic Mediation" 7–20) approach to modal verbs in climate change discourse, involves her seminal ideas concerning the discursive roles of passive and active constructions in relation to modals. Specifically, it is inferred from Fløttum that active constructions with modals (e.g., *can mitigate*) facilitate the creation of a more direct tonality in climate change discourse. In contrast, however, passive constructions with modals (e.g., *can be mitigated*) are ascribed to a rather detached and more objective pragmatic tonality in texts that deal with the issue of climate change. Unfortunately, Fløttum does not pursue the findings concerning the pragmatic role of active and passive constructions with modals and does not report any statistical measures associated with their pragmatic roles. Nevertheless, the present study takes on board Fløttum's observations as far as the pragmatic roles of active and passive construction with modals are concerned.

3.2 The Corpus of the Study

With the aforementioned theoretical and methodological considerations in mind, the corpus of the study was collected. The corpus was comprised of the King's speeches on climate change from 2005 to 2023. I accessed the written transcripts of his speeches on the official website of the British royal family at www.royal.uk and searched for them with help of the keywords "climate change," "global climate change," "global warming," "greenhouse gas/gasses," "CO2 emissions," "the rise of sea level/levels," and "global temperature rising." Once the relevant transcripts of the speeches were identified, they were downloaded as Word files in order to calculate the descriptive statistics of the corpus in the software program Statistical Package for Social Sciences (SPSS) version 20.0 (IBM) (see Table 1 below).

Table 1. The descriptive statistics of the corpus

| # | The descriptive statistics | Value |
|---|------------------------------|---------|
| 1 | The total number of speeches | 20 |
| 2 | The total number of words | 36 272 |
| 3 | Mean words | 1 813.6 |
| 4 | Standard deviation words | 842.1 |
| 5 | Maximum words | 3 462 |
| 6 | Minimum words | 829 |

3.3 The Methodology of the Study

In terms of the methodology, the study employed a quantitative corpus-based component that was subsequently enhanced by a qualitative analysis. The quantitative analysis of the corpus was carried out in the computer software AntConc version 4.0.11 (Anthony) in order to compute the frequency of the occurrence of the central modal verbs, namely *can*, *could*, *may*, *might*, *must*, *shall*, *should*, *will*, and *would*. To do so, each transcript of the King's speech on climate change was downloaded from the website www.royal.uk, converted into a Word file and processed in AntConc (Anthony), which yielded the occurrence of the respective modal verb per file. Thereafter, the occurrence of each modal verb per file were

merged in SPSS in order to compute mean and standard deviation per each modal verb in the entire corpus.

In addition, the quantitative analysis of the most frequent modal verbs was extended by the N-Gram function of AntConc in order to illustrate the textual environment in which the most frequent modal verbs in the corpus occurred. It should be specified that the N-Gram function was used to scan the corpus for an N number of clusters. Following Szczygłowska (18), the N value in N-Gram analysis was set at 3. That was done in order to see how modals were used in active (e.g., *will mitigate*) and passive (e.g., *will be mitigated*) constructions, respectively. In line with Svenonius, the term “construction” was treated in the analysis as “a characteristic formal pattern of syntactic categories or features, usually associated with some meaning and/or discourse function” (15).

Following that, the qualitative part of the investigation was carried out. It involved a manual identification of the types of modality associated with the central modal verbs in the corpus. The qualitative analysis was based on Palmer’s (50–133) classification of the types of modality summarised in the preceding subsection of the article. Methodologically, the inclusion criteria of each individual modal verb in the corpus into the respective types of modality were in line with Palmer and summarised in Table 2.

Table 2. The inclusion criteria of modal verbs into the respective types of modality based upon Palmer (50–133)

| # | Types of Modality | Inclusion Criteria: A Modal Verb |
|---|-------------------|---|
| 1 | Deontic | (i) Expresses a speaker’s permission (for instance, <i>may, can</i>), obligation (e.g., <i>must</i>), a promise or a threat (e.g., <i>shall</i>), which take place at the moment of speaking; (ii) Expresses possibility, which consists in giving permission (for instance, <i>may, can</i>); (iii) Expresses a command, often of a brusque or impolite kind (e.g., <i>can</i>); (iv) Expresses obligation (e.g., <i>must</i>), which implies that the speaker is in a position to lay the obligation, and is thus in a position of some authority; |

| | | |
|-------|-----------|---|
| 2 | Dynamic | <ul style="list-style-type: none"> (i) Expresses physical possibility (e.g., <i>can</i>) by indicating that an event is possible; (ii) Expresses judgments about the degree or extent that an action is possible (e.g., <i>can</i>); (iii) Expresses implicitly what one can do or what possibly will/should be implemented (e.g., <i>can</i>). (iv) Refers to the ability of the subject, animate or inanimate (e.g., <i>can</i>); (v) Co-occurs with self-mentions, such as <i>I</i> and/or <i>we</i> (e.g., <i>can</i>); (vi) Co-occurs with the sense verbs, such as <i>see, hear</i> (e.g., <i>can</i>); (vii) Co-occurs with such verbs, as <i>afford, bear, face, remember, stand, think, understand</i> (e.g., <i>can</i>); (viii) Refers to rules and regulations (for instance, <i>can, may</i>); |
| <hr/> | | |
| 3 | Epistemic | <ul style="list-style-type: none"> (i) Expresses the degree/degrees of possibility and necessity that are marked, typically, by <i>may</i> and/or <i>must</i>; (ii) Expresses subjectivity, i.e. that the subjective judgment rests with the speaker; (iii) Expresses a tentative form of <i>will</i> (i.e., <i>would</i>), which can be paraphrased as ‘I should think that ...’ or ‘It would be reasonable to conclude that’; (iv) Functions in making judgments about the possibility, etc., that something is or is not the case; (v) Manifests weak probability (e.g., <i>may</i>), which can be paraphrased as ‘(it is) possible that’; (vi) Refers to what is reasonable to expect (e.g., <i>will</i>), which can be paraphrased as ‘A reasonable inference is that.’ |

Importantly, it should be noted that whereas two subtypes of dynamic modality were considered by Palmer in his monograph (83), namely (a) dynamic possibility and (b) dynamic necessity, they were analysed in the present study as one type (i.e., without any further distinction of subtypes). That was done due to the following reason. According to Palmer (83), the distinction was necessary in order to account for the difference between

must and *have to*. Given that *have to* and other semi-modals (e.g., *used to*) were not analysed in the study, the distinction between the two subtypes of dynamic modality was considered unnecessary for the purpose of the present investigation.

Another critical methodological note that should be explained in more detail involved the treatment of *will* of futurity as an epistemic modal. The treatment was based upon Palmer (133), who, by quoting Coates (“The Semantics of the Modal”) referred to the epistemic *will* as being associated with predictability, whereas the futurity *will* being related to prediction, both of which were subsumed by Coates (“The Semantics of the Modal”) under the aegis of epistemic modality. Whilst Palmer (ibid.) argued against the futurity *will* as an epistemic modal, his reasoning was motivated by an attempt to account for the contrasts of the *will of futurity* with *be going to*. However, since *be going to* was not analysed in the present study, the futurity *will* and the epistemic *will* proper were treated as epistemic in the analysis. Concurrently, it should be observed that Palmer (133) argued that *will* could manifest volition. Hence, it is inferred from Palmer (ibid.) that the volitional *will* could be classified as a dynamic modal. It should be noted that a similar contention is found in the literature (see Gisborne 44–61 and Huddleston and Pullum 1171).

Concluding the methodological section of the article, it should be borne in mind that in addition to the types of modality proposed by Palmer, the present analysis considered ambiguous cases. They referred to the instances when it was not clear from the context what type of modality the modal verb belonged to. After the types of modality associated with the most frequent modal verbs had been identified and counted manually, they were converted into numerical representations and computed as percentages in SPSS. The results of the qualitative and quantitative analyses are presented and discussed below, in section 4 of the article.

4. RESULTS AND DISCUSSION

The results of the quantitative corpus analysis have revealed that the King’s speeches on the issue of climate change involve eight out of nine central modal verbs, namely *can*, *could*, *may*, *might*, *must*, *should*, *will*, and *would* (the total number (N) = 825). These findings are presented in table 3, which involves the total N of the aforementioned modal verbs, their means (M), standard deviations (SD), maximum and minimum occurrences.

Table 3. The frequency of the occurrence of the central modal verbs in the corpus

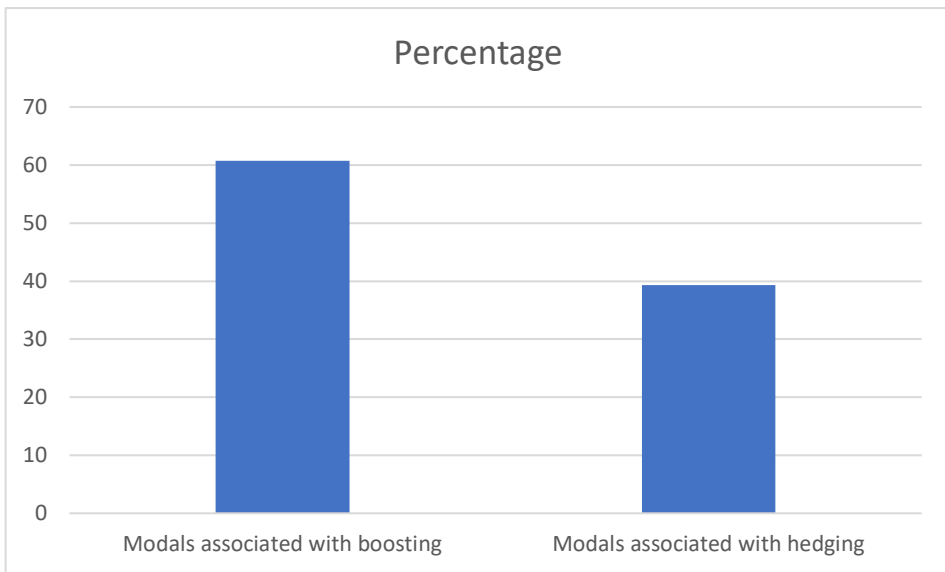
| # | Modal Verbs | Total N | Mean | SD | Max | Min |
|---|---------------|---------|------|-----|-----|-----|
| 1 | <i>Can</i> | 190 | 9.5 | 5.2 | 21 | 3 |
| 2 | <i>Could</i> | 78 | 4.3 | 3.3 | 12 | 1 |
| 3 | <i>May</i> | 92 | 4.8 | 4.3 | 14 | 1 |
| 4 | <i>Might</i> | 48 | 3.0 | 1.6 | 7 | 1 |
| 5 | <i>Must</i> | 62 | 3.4 | 2.2 | 9 | 1 |
| 6 | <i>Shall</i> | 0 | 0 | 0 | 0 | 0 |
| 7 | <i>Should</i> | 29 | 2.1 | 1.1 | 5 | 1 |
| 8 | <i>Will</i> | 249 | 12.5 | 6.4 | 25 | 1 |
| 9 | <i>Would</i> | 77 | 4.1 | 2.7 | 13 | 1 |

We can observe in Table 3 that the most frequent modals in the corpus are represented by *can* and *will*, respectively, whereas the frequency of the occurrence of *could*, *may*, *might*, *must*, *should*, and *would* is below N = 100.

In relation to RQ 1, let us direct our discussion towards *can* and *will*, given that RQ 1 in the study is concerned with the most frequent central modal verbs in the corpus of the King's speeches on the issue of climate change. It should be noted that the presence of the frequent modals *can* and *will* in the corpus lends support to the literature, which indicates that political discourse on climate change involves a rather high occurrence of *can* (Bailey et al. 202; Fløttum, "Linguistic Mediation" 7; Fløttum and Dahl 20) and *will* (Juliansyah et al. 4; Malik et al. 19). At the same time, however, the present results are in contrast to a number of prior studies, which demonstrate that the modal verbs *could*, *may*, *might*, *should*, and *would* are quite frequent in Anglophone political discourses (Boicu 15; Hyryn 101; Lillian 12; Poole and Hayes 37), in which they are employed as a pragmatic marker of hedging. Judging from the findings outlined in table 3 above, the hedging-related modal verbs *could*, *may*, *might*, *should*, and *would* in the King's discourse on climate change are less frequent in comparison with *will* and *can*. This finding is further supported by the comparison of the combined frequency of the occurrence of the modal verbs that are typically associated hedging (i.e., *could*, *may*, *might*, *should* and *would*) on the one hand and the modals that are thought to be related to boosting (i.e., *can*, *must*, and *will*) on the other hand. The comparison

is illustrated by Fig. 1 as the percentage of these two groups of modals to the total number of modals in the corpus.

Fig. 1. The percentage of modal verbs as hedgers and boosters in the corpus

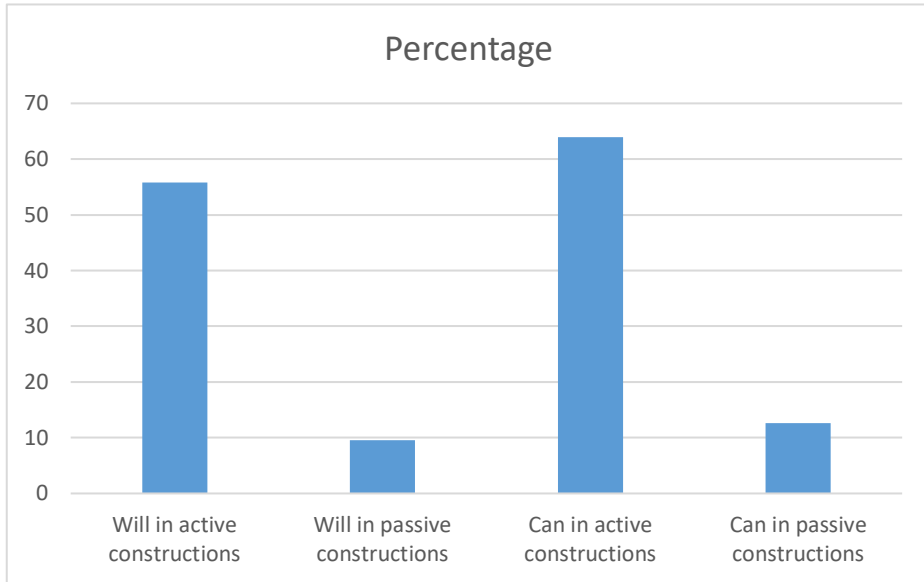


It is illustrated by Fig. 1 that the King’s speeches on the issue of climate change utilise more boosters in comparison with hedgers, which are typically associated with the modals *can*, *must*, and *will* (Fløttum, “A Linguistic and Discursive View” 19; “Linguistic Mediation” 7–20; Fløttum and Dahl 14–23). A relatively higher frequency of the occurrence of modals as boosters, in particular *can* and *will*, seems to render a more direct, engaged, and perhaps, pro-active tonality of the King’s speeches on climate change.

As far as the contention concerning the King’s engaged and pro-active tonality is concerned, it is further supported by the findings that have been yielded by the application of the N-Gram function in AntConc. Specifically, it has been revealed that *will* occurs in the textual environment of the corpus, predominantly, in the form of active constructions (56%), whereas the passive constructions with *will* are less numerous (10%). Similarly, *can* is utilised substantially more in active

constructions (64%), whilst the passive ones are employed significantly less (13%), as emblematised by Fig. 2 below.

Fig. 2. *Can* and *will* in active and passive constructions

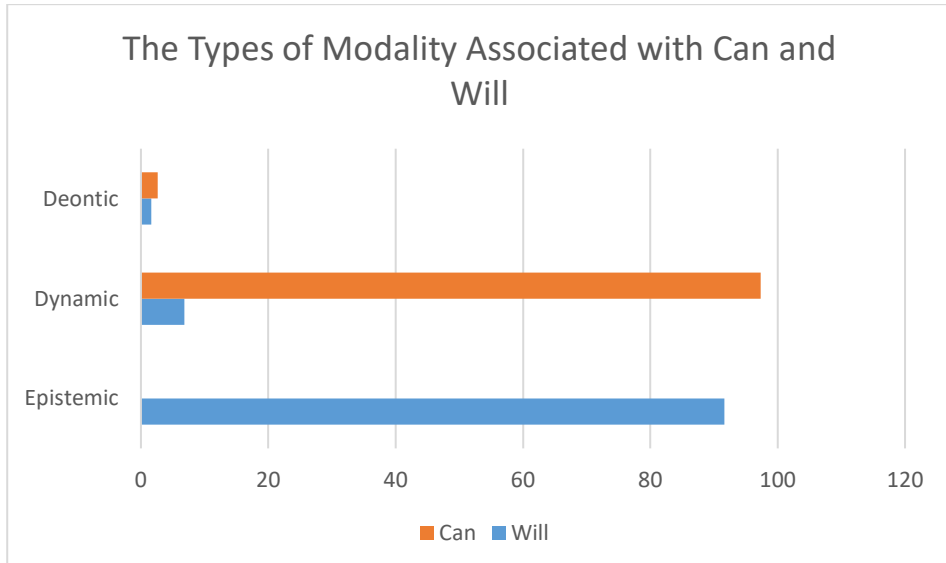


Given that modal verbs in the passive voice are considered to impart a less personal pragmatic tonality (Narrog 118), it can be argued that the prevalence of *will + verb* and *can + verb* constructions in active voice (see Fig. 2) is indicative of the King's engagement and, quite obviously, personal involvement in the issue of climate change. Indeed, active constructions with *will + verb*, as well as *can + verb*, collocate quite regularly with the first-person pronoun *I* in the corpus. The use of the self-mention *I* in conjunction with the aforementioned active constructions is illustrated by excerpt (1) below:

(1) This is really is a groundbreaking development which could make the whole difference to the future of the rainforests, about which **I will say** more later. Meanwhile, **I can only hope** that other companies which use palm oil will follow your determined and principled leadership—this really is corporate responsibility in action. (Speech by HRH The Prince of Wales at the Second May Day Business Summit on Climate Change)

Whilst we have established that *will* and *can* are the most frequent modals in the corpus, which are used, typically, in active constructions, it is pertinent to shed light on them from a qualitative perspective. In this regard, let us return to RQ 2 in the study, which addresses the types of modality that are associated with the most frequent modals in the corpus. Presumably, by examining the types of modality we may deepen our understanding of the King’s stance vis-à-vis the issue of climate change. It should be reiterated that the pragmatic role of modal verbs is regarded in the study through the prism of the approach proposed by Fløttum (“Linguistic Mediation” 7), who posits that modals, along with other micro-discursive means, facilitate our comprehension of the speaker’s attitudes and intentions on the topic of climate change. The qualitative analysis of the types of modality associated with the most frequent modals in the corpus has yielded the findings that are summarised in Fig. 3, in which the types of modality related to *will* and *can* are given as the percentage to the total number of these modals in the corpus.

Fig. 3. The types of modality associated with *will* and *can*



Prior to discussing the findings summarised in Fig. 1, the following should be noted. Whilst the methodology in the study factored in a possibility of ambiguous cases (i.e., instances when it was not clear from

the context what type of modality the modal verb belonged to), the application of Palmer's typology of modality to the corpus provided clear indications what types of modality the most frequent modals in the corpus (i.e., *can* and *will*) are associated with. In particular, it is evident from Fig. 3 that the modal *will* is employed in the King's speeches, predominantly, as epistemic *will*. This finding can be illustrated by a quote from the King's (back then—The Prince of Wales) speech at the meeting about Forests and Climate Change at Lancaster House on 29 October 2015:

(2) . . . an absolutely crucial milestone in the long overdue international effort to keep to a 2 degree world, although I think that everyone realizes that this C.O.P. *will* be the beginning of a new phase in the process, not the end in itself.

Notably, in the same speech, there is a case of the use of *will* that, according to Palmer, can be interpreted as deontic *will*, assuming that it is utilised to render permission: "Before we begin, though, and if you *will* allow me, I would just like to make three brief observations—the first on C.O.P.21 and its significance."

Whilst deontic *will* is infrequent in the corpus (see Fig. 3), dynamic *will* is more numerous, even though it is utilised substantially less than epistemic *will*. The presence of dynamic *will* is exemplified by the following excerpt taken from the speech by The Prince of Wales at The Prince of Wales's International Sustainability Unit's meeting on Forests, Climate Change and Development on 26 January 2015:

(3) So, above all, I pray this meeting *will* give rise to further ambitious international partnerships to implement good policies and incentives on sustainable land use and integrated, ecologically minded, truly resilient rural development in all countries of the world.

It follows from Fig. 3 that epistemic modality is the prevalent type of modality as far as the modal *will* is concerned. Arguably, the prevalence of epistemic modality associated with the frequent modal *will* renders the King's speeches on climate change a subjective, perhaps, deeply personal dimension, which, according to Palmer, is routinely associated with the epistemic modals that are typically "subjective, i.e. that the epistemic judgment rests with the speaker" (50).

In contrast to *will*, however, the modal *can* in the corpus of the King's speeches appears to be associated, mainly, with dynamic modality and to a substantially lesser degree with the deontic type of modality. Let us illustrate *can* as a deontic modal by excerpt (3), which is represented by the transcript of the King's speech delivered at a meeting about Forests and Climate Change at Lancaster House on 29 October 2015:

(4) We *can't* possibly allow it to become 4 degrees as climate scientists have warned, that's 7 degrees Fahrenheit, a big increase which will be impossible, I think, to adapt to.

Deontic *can*, which denotes permission, or rather the lack thereof as in (4), is not frequent in the corpus. Unlike deontic *can*, however, dynamic *can* occurs in the majority of cases. Its occurrence is further illustrated by excerpt (5), which involves a speech delivered by HRH The Prince of Wales by video to the DEFRA Conference 'Climate Change: The Business Forecast' on 6 October 2005:

(5) Are there really no additional cost-effective steps that could be taken to encourage everyone to do more to save energy? Even the seemingly little things *can* make a significant contribution—such as switching off lights and the “stand-by” buttons on televisions and computers.

Given that dynamic *can* prototypically manifests possibility and expresses judgments about the degree that an action is possible, we may argue that its high frequency of the occurrence in the King's speeches is concomitant with the King's view of what he and the general public can do and implement in order to mitigate the negative consequences of climate change, such as “switching off lights and the ‘stand-by’ buttons on televisions and computers” (see excerpt (5)).

Summarising the discussion of the findings, we may posit that the King's speeches on climate change are characterised by his preference for the modal verbs *will* and *can* that are associated, primarily, with epistemic and dynamic modalities, respectively.

CONCLUSIONS

The article introduced and discussed a study that sought to learn about (i) the frequency of the occurrence of central modal verbs and (ii) the types

of modality associated with them in the corpus of speeches by King Charles III on the topic of climate change. Whilst “modality and modal verbs in particular are one of the most researched topics in the English language” (Rizvić-Eminović and Šukalić 211), there are insufficient studies on the frequency and use of the central modals in climate change discourse in general, and by the members of the British royal family in particular. Whereas the present investigation is one of the first attempts at shedding light on this under-researched topic, its findings, nevertheless, have revealed that the modal verbs *will* and *can* are the most frequently occurring modals in the corpus of his speeches on climate change. By means of adopting Palmer’s classification of the types of modality, it was established in the present investigation that the most frequent modals in climate change-related discourse by King Charles III, namely *can* and *will*, were associated, predominantly, with dynamic (*can*) and epistemic (*will*) types of modality.

The aforementioned findings could be interpreted within the parameters of Fløttum’s approach to modal verbs and modality as micro-discursive means that allow to shed light onto the King’s attitude and position towards the issue of climate change. Given that his speeches on climate change were found to be characterised by epistemic modality, it could be concluded that his climate change-related discourse could be described as subjective and personally engaged. Additionally, the highly frequent modal *can*, which was found to related to dynamic modality, imparted King Charles III’s speeches on climate change a more action-oriented and practical dimension, which involved the King’s considerations of what could be done and implemented to stave off the negative consequences of climate change.

Obviously, the findings should be treated with caution, since more research should be conducted on the central modals in climate change discourse by the British royals. Hopefully, the present investigation could provide a bench-mark for future studies, which would examine other linguistic and micro-discursive means associated with the central modals and modality in order to arrive at more comprehensive findings. Another direction for future research could involve a comparison of potential changes in the use of modals and modality in the speeches on climate change by King Charles III in his role of His Royal Highness (HRH) Prince Charles and after his coronation.

ACKNOWLEDGEMENTS

The author is appreciative of the editors and two anonymous reviewers, whose comments and suggestions are invaluable.

PRIMARY SOURCES

HM King Charles III. A speech by His Majesty The King at the opening of COP28, Dubai, U.A.E. 1 Dec. 2023, www.royal.uk/news-and-activity/2023-12-01/a-speech-by-his-majesty-the-king-at-the-opening-of-cop28-dubai-uae/.

HRH Prince Charles. A speech by The Prince of Wales at a meeting about Forests and Climate Change at Lancaster House. 29 Oct. 2015, www.royal.uk/clarencehouse/speech/speech-prince-wales-meeting-about-forests-and-climate-change-lancaster-house/.

HRH Prince Charles. A speech by HRH The Prince of Wales at a meeting about “Putting Health at the Centre of the Climate Change debate: The role of the Health community in the run up to COP21,” The Royal Society, London. 25 Feb. 2015, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-meeting-about-putting-health-centre-climate-change-debate-role/.

HRH Prince Charles. A speech by HRH The Prince of Wales at The Prince of Wales's International Sustainability Unit's meeting on Forests, Climate Change and Development. 26 Jan. 2015, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-prince-wales-international-sustainability-units-meeting-forests/.

HRH Prince Charles. A speech by HRH The Prince of Wales at the Energy and Climate Change Meeting in Campeche, Mexico. 4 Nov. 2014, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-energy-and-climate-change-meeting-campeche-mexico

HRH Prince Charles. A speech by HRH The Prince of Wales on climate change and the environment at Cape Town University. 5 Nov. 2011, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-climate-change-and-environment-cape-town-university/.

HRH Prince Charles. A speech by HRH The Prince of Wales to the “Deal or No Deal” Corporate Leaders Group on Climate Change Conference. 14 July 2010, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-deal-or-no-deal-corporate-leaders-group-climate-change-conference/.

HRH Prince Charles. A speech by HRH The Prince of Wales at the Copenhagen Climate Change Summit. 15 Dec. 2009, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-copenhagen-climate-change-summit/.

HRH Prince Charles. A speech by HRH The Prince of Wales to open the Nobel Laureates Symposium on Climate Change, St James's Palace, London. 27 May 2009, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-open-nobel-laureates-symposium-climate-change-st-jamess-palace/.

HRH Prince Charles. A speech by HRH The Prince of Wales at the Third May Day Business Summit on Climate Change, London. 1 May 2009, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-third-may-day-business-summit-climate-change-london/.

HRH Prince Charles. A speech by HRH The Prince of Wales on climate change from tropical deforestation, Mansion House, London. 10 Dec. 2008, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-climate-change-tropical-deforestation-mansion-house-london/.

HRH Prince Charles. A speech by HRH The Prince of Wales for the Bali to Poznan Corporate Leaders Group on Climate Change conference, St James's Palace, London. 16 July 2008, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-bali-poznan-corporate-leaders-group-climate-change-conference-st/.

HRH Prince Charles. A speech by HRH The Prince of Wales at the Second May Day Business Summit on Climate Change, London. 1 May 2008, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-second-may-day-business-summit-climate-change-london/.

HRH Prince Charles. A speech by HRH The Prince of Wales on climate change to the European Parliament in Brussels. 14 Feb. 2008, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-climate-change-european-parliament-brussels/.

HRH Prince Charles. HRH The Prince of Wales about The Bali Communiqué on Climate Change, Financial Times (Global Edition). 30 Nov. 2007, www.royal.uk/clarencehouse/speech/article-hrh-prince-wales-about-bali-communique-climate-change-financial-times-global-edition/.

HRH Prince Charles. A speech by HRH The Prince of Wales at the Celtic Nations Business Summit on Climate Change, Cardiff. 7 Nov. 2007, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-celtic-nations-business-summit-climate-change-cardiff/.

HRH Prince Charles. Closing remarks by The Prince of Wales at the May Day Business Summit on Climate Change, St James's Palace, London. 1 May 2007, www.royal.uk/clarencehouse/speech/closing-remarks-prince-wales-may-day-business-summit-climate-change-st-james-palace-london/.

HRH Prince Charles. A speech by HRH The Prince of Wales to introduce An Inconvenient Truth, a film by former Vice-President Al Gore, to a climate change seminar of business leaders in Woking. 23 Mar. 2007, www.royal.uk/clarencehouse/speech/speech-hrh-prince-wales-introduce-inconvenient-truth-film-former-vice-president-al-gore/.

HRH Prince Charles. A message (by video) from HRH The Prince of Wales to accept the British Environment and Media Award for raising awareness of climate change. 22 Mar. 2006, www.royal.uk/clarencehouse/speech/message-video-hrh-prince-wales-accept-british-environment-and-media-award-raising-awareness/.

HRH Prince Charles. A message (by video) from HRH The Prince of Wales to the DEFRA Conference “Climate Change: The Business Forecast.” 6 Oct. 2005, www.royal.uk/clarencehouse/speech/message-video-hrh-prince-wales-defra-conference-climate-change-business-forecast/.

REFERENCES

- Anderson, Alison. “Sources, Media, and Modes of Climate Change Communication: The Role of Celebrities.” *Wiley Interdisciplinary Reviews: Climate Change*, vol. 2, no. 4, 2011, pp. 535–46, doi: 10.1002/wcc.119.
- Andersen, Gisle, et al. “People’s Conceptions and Valuations of Nature in the Context of Climate Change.” *Environmental Values*, vol. 31, no. 4, 2022, pp. 397–420, doi: 10.3197/096327121X16328186623850.
- Anthony, Laurence. “AntConc Version 4.0.11.” Tokyo: Waseda U, 2022.
- Bailey, Adriana et al. “How Grammatical Choice Shapes Media Representations of Climate (un)Certainty.” *Environmental Communication*, vol. 8, no. 2, 2014, pp. 197–215, doi: 10.1177/0963662515579626.
- Boas, Ingrid. *Climate Migration and Security: Securitisation as a Strategy in Climate Change Politics*. Routledge, 2015.
- Boicu, Ruxandra. “Modal Verbs and Politeness Strategies in Political Discourse.” *Limbi si Literaturi Straine*, vol. 1, 2008, pp. 15–28.
- Capstick, Stuart Bryce et al. “Stability and Change in British Public Discourses about Climate Change between 1997 and 2010.” *Environmental Values*, vol. 24, no. 6, 2015, pp. 725–53, doi: 10.3197/096327115X14420732702617.
- Carvalho, Anabela. “Media (ted) Discourses and Climate Change: A Focus on Political Subjectivity and (dis)Engagement.” *Wiley Interdisciplinary Reviews: Climate Change*, vol. 1, no. 2, 2010, pp. 172–79, doi:10.1002/wcc.13.
- Cass, Loren R. “Measuring the Domestic Salience of International Environmental Norms: Climate Change Norms in American, German and British Climate Policy Debates.” *The Social Construction of Climate Change*, edited by Mary Pettenger, Routledge, 2016, pp. 47–74.

- Cheng, Maria. "The Use of Modal Verbs in Political Debates." *The Routledge Handbook of Chinese Discourse Analysis*, edited by Chris Shei, Routledge, 2019, pp. 175–87.
- Coates, Jennifer. "Epistemic Modality and Spoken Discourse." *Transactions of the Philological Society*, vol. 85, no.1, 1987, pp. 110–31.
- Coates, Jennifer. *The Semantics of the Modal Auxiliaries*, Croom Helm, 1983.
- Detraz, Nicole, and Michele M. Betsill. "Climate Change and Environmental Security: For Whom the Discourse Shifts." *International Studies Perspectives*, vol. 10, no. 3, 2009, pp. 303–20, doi: 10.1111/j.1528-3585.2009.00378.x.
- Fairclough, Norman. "Critical Discourse Analysis and the Marketisation of Public Discourse at the Universities." *Critical Discourse Analysis*, edited by Norman Fairclough, Routledge, 2013, pp. 91–125.
- Fløttum, Kjersti. "A Linguistic and Discursive View on Climate Change Discourse." *ASp. la revue du GERAS*, vol. 58, 2010, pp. 19–37.
- Fløttum, Kjersti. "Linguistic Mediation of Climate Change discourse." *ASp. La Revue du GERAS*, vol. 65, 2014, pp. 7–20, doi: 10.4000/asp.1793.
- Fløttum, Kjersti, and Trine Dahl. "Different Contexts, Different 'Stories'? A Linguistic Comparison of Two Development Reports on Climate Change." *Language & Communication*, vol. 32, no. 1, 2012, pp. 14–23, doi:10.1016/j.langcom.2011.11.002.
- Gisborne, Nikolas. "Dynamic Modality." *SKASE Journal of Theoretical Linguistics*, vol. 4, no. 2, 2007, pp. 44–61.
- Huddleston, Rodney, and Pullum, Geoffrey. *The Cambridge Grammar of English*. Cambridge UP, 2002.

- Hyland, Ken. "Hedging in Academic Writing and EAF Textbooks." *English for Specific Purposes*, vol. 13, no. 3, 1994, pp. 239–56, doi: 10.1016/0889-4906(94)90004-3.
- Hyryn, Oleh. "Lexical and Grammatical Hedging as the Means of Author's Modality." *Messenger of Zhytomyr Ivan Franco University. Philology*, vol. 93, 2020, pp. 96–103.
- IBM. "IBM SPSS Statistics for Windows, Version 20.0." New York: IBM, 2011.
- Jaspal, Rusi, and Brigitte Nerlich. "When Climate Science Became Climate Politics: British Media Representations of Climate Change in 1988." *Public Understanding of Science*, vol. 23, no. 2, 2014, pp. 122–41, doi:10.1177/0963662512440219.
- Juliansyah, Edfan et al. "Modal Verbs in the UN Secretary-General's Remarks on Climate change." *Jurnal Ilmiah Languae and Parole*, vol. 3, no. 2, 2020, pp. 1–8, doi: 10.36057/jilp.v3i2.398.
- Kapranov, Oleksandr. "Between a Burden and Green Technology: Rishi Sunak's Framing of Climate Change Discourse on Facebook and X (Twitter)." *Information & Media*, vol. 99, 2024, pp. 85–105.
- Kapranov, Oleksandr. "Modality in Sustainability Discourse by Harrods and Liberty: Analysing British Cultural Icons' Discursive Practices." *Cultural Perspectives—Journal for Literary and British Cultural Studies in Romania*, vol. 28, 2023, pp. 85–116.
- Kapranov, Oleksandr. "Modal Verbs in Research Article Abstracts in Applied Linguistics: Juxtaposing Discursive Practices of the Inner and Outer Circles of English." *East-West Cultural Passage*, vol. 22, no. 2, 2022, pp. 6–34.
- Kapranov, Oleksandr. "The Discourse of Sustainability in English Language Teaching (ELT) at the University of Oxford: Analyzing Discursive Representations." *Journal of Teacher Education for Sustainability*, vol. 24, no. 1, 2022, pp. 35–48, doi: 10.2478/jtes-2022-0004.

- Kapranov, Oleksandr. “The Framing of Climate-Change Discourse by Shell and the Framing of Shell’s Climate Change-Related Activities by the *Economist* and the *Financial Times*.” *Bergen Language and Linguistics Studies*, vol. 7, 2017, pp. 55–69, doi: 10.15845/bells.v7i0.1088.
- Kiefer, Ferenc. “On Defining Modality.” *Folia Linguistica*, vol. 21, no.1, 1987, pp. 67–94.
- Levine, Lauren. “The Distribution of Deontic Modals in Jane Austen’s Mature Novels.” *Proceedings of the 6th Joint SIGHUM Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature*, 2022, aclanthology.org/2022.latechclfl-1.9/.
- Lillian, Donna. “Modality, Persuasion and Manipulation in Canadian Conservative Discourse.” *Critical Approaches to Discourse Analysis across Disciplines*, vol. 2, no. 1, 2008, pp. 1–16.
- Lyons, John. *Semantics*. Cambridge UP, 1977.
- MacGregor, Sherilyn. “A Stranger Silence Still: The Need for Feminist Social Research on Climate Change.” *The Sociological Review*, vol. 57, no. 2, 2009, pp. 124–40, doi: 10.1111/j.1467-954X.2010.01889.x.
- Malik, Muhammad Zeeshan Akram et al. “Critical Discourse Analysis of Imran Khan’s Address in the 76th Session of the UNGA with Ecolinguistic Perspective.” *Pakistan Journal of Social Sciences*, vol. 42, no. 1, 2022, pp. 13–21.
- Müller, Marcus, and Jörn Stegmeier. “Investigating Risk, Uncertainty and Normativity within the Framework of Digital Discourse Analysis: Renewable Energies in Climate Change Discourse.” *Researching Risk and Uncertainty: Methodologies, Methods and Research Strategies*, edited by Anna Olofsson and Jens O. Zinn, Springer, 2019, pp. 309–35, doi: 10.1007/978-3-319-95852-1_13.

- Narrog, Heiko. *Modality, Subjectivity, and Semantic Change: A Cross-Linguistic Perspective*. Oxford UP, 2012.
- Nartey, Mark, and Ferguson Ebo Yankson. "A Semantic Investigation into the Use of Modal Auxiliary Verbs in the Manifesto of a Ghanaian Political Party." *International Journal of Humanities and Social Science*, vol. 4, no. 3, 2014, pp. 21–30.
- Nerlich, Brigitte. "'Low Carbon' Metals, Markets and Metaphors: The Creation of Economic Expectations about Climate Change Mitigation." *Climatic Change*, vol. 110, no. 1, 2012, pp. 31–51, doi: 10.1007/s10584-011-0055-3.
- Nuyts, Jan. "Modality: Overview and Linguistic Issues." *The Expression of Modality*, edited by William Frawley, Mouton, 2006, pp. 1–26.
- O'Neill, Saffron J. et al. "On the Use of Imagery for Climate Change Engagement." *Global Environmental Change*, vol. 23, no. 2, 2013, pp. 413–21, doi: 10.1016/j.gloenvcha.2012.11.006.
- Palmer, Frank Robert. *Modality and the English Modals*. Longman, 1990.
- Payne, Thomas E. *Understanding English Grammar*. Cambridge UP, 2011.
- Peters, Katie. "Disasters, Climate Change, and Securitisation: The United Nations Security Council and the United Kingdom's Security Policy." *Disasters*, vol. 42, 2018, pp. 196–214, doi: 10.1111/disa.12307.
- Poole, Robert, and Nicholas Hayes. "Stance in Climate Science: A Diachronic Analysis of Epistemic Stance Features in IPCC Physical Science Reports." *Journal of Corpora and Discourse Studies*, vol. 5, 2022, pp. 37–60, doi: 10.18573/jcads.100.
- Portner, Paul. *Modality*. OUP, 2009.
- Rizvić-Eminović, Edina, and Đelaludina Šukalić. "An Overview of Studies on Modal Verbs across Written and Spoken Genres." *Beyond*

Hermeneutics: Challenging Traditional Approaches to Literary and Linguistic Studies, edited by Petar Penda, Željka Babić, and Tatjana Bijelić, Banja Luka University, 2020, pp. 201–16.

Rogers-Hayden, Tee et al. “‘Energy Security’ and ‘Climate Change’: Constructing UK Energy Discursive Realities.” *Global Environmental Change*, vol. 21, no. 1, 2011, pp. 134–42.

Svenonius, Peter. “Syntactic Constructions.” *Syntax-Theory and Analysis: An International Handbook*, edited by Tibor Kiss and Artemis Alexiadou, Mouton de Gruyter, 2015, pp. 15–23, doi: 10.1515/9783110377408.15

Szczygłowska, Tatiana. “The Lexico-phraseological Profile of Professional Film Reviews Published by the British Media: A Corpus-linguistic Study.” *Crossroads. A Journal of English Studies*, vol. 3, no. 38, 2022, pp. 18–40, doi: 10.15290/cr.2022.38.3.02.

Wildman, Nathan. “Against the Reduction of Modality to Essence.” *Synthese*, vol. 198, no. 6, 2021, pp. 1455–71, doi: 10.1007/s11229-017-1667-6