11. Shifting Temporal Perspectives in Eco-Linguistics: A Comparative Study of Future Representations in Climate Change Discourse at the United Nations Climate Change Conferences

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Abstract

The climate crisis is one of the most pressing issues of our time, and communication around it has evolved into a "booming industry" over recent decades (Nerlich et al., "Theory and Language" 97). Language, in particular, influences how individuals perceive and respond to environmental challenges. Specific linguistic constructions – such as temporal framing – shape perceptions of urgency, responsibility, and impact, particularly as they relate to the climate crisis (see Weinrich). Thus, this chapter explores the complex relationship between climate change communication, language, and temporal perspectives, focusing on representations of the concept of futurity in media coverage surrounding the 2022 United Nations Climate Change Conference (COP27) and the 2023 United Nations Climate Change Conference (COP28). Through an analysis of English-language media outlets across diverse regions, this study seeks to uncover patterns in how language, particularly with respect to futurity, may shape public perceptions of the ongoing climate crisis. Despite its relevance, the topic of how the climate crisis is represented has only recently attracted attention within ecolinguistic research, a field traditionally centered on human-nature relationships within language (Fill and Penz). Therefore, this chapter aims to bridge that gap by examining the role of future-oriented discourse in climate communication. By investigating how temporal language is used to frame climate issues in media, this study contributes to a deeper understanding of how ecological and linguistic perspectives intersect. This analysis is crucial not only for advancing climate change communication within ecolinguistics but also for enhancing public understanding of environmental issues. By examining how language frames climate discourse, this interdisciplinary approach demonstrates how strategic linguistic choices in media can encourage a more informed and proactive public response to the climate crisis.

Keywords

Ecolinguistics, climate change communication, temporal framing, futurity, ecological discourse analysis

Introduction

In recent decades, there has been a notable increase in the study of climate change communication and its impact on public opinion. This rise reflects the heightened recognition of climate change as one of the most pressing issues of our time, leading to the transformation of climate change communication into a widely acknowledged and "booming industry" (Nerlich et al., "Theory and Language" 97). Despite this increased attention, the persistence of global carbon emissions, deforestation, and other climate-worsening industrial processes continues to leave society at an ongoing risk. Effective communication about these issues is important, as language in particular plays a vital role in shaping individuals' perceptions and reactions to environmental issues. The way the climate crisis is discussed can either motivate action or foster apathy, making it crucial to evaluate not only the effectiveness of current communication tools but also the audience's capacity to instigate changes in response to the reported news on the climate crisis (97). Moreover, linguistic constructs, such as temporalities, can significantly influence the perception of certain issues, as ecological concerns are intricately linked to temporal dimensions (see Weinrich). According to Bjærke et al. (179), it highly matters to consider and know about climate change temporalities as the phenomenon is conceptualized through images and especially texts. Within these texts, temporalities, such as the future tense, are one of the factors that structure the relationship between the concept of climate change and its conceptualizations.

Thus, this chapter explores the intricate relationship between climate change communication, language, and temporalities, focusing on different perspectives and representations of futurity in contexts surrounding the United Nations Climate Change Conferences in 2022 (COP27) and the United Nations Climate Change Conferences in 2023 (COP28). By analyzing media outlets in English-speaking nations, this study seeks to discern patterns in how language, particularly constructions representing futurity, might influence perceptions of the ongoing climate crisis.

How to Talk about the Climate Crisis: The Influence of Language and News

Despite substantial efforts to reduce greenhouse gas emissions, many climate change impacts are now considered to be ultimately inevitable, which is why the communication about the crisis, mostly analyzed within ecolinguistics, has changed from "persuading people that climate change is happening to persuade people to adopt practical measures to deal with it" (Nerlich et al., "Theory and Language" 98). However, for many, the effectiveness of discourse on climate change is questionable, particularly because the perceived risk on a larger scale is often considered more a virtual than a real issue. This perception is heavily influenced by individual considerations and how much attention one can afford to give to the issue. Hence, if

there is a general lack of awareness about the issue, comprehending discourse on these matters could prove to be particularly challenging. Nevertheless, according to Nerlich et al. (98), communication on climate change goes beyond the effort of trying to raise awareness. Hulme even suggests that "we need to use the idea of Climate Change—the matrix of power relationships, social meaning and cultural discourses that it reveals and spawns to rethink how we take forward our political, social and economic projects over the decades to come" (Hulme qtd. in Nerlich et al., "Theory and Language" 98). This approach encourages a reevaluation of current climate discourses with the use of linguistic tools in order to advance taking action against the climate crisis. Comparing it to several other communication enterprises such as health communication or risk communication, Nerlich et al. consider climate change communication to be very complex (98). This complexity arises from the inherently complicated nature of the climate change issue itself, as well as the challenges associated with communicating about it.

Therefore, language constitutes a major factor that has developed in relation to climate change (104). In general, linguistic repertoires can serve as significant indicators of how individuals think and converse about climate change (see Ereaut and Segnit). People form their opinions and conclusions about the necessity for behavioral changes regarding climate change through these repertoires, which are influenced by various sources, including politicians, journalists, popular culture, media, and everyday discourse (Nerlich et al., "Theory and Language" 102). In many cases, communicators of all kinds are encouraged "to adapt their language to suit the tastes, meanings, and concerns of ordinary people" (103).

In addition to the applied language, it is imperative to consider the influence of media news outlets in the context of this discussion since beyond the scope of media coverage, scholarly investigations and research concerning the portrayal of the climate crisis in the media have witnessed a significant and sustained increase over the past two decades (44). In fact, climate change has stood out as one of the most contentious topics in politics, scientific research, and public discourse (see Carvalho and Burges). Generally, it is of great importance to research media coverage in relation to the climate crisis, given that the majority of individuals gain awareness of these issues primarily through the media. This reliance on media is driven by the inherently complex nature of the information involved (Nerlich et al., "Climate in the News" 45).

According to Fill and Penz, media representations therefore play a pivotal role in shaping the communication of climate change (227). Carvalho and Burgess agree that news media play a crucial role in popularizing science-related matters and risks such as the climate crisis (1458). This is because individuals' awareness, attitudes, and especially their actions towards the ongoing environmental crisis are claimed to be shaped by diverse mediated information. The communication of various

ideologies and perspectives through media coverage has a noteworthy impact on people's viewpoints and their engagement in political actions, hence, this influence should not be underestimated. Thus, the framing of climate change issues holds significant importance in how the problem is conveyed and formulated; for instance, there is a notable emphasis on dramatic and sensationalized events rather than the prioritization of forecasting or planning. This understanding arises from the recognition that environmental disasters tend to align more closely with news values being newsworthy when compared to other aspects of reporting on environmental-related matters. This can be attributed to the development of preferring particularizations and sensational stories within climate change discourse rather than focusing on statistics and scientific planning (Carvalho and Burgess 190).

Generally, media portrayals of environmental issues or other topics do usually not only present facts but also reflect and navigate power dynamics. These portrayals are often instrumental in shaping knowledge and conversations among individuals and within communities (Boykoff 549). Therefore, media outlets have a significant impact on agenda-setting, as the importance assigned to an issue often hinges on its media coverage. For instance, the media can direct public attention to subjects like climate change. In fact, it has the ability to shape people's attitudes towards certain matters, including the climate crisis. In the context of scientific knowledge, the media serves as a crucial midway in translating research findings for the general public. For instance, the phenomenon of a changing climate may not be fully evident in individuals' day-to-day lives, especially if they do not live in territories that are directly affected by the climate crisis. Thus, through the media, a connection between one's own existence and the global climate crisis can be established, which would not be likely without such portrayals (Dirikx and Gelders 98).

Expressions of Time within Environmental Discourse

To underscore the connection to the concept of time, it is crucial to acknowledge that environmental discourse, as emphasized by Harré et al. (120), frequently exhibits an inherent link to discussions about time. Generally, this relationship has to be recognized since "[to talk] about the environment is to talk in temporal terms" (120). In fact, it is argued that talking about instances of nature always requires certain assumptions about certain temporal orders. As articulated by Mühlhäusler, "paying attention to temporality can help increase the efficacy of ecolinguistics" since the integration of temporal perspectives emerges as a pivotal element in enhancing the field (4). This temporal consciousness aligns with Fill's argument that ecological thinking acknowledges the significance of small-scale elements alongside the larger context by stating that "thinking ecologically always means considering the small as important as the large" (Fill 8; my translation). Therefore, upon a close examination of climate change discourse, it becomes evident that effective communication efforts

undertaken by policymakers, politicians, scientists, and environmental organizations should incorporate not only spatial dimensions but temporal scales as well.

Generally, the conceptualization of narratives related to the environment is necessary in order to create an effective approach in addressing climate-related challenges (Bjærke et al. 6). For instance, when analyzing discourse about the climate crisis, not only the interplay between present-day actions and consequences in the future have to be considered but also prospects of the future as well as, for example, comparisons of temperatures over different time frames (Harré et al. 3). Bjærke et al. take it one step further by arguing that for the understanding of the climate crisis and the development of solutions it is always necessary to understand the different concepts concerning timescales and temporalities that are involved (3-4). Furthermore, Bopp and Bercht highlight the qualitative understanding of time and climate change, thus offering a chance to relate better to the concept of time within the climate crisis while considering different climate justice debates. Considering time as an essential concept as "we all exist in time" (Bopp and Bercht 29), they do not only highlight the fact that without time, there would neither be orientation, causality, meaning-making nor memory but also that there would be no climate change (29). Their main idea that certain time lenses can make things visible that might otherwise be unresolved or unexplored needs to be considered when investigating discourse about the UN Climate Change Conferences since the impacts of climate change usually depend on people's exposure to "climate change in time and space" (30).

Environmental Futurity

Compared to other political movements, the relationship to futurity is perceived differently by, for instance, environmentalists because "it is engaged with safeguarding the future of the future in presenting ecological viability as the foundation for all human and more-than-human worlds" (O'Brien and Lousley 1). To delve into the concept of futurity, three key ideas will be examined: future tense marking, temporal discounting, and temporal displacement.

By combining linguistic structures and the analysis of the determinants of environmental actions and policies, Mavisakalyan et al. conducted research on future tense markers in connection with climate change. By using data from individual speakers of languages with obligatory future marking and languages that do not grammatically differentiate between the present and future tense, they tried to prove that environmental behaviors toward climate change vary due to those factors. Chen highlights that the use of the future tense can significantly influence how speakers perceive and respond to various elements, such as a piece of text (690). There are vital differences depending on whether a language requires speakers to grammatically mark future events or not. Chen's study suggests that not only the perception of

futurity within environmental discourse, but also environmental behavior is influenced by these factors. Moreover, Mavisakalyan et al. suggest that future tense marking is a crucial determinant of climate change policies as well as individual perceptions and behaviors towards climate change. Their frame of orientation concerns the presence of future tense marking in language as a new source that might explain, among other things, environmental perception and behavior. While environmental perception refers to how individuals view environmental issues such as their sense of responsibility and urgency, environmental behavior refers to actions individuals take to protect or harm the environment.

Moreover, according to Goldstein, there is a general public struggle with the concept of temporal distance since "lay understanding of climate change and global warming is challenged by complicated cause-and-effect relationships in which long-term climate patterns are harder to perceive than short-term localised weather" (Goldstein qtd. in Bjærke et al. 18). Often, global warming is understood as a concept that replaces the temporal distance with the immediacy of the everyday since several surveys have argued that the lay understanding of the climate crisis is limited due to a lack of understanding that humans do have detrimental impact on the environment (18). Therefore, future instances are often discredited. The concept of temporal discounting is reflected in the many different ways of talking about the future within climate change discourse. Hanson-Easey et al. suggest that scientific narratives on climate change typically span from decades to centuries, however, individuals mostly base their behavior and make decisions on shorter time frames (228). Oftentimes, inevitable future events are discredited since the expansion of time frames shifts the understanding of immediacy. For instance, after conducting several interviews with laypeople, Hanson-Easey et al. conclude that people are irritated when the media refer to time frames far in the future such as "2050" since several argue that "I am going to be dead by then [...], 2050 is a long way away and I will see about it [...] in 2045" (228). Thus, their findings suggest that a considerable number of people do not have major concerns regarding the temporal horizon in 40, 50 or 100 years into the future. This attitude is attributed to the perception of climate change as a temporally distant phenomenon, which is consequently seen as removed from their immediate personal lives. According to Harré et al., only a small minority of people inherently understand the major consequences of climate events in the distant future while a large proportion of the world's population cannot think ahead for more than a few days. Therefore, climate change can be considered as a crisis that is lacking "the immediacy of now" (see Stern). Described as "slow violence" by Nixon (2), climate change occurs gradually and is perceived as a "violence of delayed destruction that is dispersed across time" (2). Moreover, it is often understood as irrelevant as it is very hard to see the immediacy of a construct that oftentimes remains mysterious.

Besides temporal discounting, temporal displacement must be taken into account when considering the reasons for why a grammatical form can change a speaker's perception of time. Temporal displacement describes the idea of using "a dedicated grammatical form to talk about future events subjectively [which] projects these events further away from the speaker's now – they appear temporally more distant to the agent" (Mavisakalyan et al. 5). Thus, on the one hand, by using a separate grammatical form, the future is represented as discontinuous with the present. On the other hand, when one speaks about the future in the present tense, it is depicted as more continuous with the present (5).

Ecological Discourse Analysis at the UN Climate Change Conferences

The empirical part of this study explores different representations of the future in the context surrounding the United Nations Climate Change Conferences in 2022 and 2023. The aim of this analysis is to analyze the three media outlets *The Guardian, The Independent*, and *The New York Times* in English-speaking nations to detect patterns in how language, particularly references to the future, are articulated and may influence perceptions of the ongoing climate crisis. The ultimate goal is to provide a cohesive examination of the interplay between language, temporalities, and climate change discourse. By employing Ecological Discourse Analysis, which is defined as the examination of diverse discourses within an ecological framework and is not limited to the analysis of discourse solely related to the environment, I will raise questions about several chosen texts of discourse by focusing on diverse representations of the future.

The corpus was chosen from a range of broadsheet newspapers produced in English. The selection process of specific articles was conducted according to most popular search-outcomes on the search engine www.ecosia.org, pregiven the fact that they must be English broadsheet articles produced within the time frames of the 2022 and 2023 United Nations Climate Change Conferences. The final corpus was chosen according to the following search keywords: *COP27, COP28, COP27 news, COP28 news, UN Climate Change Conference 2022, UN Climate Change Conference 2023* and *UN Climate Change Conference news*. All in all, a total of 80 articles were selected, 40 produced within the time frame of COP27 (the 2022 conference) and 40 within the time frame of COP28 (the 2023 conference). Since representations of the future only occur individually in the mentioned newspaper articles, having a diverse collection of newspaper articles was essential to obtaining a comprehensive overview and identifying discernible patterns.

Generally, there are several reasons why the analyzed articles were chosen from the time frames during COP27 and COP28. Firstly, the temporal relevance of the two conferences ensures discourse about future actions and policies that temporally align with the global discussion about issues related to the climate crisis. The

specific context of the conferences provides media coverage that specifically focuses on the future of the climate crisis, since negotiations concerning the future of the participating countries are being held. Moreover, the Climate Change Conferences are one of the most significant events concerning climate change, which is why a lot of media coverage is produced during these time frames as well as high points of general media coverage can be detected while climate change conferences such as the United Nations Climate Change Conferences are happening.

Findings

Temporal Dimensions: Instances of *Future*

Before delving into the grammatical analysis of representations of the future within this small, heterogenous corpus, I generated a visualization that is proposed on the basis of the context of the word *future*, thus investigating the immediate surroundings of the word. While the primary focus of this chapter revolves around qualitative research methods, specific aspects, such as the frequency of the word *future*, are portrayed quantitatively. The quantitative analysis, as depicted in *Table 1*, was conducted using the MAXQDA software. This approach aims to enhance the overall comprehension of relations to the future and provide a more thorough overview of the analyzed articles before investigating the meanings behind these portrayals.

Frame	Context	Keyword	Context
COP 27	their promises to safeguard a *livable*	**future**	." John Kerry, Joe Biden's climate
COP 27	a tolerable existence and an *impossible*	**future**	."
COP 27	is needed to stop a *perilous*	**future**	becoming a cataclysmic one. Bill McGuire
COP 27	will be needed in the *near*	**future**	.
COP 27	any measure, that represents a *bleak*	**future**	for humanity. Agreements on loss and
COP 27	for developing countries, a *clean energy*	**future**	is a distant dream.
COP 28	touch 1.5C in the *near*	**future**	. But a single year is not
COP 28	the global economy for a *hotter*	**future**	. Climate Forward There's an ongoing
COP 28	off track" in delivering a *sustainable*	**future**	for the climate. Charles said the
COP 28	we work towards a *zero-carbon*	**future**	, we must work equally towards being
COP 28	to expand production for the *foreseeable*	**future**	. The Alliance of
COP 28	latest. The alternative is an *unmanageable*	**future**	for humanity." Dr Friederike Otto, of

Table 1: Sorted concordance with the pattern 'a/an/the ADJECTIVE future'

Table 1 shows a concordance which reveals the pattern *a/an/the ADJECTIVE future*, to envision certain properties that are attributed to the word *future*. When considering the question of how the future is represented within these articles, it appears relevant to investigate certain properties and meanings that are conveyed by diverse representations. While both sets of articles show the exact same number of adjectives followed by the word *future*, three different adjective categories included in both sets could be developed, namely *sustainable adjectives*, *negative adjectives* and *temporal adjectives*. While phrases such as *clean energy future*, *sustainable future* and *zero-carbon future* find their place under the umbrella term *sustainable adjectives*, *impossible future, perilous future* or *bleak future*, for example, are categorized as pessimistic representations of the future within the category of value-laden *negative adjectives*. Conversely, only a minority of adjective phrases fall into the temporal category, for instance, *near future* or *foreseeable future*.

In relation to temporal adjectives, the portrayed future within the analyzed corpus is often characterized by time-related phrases, such as a close, distant, long-term, or short-term future. Interestingly, within this concordance, more evidence for short-term patterns such as *near* and *foreseeable* have been detected in comparison to long-term patterns, which are not present within the chosen articles, thus highlighting the immediacy of the climate crisis. The concept of the near future in connection to the noun future is used in the context of concerns as well as unfavorable consequences of the climate crisis.

Quantitative Time Expressions

In line with the above-mentioned distinctions regarding close, distant, long-term, and short-term representations of future instances, an examination of future calendar years in newspaper articles on both United Nations Climate Change Conferences (COP27 and COP28) reveals a correlation with the aforementioned patterns. By categorizing these years based on their proximity to the present, one can distinguish between near-term future calendar years, which span from the current year to 2040, a mid-term reference period, which involves the years 2041–2060, as well as a long-term reference period, which spans from 2061–2100. With 113 instances of future calendar years mentioned, the corpus of texts includes several references to future years including 2025, 2030, 2035, 2050, 2060 as well as few mentions of the year 2100. While several targets and commitments are associated with the mentioned future years, a prevalence of plans and expectations linked to these time frames is evident as well. In fact, the focus clearly lies on events and targets connected to near-term reference periods. Interestingly, articles covering COP27 prominently feature mentions of the year 2025, while articles on COP28 shift their focus to the year 2030.

The articles from COP27 predominantly highlight the year 2025 as the dominant year for achieving a peak of global emissions, as can be seen in examples (1) and (2).

> (1) Global emissions to peak by 2025, in line with the goal of limiting temperature rises to 1.5C above pre-industrial levels. (*The Guardian,* "Brink of Climate Catastrophe" 2022)
>
> (2) Emissions peaking before 2025, as the science tells us is necessary. (*The Guardian,* "Brink of Climate Catastrophe" 2022)

In contrast, articles released one year later, produced during COP28, show a certain shift in perspective when considering the referenced time periods. For instance, excerpts such as the following were prevalent,

> (3) A resolution to cause emissions to peak by 2025 was taken out, to the dismay of many. (*The Guardian,* "Small Step" 2023)

These statements highlight the shifting priorities and reevaluations of targets within the climate negotiation processes. While in 2022 the goal of a possible decline in greenhouse gas emissions after 2025 was still considered realistic, certain articles released in 2023 indicate a shift in focus as the narrative oftentimes is extended to the year 2030. To the readers, the concept of temporal discounting is evident as the immediacy of the achieving of certain goals by 2025 is extended to a time frame further away, namely 2030. Since laypeople mostly deal better with more immediate timescales, the target of 2030 might still be too far away for them to recognize the connection to their immediate personal lives (Nerlich et al., "Theory and Language" 99). Narratives about the climate crisis are often based on timespans from decades to centuries. However, most people usually think within more immediate timescales (see Hanson-Easey et al.), thus regarding dispersed future time frames as mysterious. Also, they often find it difficult to recognize the immediacy of the issue, a challenge that can be attributed to concepts like temporal discounting and temporal displacement. These concepts must always be considered when examining why linguistic forms can influence a speaker's perception of time.

Notably, articles from the earlier year show references that are closer to their year of publication, whereas articles from 2023 predominantly focus on the year 2030, a period which is seven years distant from the readers' current experience of these news about the climate crisis. Consequently, one can assume that many of the significant consequences projected to occur by 2030 may not be inherently comprehensible to the readership due to the considerable distance in time from the present, despite this time frame being one of the earlier references included in the articles.

Additionally, references to temporal horizons between 25 and 75 years into the future are only mentioned sporadically, presumably considering the concept of "slow violence" (Nixon 2) by the articles' authors. Solely two instances of 2060 and two instances of 2100 could be detected, which suggests the continuation of present

actions, making it more probable for the described outcomes, such as the overshooting of the global carbon budget by food production, to occur. To demonstrate,

> (4) By 2100 food production will, on its current trajectory, bust the global carbon budget two or three times over. (*The Guardian,* "Anti-Livestock" 2022)

To conclude, the examination of future calendar years within articles produced during COP27 and COP28 highlights a shifting narrative towards mid-term and long-term climate goals.

Future Tense Markers

In previous research, future tense marking in language has been considered detrimental in defining responses on environmental issues in climate change discourse. In the media coverage analyzed in this study, a clear prevalence of one grammatical future tense marker is visible. With a total of 382 instances of the grammatical future tense marker *will* and merely 23 instances of the grammatical future tense marker construction *is/are/adverb going to*, it becomes evident that environmental topics coincide with uncertainty, considering that *going to* usually expresses more certain events compared to *will*. However, in many analyzed examples, the grammatical future tense marker *will* is also used to convey a sense of inevitability regarding the consequences of environmental actions. This highlights that *will* does not solely function to express uncertainty or possibilities about future events. Instead, it has also been employed assertively to signal clear expectations or predictions about outcomes in the future. Recognizing this dual function is important, as it shapes how speakers frame environmental issues.

Thus, it is crucial to consider that the use of the grammatical future tense marker *will* cannot solely be used to express uncertainty and possible future events, but in certain cases also assertively express expectations about outcomes in the future.

For instance, example (5) highlights the emphasis on a deal regarding certain stakeholders by assertively stating its anticipated impact using the future tense marker *will*, which conveys a sense of inevitability. However, this example could also imply a discounting of future costs, as the timing of its impact on the real world may not be easily graspable, leaving readers uncertain due to the concept of temporal distance. In contrast, example (6) describes the potential disappearing of the rainforest. Stating that the world needs to act by reducing CO_2 emissions, the use of future tense marking in the second part of the phrase enhances the idea of immediate action since the consequence is clear: if temperatures rise, the Amazon will disappear. Despite this long-term climate pattern, the clear cause-and-effect relationship makes the concept graspable more easily.

(5) The deal will have an impact on the real world, in the decisions made by investors, banks, financial institutions, by governments and by private companies. (*The Guardian,* "Elephant in the Room" 2023)

(6) But the world needs to do its part to reduce CO_2 emissions, because if not, even if we stop deforestation, the Amazon will disappear if the temperature rises. (*The Guardian,* "Lose 1.5C" 2022)

Finally, the chosen examples of future tense markers within the discourse produced during COP27 and COP28 show that the applied grammatical future tense markers might indeed influence how readers perceive certain issues that are included. The predominant use of the future tense marker *will* in several cases highlights a certain sense of temporal distance because the future tense marker, besides conveying a sense of inevitability, can also introduce temporal distance, which influences how readers perceive the urgency of an issue. This temporal distance arises because *will* positions events in the future generally, making them oftentimes feel detached from the present moment.

Modality in Temporal Contexts

As can be seen from the most frequently used modal verbs (excluding *will*) in *Table 2*, the articles in reference to COP27 show a higher frequency of modal verbs than the articles in reference to COP28. While *would* is the most frequently used one with 172 instances in 80 articles, *might* can only be found fourteen times. Despite acknowledging that these verbs also serve functions beyond indicating modality in the newspaper articles in this corpus, a frequent use of modal verbs such as *would* can simply suggest a polite tone in the way it is frequently implemented in broadsheet newspapers.

A further interesting finding regarding modal verbs is the correlation with the topic of fossil fuels, ranging from a weaker expression of obligation using the modal verb *should* to a stronger assertion of obligation with *must*. With *should* often expressing the deduction that something is probable now or in the future, this case (7) implies advisability that winding down the burning of fossil fuels is necessary to avoid terrible consequences. Example (8) proposes a certain level of necessity by implementing need, however, it is not as strong as the subsequent modal *must*. Moreover, the use of *must* in example (8) reinforces a certain sense of obligation as well. Nevertheless, one has to note that *should* is often used as a weaker form of *must*, since sentences including *must* convey the idea of being absolutely necessary while sentences including *should* often only suggest a good idea. Generally, the continued reliance on fossil fuels, its consequences and calls of mitigations are particularly evident in articles produced during COP28, most likely due to the initiated global stock take.

(7) That the burning of fossil fuels like coal, oil and gas should be wound down to avoid further catastrophic global warming. (*The New York Times,* "Two Words" 2023)

(8) For the first time, the outcome recognises the need to transition away from fossil fuels. […] The era of fossil fuels must end, and it must end with justice and equity. (*The Guardian,* "Elephant in the Room" 2023)

Furthermore, articles produced during COP28 underscore that numerous elements of the COP28 agreement were under debate. Several drafts only employ the modal verb *could* instead of specifying definitive actions when referring to the future of sustainable energy. In fact, the draft only states that countries *could* take action. Thus, a degree of ambiguity and lack of commitment are expressed by indicating that at present no specific actions have been settled, which is not only the case in the media produced about the agreement but especially in the agreement itself. With the agreement's language leaving room for countries to decide about the implementation of certain actions in the future, the negotiations are not definitive enough to foster immediate change. Thus, the effectiveness of the drafted document produced at COP28 is questioned due to the modal verbs used within the deal.

Modal Verbs	Frequency	Cop 27	Cop 28	Documents %
would	172	96	76	70.89
can	161	101	60	73.42
need	133	81	52	73.42
must	100	56	44	44.30
could	98	47	51	65.82
should	61	35	26	45.57
may	37	20	17	29.11
might	14	7	7	17.72

Table 2: Comparison of selected modal verb frequency in COP27 and COP28

Figurative Language

By exploring how futurity is portrayed in the newspaper articles investigated here, numerous metaphors were found that shape the way the future is expressed. The use of metaphors conveys a heightened sense of urgency regarding current global climate issues, possibly engaging the readership more effectively. Besides metaphors specifically referring to time, i.e. the present and the future, this analysis also includes metaphors that encompass broader concepts that contribute to the overall analysis.

An interesting metaphor that is well-known in ecolinguistics analyses was detected in an article published in *The Independent* during COP28, namely *running out of time*. Mühlhäusler suggests that when individuals say that they are running out of time, it suggests they have barely enough time to accomplish necessary tasks (5). Clarifying the original metaphor's reference to time measured by sand in an hourglass, it becomes apparent that time would physically run out from the top bulb into the bottom bulb of the hourglass (5). He adds that "a linear perception of time underlies

the view of accelerated decline and the associated perception that time to arrest it is running out" (5). Emphasizing that predications about the end of the world are deeply embedded in Western cultures, the thought of imminent climate catastrophes has a long history too. Thus, referring once again to the final document produced during COP28, it is stated that there is no time left since it is running out, as can be seen in example (9).

> (9) I think for the fossil fuel phase-out, what we're looking for is language that does exclude this term unabated. [..] There's no time left to mess around. We're running out of time. (*The Independent,* "Fairytale Solutions" 2023)

Another noteworthy metaphor used within an article produced during COP28 concerning the warming limit of the planet is the phrase *minutes to midnight*. Most likely referring to the Doomsday Clock, the metaphor highlights how near humanity is to self-destruction, driven by the threats of human-made technologies and the worsening climate crisis. According to Lerner, the Doomsday Clock warns how many metaphorical minutes to midnight humanity still has left. The clock is set every year by the Bulletin of the Atomic Scientists, who originally introduced it to represent the threat of a nuclear conflict – the potential use or exchange of nuclear weapons with devastating consequences for humanity. Today, it also refers to the climate crisis with its tipping points that one cannot come back from (Lerner n. pag.).

> (10) Earth's vital signs are failing [...] we are minutes to midnight for the 1.5C warming limit. [...] We can — you can — prevent planetary crash and burn. We have the technologies if we act now. (*The Independent,* "Hope of the World" 2023)

Overall, these examples of metaphors as linguistic devices are used to convey complex ideas in more accessible terms, shaping the way the public might perceive the context.

Conclusion

The overall objective of this article was to investigate the interplay between climate change communication, language, and time, focusing specifically on how futurity is represented in discourse surrounding the United Nations Climate Change Conferences in 2022 and 2023. It questions the efficiency of current communication tools, specifically the broadsheet newspapers in this study's corpus, and raises more general concerns about environmental discourse often being perceived as implausible, thus hindering action, particularly among readers who do not feel directly affected by certain climate issues.

Through the analysis of articles from three prominent media outlets, a small yet diverse corpus was established. This corpus reveals various patterns in the articulation of language, particularly in reference to the future. Firstly, the specific analysis of references to future calendar years in the articles reveals a shift in focus over time.

While COP27 articles center around achieving goals by 2025, COP28 articles increasingly discuss targets for 2030. This temporal shift indicates a progression towards longer-term climate objectives. While references to 2050 are also present, mentions of time frames beyond 2050 are less common, suggesting a focus on more immediate and mid-term climate goals. This evolving narrative underscores the importance of considering both short-term and long-term strategies in addressing the climate crisis. Moreover, temporal adjectives linked with the noun *future* portray the temporal concept as mostly proximate. In fact, short-term patterns like *near* and *foreseeable* are more prevalent while long-term patterns are mostly absent.

Also, the analysis of grammatical future tense markers within COP27 and COP28 articles underscores the markers' possible influence on readers' perceptions of environmental issues. With a clear prevalence of the grammatical future tense marker *will* over *going to*, the discourse surprisingly asserts expectations about future outcomes with a sense of inevitability.

Furthermore, the analysis of modal verbs reveals their significant role in conveying predictions, obligation, and possibilities regarding future actions related to climate change. Modal verbs such as *should, would,* and *need* are frequently used to suggest hypothetical scenarios and emphasize the necessity for recommended actions, particularly concerning annual future reference periods like 2025 and 2030. However, ambiguity is expressed in COP28 articles through modal verbs such as *could* in discussions about specific actions within the UN deal agreement, indicating ongoing negotiations and uncertainties. Overall, the strategic use of modal verbs shapes the discourse surrounding climate change by conveying varying levels of certainty and urgency regarding future actions.

In the examination of figurative language, an exploration of how futurity is depicted in these newspaper articles reveals numerous metaphors that portray the future in diverse ways. Phrases like *running out of time* and *minutes to midnight* underscore the urgency of action. Overall, these metaphors serve to simplify complex climate change concepts and engage readers emotionally towards addressing the future of the crisis.

To sum up, the main conclusion to be drawn from this study is the importance of futurity language in climate change communication, emphasizing its role in possibly shaping perceptions and influencing attitudes. Through the examination of representations of the future, this study contributes to a deeper understanding of how climate change discourse is depicted in public discourse, particularly during one of the most important conferences on the subject. Finally, since we are in the midst of confronting the challenges of the ongoing climate crisis, it is necessary to continue exploring linguistic strategies such as discourse surrounding the future that effectively convey the urgency of the situation.

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