



Article

The divergent discourses of activists and politicians in the climate change debate: An ecolinguistic corpus analysis

Clare Cunningham

York St John University, UK

E-mail: c.cunningham@yorks.ac.uk

Charlotte Foxcroft

York St John University, UK

E-mail: chfoxcroft@gmail.com

Helen Sauntson

York St John University, UK

E-mail: h.sauntson@yorks.ac.uk

Abstract

There is currently a scarcity of research comparing the linguistic features of discourses of climate activists and politicians about the climate emergency. Understanding how the discourses of these two groups of public figures either perpetuate or challenge hegemonic views about climate change is vitally important. For this study, two corpora were created, the Activist and the Politician, and the analysis adopted key tenets of corpus-assisted discourse studies (CADS) within a broader ecolinguistic approach. Findings indicate that Activist discourses are anthropocentric and focus predominantly on the negative effects of climate change which are attributed to human actors. The activists' discourse of climate change is inseparably embedded within discourses of ecological and social justice, and there is a semantic frame of immediacy and realness in relation to climate change which is, by contrast, notably absent in politicians' corpus. By contrast, the politicians' talk is characterised by dominant semantic frames of industry, finance, politics and economy. There is very little attribution of climate change to human actors — instead, the language works to devolve responsibility for climate change to non-human actors.

Keywords: corpus linguistics, corpus-assisted discourse analysis, ecolinguistics,

politicians, activists, discourse, climate change, climate emergency

1. Introduction

The climate emergency is arguably the biggest crisis humanity has ever faced (Cavicchioli et al., 2019). The International Panel on Climate Change (IPCC) (2022) states that the results of climate change will pose great risks for human and natural systems, on all continents, across all oceans. Fløttum (2017, p. 7) observes that “since climate change [...] cannot be seen, heard, or touched, it is in fact through language that we can acquire knowledge of and understand this complex phenomenon” and Fill (2001, p. 21) notes the “interdependence between discursive practices and ecological devastation”.

It is therefore crucial to explore key environmental discourses to reveal the variety of perceptions and to examine the progress in societal thinking about these impending challenges. The present study, therefore, seeks to contribute new linguistic analyses to the existing research in the field of climate discourse, by comparing the discourses of two key groups of social actors: climate activists and politicians. These groups are critical in the climate change discussion, with politicians being concerned with complex, multifaceted obstacles, characterised by short-term thinking tied to electoral success, whilst activists are constructed as being motivated by awareness of the medium- and long-term challenges, and the desire to create a critical mass of societal pressure for action. Politicians have typically had a conservative relationship with climate action, although it is a partisan issue and recent years have seen a marked amplification of polarisation around the topic (Wong-Parodi & Feygina, 2021). For example, the former President of the United States of America (US), Donald Trump Jr., once described climate change as a “hoax” and often uses hyperbolic irony to appeal to his listeners (Abbas, 2019). This highlights a contrast in motivation for — and nature of — action on climate change.

Within this context, this paper uses the tools of corpus-assisted discourse analysis (CADS), within the broader approach of ecolinguistics, to analyse the discourse constructed in the public talk of a sample of politicians and climate activists. Analysis is conducted with a view to furthering understanding of how the thematic priorities and ideological positionings of the two groups may be subtly embedded in their language use. Understanding how the groups use language to establish particular ideological and semantic frames may enable audiences to engage with their messages in a more critical and informed way.

2. Language and climate change

The field of ecolinguistics has developed along multiple strands since its early days in the 1970s, and, whilst there have been calls for a more unified framework for the discipline (Steffenson & Fill, 2014) and a more naturalistic way of conceiving language itself (Abram,

1996, as cited in Stibbe, 2012), Stibbe (2012) and Steffenson and Fill (2014) note how challenging the shift from the culture-nature dichotomy is. Finke (2008, p. 75, as cited in Steffenson & Fill, 2014) conceives of language as a “linking system between culture and nature” and ecolinguists have interrogated this linking system in varied ways. Mühlhäusler’s (1996) conception of an ecology of language as being linked to a “critique of linguistic practices that lead to the degradation of the natural environment” (Steffenson & Fill, 2014, p. 10) is of value here as we undertake an eco-critical analysis in this paper.

Stibbe (2012, p. 5) discusses the seeming inevitability built into the “hegemonic discourses which directly contribute to ecologically destructive behaviour”, through which responsibility never lands. Only businesses can curtail destructive actions, not politicians or the media, but the businesses are in thrall to the destructive stories-we-live-by (Stibbe, 2021) of the growth-is-good mantra first explored by Halliday (1990). Fairclough (2006) uncovered some of these discourses of hegemony and neoliberalism and Coupland and Coupland (1997, as cited in Stibbe, 2012) observe how “competing discourses” co-exist, with the media reformulating environmental discourses in a way that negatively “affect[s] the survival and wellbeing of the human species as well as other species on Earth” (Steffenson & Fill, 2014, p. 9).

These “competing discourses” between groups of humans need to be analysed with a view to seeing the groups or individual language users as the “interacting elements” (de Boer, 2001, p. 30, as cited in Steffenson & Fill, 2014) in a complex system that seeks to highlight how “human behaviour meshes with larger societal, cultural and natural structures” (Steffenson & Fill, 2014, p. 15). Groups of individual humans may perceive divergent “affordances” of objects, artefacts or natural phenomena to draw on ecological psychology, which may be the result of socialisation within a different habitus (Bourdieu, 1977) and these differing perceptions on the natural world and humans’ place in it will manifest in distinct discourses. Stibbe (2012, p. 12) states that to offer a more valuable challenge to the hegemonic discourses than can be provided through language planning, the discipline needs “critiques of influential discourses” in order to highlight their features so that alternatives can be offered. One systematic way of exploring such influential discourses is through a corpus-assisted discourse studies analysis.

3. Corpus-assisted discourse studies (CADS)

Corpus-assisted discourse studies (CADS — the term was first introduced by Partington & Haarman, 2004) combines the established linguistic methods of corpus linguistics and discourse analysis (see Ancarno, 2020, for a detailed explanation of the historical development of CADS). A useful, and established, definition of CADS is provided by Partington (2010):

The principal endeavour of Corpus-Assisted Discourse Studies can be summarised quite simply: it is the investigation and comparison of features of particular

discourse types, integrating into the analysis, where appropriate, techniques and tools developed within corpus linguistics. (Partington, 2010, p. 88)

Baker and McEnery (2015) argue that CADS provides a powerful and robust method for the analysis of discourse. Corpus linguistics is a largely quantitative method which involves using a computer-held body of naturalised texts, and a range of computerised methods, to explore aspects of language and language use. A well-documented benefit of using corpus linguistics is that it enables us to make observations about language use which go beyond intuition, and, because it is computer-based, it allows the exploration of patterns of language use which are not observable to the human eye (what Partington, 2010, p. 88, refers to as “non-obvious meaning”). This facilitates identification of repeated patterns of language use across large amounts of text. In CADS, corpus techniques are integrated with methods commonly associated with qualitative discourse analysis which typically pay greater attention to understanding the context in which texts are produced and received. In so doing, CADS approaches can ultimately “reveal more nuanced patterns of language use and representations [...] when compared with a quantitative or qualitative analysis alone” (Jaworska, 2016, p. 4). Various scholars (e.g., Ancarno, 2020; Baker, 2008; Baker & Levon, 2015; Baker et al., 2013; Jaworska, 2016; Mautner, 2009; O’Keeffe & McCarthy, 2010; Partington, 2006; 2010) have written more extensively on the combination of corpus linguistics and CDA and have examined in detail how corpus linguistics can be used to enhance and support the claims made through the application of CDA.

Partington (2006; 2010) explains that CADS is characterised by the compilation of ad hoc specialised corpora with the aim of investigating the characteristics of a particular type of discourse. In this way, CADS is particularly useful for enabling the comparison of discourse types through comparing corpora. This approach is applied in the research presented in this article whereby two specialised corpora of activist discourses (activist and politician) were compiled and then compared.

CADS can therefore be a useful approach for investigating broad linguistic interests, which can involve scientific and rhetorical fields of study such as climate change. Hunston (2002, p. 3) notes that “a corpus does not contain new information about language, but the software offers us a new perspective on the familiar”. Therefore, it can “highlight the use of language and the development of opinions and attitudes”, which is valuable for decisions regarding climate action (Fløttum, 2017, p. 2).

The specific corpus techniques used in this research are keywords and concordance analyses, available using the software Sketch Engine. Corpus analysis often starts with an analysis of keywords across the corpus. Scott (2014) defines a “keyword” as a word that occurs in a corpus more often than would normally be expected when compared to another corpus. A keyword list is a useful starting point for word-based corpus analysis as it can begin to reveal information about themes and discursive priorities within the texts comprising the corpus. This can then provide a basis for further analysis. Stubbs (2001, p. 48, as cited in Mautner, 2005, p. 100) defines keywords as “nodes around which ideological

battles are fought”. Keywords, then, are very revealing in terms of the more unusual meanings and trends presented in the corpus, as well as highlighting issues of referential adequacy (see Penman, 2001, p. 148, for a discussion of the “semantically vague” term “sustainability”). A keyword analysis requires the corpus under scrutiny to be compared with a “reference corpus” which is a larger and more general corpus. In the case of this research, the keywords lists were generated by comparing corpus with a word frequency list from the English Web 2018 Corpus. It is standard practice in corpus linguistics to remove the grammatical words from a keyword list so that the words presented are the lexical, or content, words. Therefore, in the keyword lists presented, only the lexical words are included.

A next stage commonly used in CADS is to consider the semantic environment of some lexical items. Examining a word’s concordances (a specified number of words to the left and right of the search term) can help to build up a semantic profile of that word which can contribute to revealing any underlying discourses and ideologies in the corpus. Using keyword and concordance analysis together can provide a good overview of the main themes, discourses and ideologies prevalent in the corpus.

The CADS approach has been successfully applied in previous studies of language and climate discourse (e.g., Boykoff & Boykoff, 2007; Dahl & Fløttum, 2019; Dayrell, 2019; Grundman & Krishnamurthy, 2010; Kirk-Browne, 2021; Willis, 2017). The present study aims to develop and extend this existing research, in particular the studies of Willis and Kirk-Browne which both focus on a corpus-assisted analysis of climate change discourses in the talk of British politicians. However, there exists a gap in CADS work which focuses on activist discourses, especially the study of climate activist discourse. One exception is Nerlich and Koteyko (2009) who use elements of CADS to find that a climate activist group used compounds of “carbon” to “persuade audiences to change their carbon emissions behaviour and to shift perceptions of climate change from being a global environmental problem tackled by governments to an individual/community concern”.

This study aims to investigate and explicitly compare climate discourse between two groups: politicians and activists, exploring what each group focuses on when discussing climate change. We adopt the CADS framework outlined above to analyse climate discourse collected from English-speaking activists and politicians. We contextualise the CADS findings within the broader context of ecolinguistic research on language and climate change with the intention of providing “detailed and systematic analyses of hegemonic discourses and their alternatives” which Stibbe (2012, p. 12) posits is required.

4. Methods

For the purposes of this study, two new sample corpora were created: the Activist Corpus (henceforth ActCor) and the Politician Corpus (henceforth PolCor). The English Web 2018 Corpus was used as a reference for comparison. Spoken discourse was collected for both corpora from the internet and transcribed speeches from English-speaking politicians

and activists. For the most part, the PolCor data was collected from BBC Parliament with Houses of Commons debates on climate change being the principal source, whereas most of the ActCor data was sourced from YouTube.

ActCor is made up of 25,094 words and PolCor contains 31,760 words. As mentioned before, the English Web 2018 Corpus was used as a reference corpus in order to construct keyword lists from the two sample corpora for this research. English Web 2018 is comprised of texts collected from the internet and contains 21.9 billion words (belonging to the TenTen Corpus Family, Sketch Engine).

Within each corpus, Sketch Engine was used to compile keyword lists and concordances. Sketch Engine allows searches to “capture more extensive meaning networks encoded in the lexis” (O’Keeffe & McCarthy, 2010, p. 273). The keyword analysis extracted single- and multiple-word units which were typical of each corpus and defined its content. This was important because it allowed identification of what is unique in each corpus compared to each other. Moreover, the keyword analysis adds to the concordance analysis conducted in previous research by Kirk-Browne (2021).

These corpus analysis tools allow the researcher to find patterns in the text that might not necessarily be found through a critical discourse analysis. Using a reference corpus “shows the differences between standard speech and the debate in question, revealing significant patterns” (Willis, 2017, p. 219).

5. Analysis and discussion

In this section, we firstly present the findings from the keyword analysis. We discuss how the keywords from each corpus fall into particular semantic fields which reveal the thematic priorities of the Activist and Politician groups. We then go on to examine concordances of the pivotal phrase *climate change* in the two corpora.

5.1. Keyword analysis

Table 1 shows the top 25 single keywords from ActCor.

Table 1: ActCor – Single keywords

1. desertification	2. grassland	3. covid ¹	4. desertifying	5. rewilding
6. coronavirus	7. lifeblood	8. pack-hunting	9. hundred-mile	10. Ecuadorian
11. overgrazing	12. pangolin	13. indigenous	14. sacredness	15. pessimist
16. corona	17. pastoralist	18. grazing	19. activism	20. climate
21. mimic	22. lockdown	23. holocene	24. polluter	25. permafrost

¹ As the reference corpus was created in 2018, this was before the coronavirus pandemic which is why these references are seen as unique to ActCor (*covid, coronavirus, corona, lockdown*).

The top 25 single keywords from ActCor can be categorised into the following main semantic fields:

- negative impact of climate change (*desertification, desertifying, overgrazing, permafrost, polluter*)
- an action to preserve the natural world (*rewilding*)
- influence on native life (*indigenous, sacredness*)
- the natural world (*Holocene, climate, pangolin, Ecuadorian, grassland*)

Table 2 shows the top 25 multiple keyword phrases from ActCor.

Table 2: ActCor – Multiple keyword phrases

1. climate crisis	2. mother earth	3. clean drinking	4. sacred water	5. natural world
6. fossil fuel industry	7. climate justice	8. fuel industry	9. clean drinking water	10. causing desertification
11. mimicking nature	12. climate activist	13. celebrity culture	14. bare ground	15. basic human right
16. climate action	17. creating awareness	18. indigenous community	19. open mind	20. tipping point
21. perfect storm	22. wasting plastic	23. David Attenborough	24. stop waste	25. climate justice activist

The top 25 multiple keyword phrases fall into the main semantic fields of:

- activism and action (*climate justice, climate activist, climate action, creating awareness*)
- nature (*mother earth, sacred water, natural world, mimicking nature*)
- types of people (*celebrity culture, indigenous community*)
- human rights (*clean drinking, basic human right*)
- negative effects relating to climate change (*climate crisis, causing desertification, tipping point, wasting plastic*)

These sets of semantic fields, identifiable through the keyword analysis, reveal the thematic and rhetorical priorities of the texts which comprise ActCor. The semantic fields show that this group of speakers are, unsurprisingly, primarily focused on the negative effects of climate change, both on natural phenomena and on humans. In many cases, “people” (humans) in this corpus are constructed not necessarily as destructive but as in need of protection and preservation. “Indigenous communities” in particular are singled out as “victims” of climate change rather than causes of it and its attendant negative effects. A social justice discourse also emerges through the keyword semantic fields (e.g., *rights*) with discourses of climate change being bound up with discourses of ecological and social justice. Even natural phenomena are sometimes assigned a social value (e.g., *sacred water*) in ActCor — something that does not occur at all in PolCor.

Interestingly, the phrase *climate activist* itself has very low reference in the English Web 2018 reference corpus. This suggests that even though the reference corpus contains data

from all across the web in 2018, climate activism as a term and concept seems to be relatively new and particularly unique to ActCor. For context, 2018 was the year that Greta Thunberg took part in her first school strike (BBC, 2020) and it is also the year the activist group Extinction Rebellion was created. It may be the case, therefore, that climate activism has only in recent years become discursively prominent in the media and on the web. The term does not appear at all in PolCor. In fact *climate* does not appear at all as a single keyword in PolCor and only appears as a multiple keyword phrase in the context of governmental acts and agreements, as is shown and discussed below.

Table 3 shows the top 25 single keywords for PolCor.

Table 3: PolCor – Single keywords

1. prepayment	2. decarbonise	3. constituency	4. onshore	5. renewable
6. decarbonisation	7. cross-party	8. carbonisation	9. roll-out	10. tariff
11. fracking	12. underinvestment	13. pensioner	14. coal-fired	15. woeful
16. constituent	17. manifesto	18. gentleman	19. tories	20. home-grown
21. subsidise	22. payer	23. updater	24. subsidy	25. biomass

In PolCor, the main semantic categories identifiable in the top 25 single keywords are:

- finance and economy (*prepayment, tariff, underinvestment, subsidise*)
- energy (*decarbonise, renewable, decarbonisation, carbonisation, fracking, coal-fired, energy-efficient*)
- politics (*manifesto, roll-out, constituency, constituent*)
- location (*home-grown, onshore*)

It can immediately be seen that the semantic fields emerging from the PolCor keywords are markedly different from those in ActCor. This indicates that there are divergent and competing discursive priorities (Coupland & Coupland, 1997, as cited in Stibbe, 2012) in the two corpora with ActCor predominantly being concerned with the causes and effects of climate change itself, and PolCor being more concerned with politics, finances and the energy industry, reflecting a distinctly different ecological psychology (Gibson, 1979/2015).

Interestingly, the word *woeful* is seen as typical of PolCor compared to the reference corpus. *Woeful* only collocates with *underinvestment* in PolCor in the phrase “woeful underinvestment”. So it is only amounts of financial investment that are evaluated negatively in this corpus, not the effects of climate change itself. *Woeful* is notable as the only evaluative adjective to appear as a keyword. It is probable that its use within PolCor is party political — suggestive of the political social actors being engaged in attacking each other rather than focused on the issues in hand. This could be reflective of the short-termism of politicians in their focus on appeasing the electorate.

To a large extent, the semantic fields shown above also emerge in the multiple keyword

phrase analysis of PolCor. Table 4 shows the top 25 multiple keyword phrases from PolCor.

Table 4: PolCor – Multiple keyword phrases

1. fuel poverty	2. renewable heat	3. energy security	4. capacity market	5. question number
6. onshore wind	7. renewable heat incentive	8. energy market	9. price freeze	10. last government
11. offshore wind	12. low carbon	13. big energy	14. energy bill	15. energy company
16. carbon budget	17. climate change act	18. renewable target	19. bill payer	20. solar industry
21. climate agreement	22. visual impact	23. new gas	24. woeful underinvestment	25. gas authority

There are three clear semantic themes found from the top 25 multiple set keywords:

- energy (*fuel poverty, renewable heat, energy security, onshore wind, energy market, offshore wind, low carbon, big energy, carbon budget, solar industry*)
- action for renewability (*renewable heat incentive, renewable target, climate change act*)
- finance and economy (*capacity market, price freeze, energy bill, energy company, bill payer*)

Again, the semantic fields emerging from the multiple keyword phrase analysis are quite divergent from those identified in ActCor, with greater emphasis placed on finance, economy and (energy) industry. This suggests that the politicians whose speech comprises this corpus are more concerned with these issues than with the protection of people and of the natural world. In fact, it is noticeable that people and nature hardly feature at all in the PolCor keywords and multiple keyword phrases. This is despite the texts that comprise this corpus being explicitly focused on the topic of climate change.

The keyword analysis is therefore helpful for revealing the thematic priorities of the two groups. The next stage of the CADS analysis allows for greater consideration of how the specific phrase *climate change* operates in the context of longer stretches of text in each corpus. This phrase was analysed because it is what all of the texts comprising both corpora are purported to be about.

5.2. Concordance analysis

Table 5 shows concordance lines for all occurrences of the phrase *climate change* in ActCor.

Table 5: ActCor – *Climate change* concordance lines

1. I connected the oil companies with climate change .
2. My snapshot doesn't feel good in terms of pollution, climate change , pipelines breaking, recycling, sanitation, poverty, hunger and illnesses are related to these issues.

3. if we don't change the path that we're on today the future of humanity is at stake while you work to meet the challenge of climate change .
4. they know who they are, we know who they are, we are all rich or poor, powerful or powerless, we will all suffer the effects of climate change in ecosystem destruction and we are facing what is quickly becoming the greatest moral crisis of our time
5. up on each other because we fail today so bad to connect these issues, we see it as well it's climate change and then it's this but these are all just symptoms of one bigger problem
6. a green deal or a transaction to a more sustainable society is to turn off the tap. That is what is needed to stop climate change as well.
7. we have oil spills contaminating thousands of peoples drinking water and at the same time we have climate change causing huge damage to our communities.
8. When we talk about climate change , I'm sure a lot of you have heard the words climate justice, or you have heard that the climate crisis is interconnected
9. For example, inequality and poverty etc. and so for indigenous people, climate change is very much real and very much active in our everyday lives.
10. a lot of people don't know is that we're also directly affected of what created climate change or what contributes to climate change and that is the fossil fuel industry.
11. When it comes to the Amazon, the Amazon is fundamental to combat climate change .
12. the biggest thing of the changes because from that stems all sorts of things, stems climate change , the population enlarges, carbon dioxide increases in the atmosphere, the temperature of the sea rises
13. the result of our rising population, rising towards 10 billion people, land that is turning to desert, and, of course, climate change . Now there's no question about it at all: we will only solve the problem of replacing fossil fuels with technology.
14. But fossil fuels, carbon, coal and gas, are by no means the only thing that is causing climate change .
15. the authors of this position paper on climate change from which I obtained these pictures attribute this change to 'unknown processes'. Clearly, we have never understood
16. We cannot reduce animal numbers to rest it more without causing desertification and climate change .
17. When I first realised that we had no option as scientists but to use much-vilified livestock to address climate change dilemma, how were we to do it?
18. What we are doing globally is causing climate change as much, I believe, fossil fuels, and maybe more than fossil fuels.
19. And if this continues we are unlikely to be able to stop the climate changing , even after we have eliminated the use of fossil fuels.
20. I once missed three months of school due to the effects of climate change we experienced in my family and my community
21. I am a victim of this whole climate crisis and I am not ashamed to say so after the massive effects of climate change in my home village
22. I saw that we were facing a crisis that was beginning to affect every living system on our planet, I saw climate change was going to be the defining issue of our time

23. what a lot of people fail to see or simply ignore is that climate change isn't an issue that is far off in the future
24. young people are standing up all over the planet because we see that climate change is a human rights issue
25. Youth like myself across the United States are suing our state and federal governments demanding to take action on climate change immediately
26. We will rise to overcome it, we need you to stand with us, never before has there been such a unifying issue as climate change and it is time to set aside everything that divides us
27. Climate change is real, it is happening right now, it is the most urgent threat facing our entire species
28. Intensify deforestation and drought [...] Climate change is a result of this, and it also helps to make the fires stronger.

From analysing the occurrences in context, the texts adopting the phrase *climate change* within ActCor can be characterised into the main semantic frames of: cause and effect; immediacy/realness; and stopping/challenging. The most frequent frames contained linguistic items that triggered thoughts about cause and effect, specifically about blame and the negative impact of climate change.

Concordances in which *climate change* co-occurs with cause and effect terminology tend to emphasise the role of human activity in the cases of climate change, but emphasise effects on nature as well as on humans (examples 4, 7, 10, 12, 14, 16, 18, 20, 21, 22). What is notably absent are co-occurrences of *climate change* with economic effects, something which is seen more in the politician corpus concordances for the same phrase.

Another notable co-occurrence with *climate change* in ActCor is words to do with stopping and challenging climate change (examples 3, 6, 11, 17, 19). As will be shown in the following section, this is a feature shared with the climate change concordances in PolCor. In both corpora, *climate change* is discursively constructed in negative terms — as a bad thing which needs to be challenged.

The activist concordances contain many present tense constructions (and some past tense) which has the effect of highlighting the immediacy, importance and “realness” of climate change to the present time, rather than as something which will happen in the future (this is emphasised more in the politician corpus as is shown below). Examples of concordances which are characteristic of the semantic frame of immediacy and realness include 9, 22, 23 and 27.

Table 6 shows concordance lines for all occurrences of the phrase *climate change* in PolCor.

Table 6: PolCor – *Climate change* concordance lines

1. Caroline Flint is Labour's Shadow Energy and Climate Change Secretary.
2. Ed Davey is the Energy and Climate Change Secretary, who was a Liberal Democrat.
3. Part of the reason for higher bills has been the use of green levies to help combat

climate change , charges that conservatives have been rolling back.
4. Matt Hancock is one of the Conservative ministers in the Department of Energy and Climate Change
5. There should be no more warm words on climate change without the policies and programmes we need to address the problem.
6. Voting Green, collecting Green MPs, is the best way to ensure that addressing climate change is really taken seriously.
7. On climate change , we led a historic EU deal with world leading carbon reduction targets
8. Starting with climate change and the consequences of energy policy that climate change has brought.
9. the reason the Coalition Government, both the Tories and the Liberal Democrats, had to address these issues, is because of climate change act brought in under Melbourne.
10. We have always said it should be in line with the committee on climate change .
11. We said that the carbonisation target should be in line with the committee on climate change , that is about carbon intensity
12. their position on Europe would undermine the international efforts on climate change
13. I do believe climate change is happening
14. When the last Labour government made the decision, particularly because of the development of our climate change policy, I seem to recall David Cameron said it should be a last resort
15. The fourth assessment report confirms both the nature and scale of climate change and human conservation to it.
16. with the decarbonisation of the energy sector and of the wider economy, consistent with meeting our targets in the climate change act, which we are committed to.
17. The honourable gentleman has a point that we won't defeat dangerous man-made climate change unless there is a global solution
18. modernised infrastructure and clean energy that the country needs to meet our energy and security requirements and our climate change obligations
19. investment in infrastructure is low carbon and that is compatible with overall climate change goals that will encourage investors to invest in truly Green futures
20. There is no longer term challenge for the people, they are investing on than climate change .
21. The climate change act underpins the drive towards renewable energy in this country and was indeed passed across parties
22. government is taking to solar energy is effectively stopping individuals who want to make a contribution to comment on climate change in their own homes, by installing solar panels
23. Section 14 of the climate change act stipulates that the government must lay before parliament a report setting out how it will meet each carbon budget
24. The committee for climate change 2015, in its report to Parliament, recommended that the government produces an effective policy framework
25. We tried to get it incorporated into the Paris climate change agreement, but we're

working with international partners to make sure we get an international agreement
26. The floods over the last few weeks are a reminder of the effects of climate change .
27. Given the government claims for the UK ambition at the Paris climate change talks, why were they at the same time undermining policies?
28. If that is the case, can she explain why there appears to be no mention of climate change in the remit of the national infrastructure commission?
29. Not only in terms of the commitment to the climate change act, but also the structure of the commitment of fewer carbon emissions.
30. The Paris agreement will help ensure that all countries acting, helping to make sure climate change effectively addressed.
31. I would also point out how the Paris climate change agreement is not as ambitious as the ambition that we already have in place through the climate change act
32. National action ambitious as the climate change bill we have.
33. the deal agreed in Paris actually sees the world is signing up for the approach adopted by the UK in tackling climate change is in marked and is he confident the approach means we will meet the goals agreed in Paris?
34. The UK can take pride in the structure that was put together in Paris, because it mimics in some way the climate change act.
35. review of the government's approach to flood defences, which will consider the rising flood risk posed by climate change .
36. This government takes seriously the impact of climate change and the fact it has had such a devastating impact in terms of flooding recently.
37. the world's leading network of parliamentarians devoted to leadership, legislative leadership in climate change , has a key role to play to make sure it is reality.

Unlike in ActCor, *climate change* in PolCor often co-occurs with words and phrases which fall into a “politics” semantic field of meaning. Frequent collocates of *climate change* in these concordances include *act*, *Secretary*, *policy*, *target*, *report* and *budget*. From analysing these words in context, the language in the relevant sentences contributed to political ideologies, as well as the frames surrounding the following topics: money, solution, energy, agreement and disagreement, belief and disbelief, and responsibility. Only concordance lines 26 and 36 mention the effects and impacts of climate change.

In terms of sentence types, there are many passive sentences around *climate change*, as well as declarative and interrogative active sentences. One implication of the frequency of passive sentences paired with solution topics, is that the politicians distance themselves from climate change and their responsibility of actioning real solutions to solve it. The concordances reveal that the speakers often discursively devolve responsibility to non-human actors and phenomena (*act*, *bill*, *commission*, *agreement*, etc.) which stands in marked contrast to the agentive use of *we* seen numerous times in the ActCor concordances. Thus, we see a personal collective discourse of human responsibility constructed in ActCor which is absent in PolCor.

As shown, *climate change* in PolCor contains more contextual topics compared to

ActCor. Interestingly, there is more focus on energy and money in PolCor, as well as responsibility. This is, of course, doubtless because politicians are responsible for enacting legislative change, and for spending and regulations for energy, whereas activists are more focused on pressuring for action, so will likely concentrate on informing about cause and effect. As for active and passive voice, *climate change* is spoken about only in active voice within ActCor, whereas PolCor has many examples of passive voice. This creates the implication of a loss of control surrounding climate change, and it can be inferred that the activists speak of action and doing something in order to gain control. However, some politicians try to distance themselves from the situation, and potentially from any responsibility for it, by adopting the passive voice.

Whilst the ActCor concordances mainly contain present tense grammatical constructions, occurrences of the phrase in PolCor occur more within future constructions, either in grammatical future tense constructions or with lexical items that indicate futurity (e.g., *goals, targets, ambition, obligations*). This can be seen in examples 7, 16, 18, 27, 31, 32 and 33.

The PolCor concordances contain a small but notable number of examples where *climate change* co-occurs with what has been characterised as neoliberal discourse in other contexts. Concordance lines 7, 17, 31, 32, 33, 34 and 37 seem to constitute political boasting about the UK's achievements in relation to climate change, or what Van Dijk (2006) terms “national glorification”. This kind of national glorification around climate change does not occur at all in ActCor.

In sum, both corpora construct climate change in negative terms — as something that requires challenging, addressing, defeating, and stopping. Thus, climate change is conceptualised as a threat to humans. Neither corpus contains alternative conceptualisations of climate change as a phenomenon to be worked with, accommodated to, and so on, as may be more likely in a new version of the ActCor following publications on notions such as Deep Adaptation (Bendell, 2020). It may be useful for both groups to consider incorporating this alternative frame into their discourses on climate change as the realities of “working with” may ultimately constitute a powerful rhetoric for the global audiences of both groups.

6. Conclusion

This paper has aimed to demonstrate the value of using CADS analytic tools within an overarching ecolinguistics approach. This synergy is useful for developing the fields of *both* ecolinguistics and CADS. The analysis presented in the paper has enabled identification of some of the precise discursive features deployed by the two groups to further their arguments and indicate their ideological positions. It is apparent that there are distinct discursive approaches between the two groups of speakers. The activists and politicians adopt divergent stances and semantic orientations within the debate. In sum, the activists focus predominantly on the negative effects of climate change. A “cause and effect”

semantic frame emerges through the features identified in the CADS analysis which emphasises the (negative) role of human activity in causing climate change. The discourse of climate change in ActCor is inseparable from discourses of ecological and social justice. And there is a semantic frame of immediacy and realness in relation to climate change in ActCor which is, by contrast, notably absent in PolCor. There is a more dominant focus on semantic frames of industry, finance, politics and economy in PolCor. There is very little attribution of climate change to human actors — instead, the language works to devolve responsibility for climate change to non-human actors. Furthermore, although the activists focus on spreading awareness about the social and natural effects of climate change, the priority of the politicians focusing on money could overshadow public opinion with regards to the now emergency nature of the climate crisis. As with the PolCor results from this study, in the corpus studies of Willis (2017) and Kirk-Browne (2021), there is very rare mention of the natural world and people, as well as the negative effects of climate change for both of them. This corroborates our earlier point that groups of individual humans may perceive divergent “affordances” of objects, artefacts or natural phenomena, possibly as a result of socialisation within a different habitus (Bourdieu, 1977) and that these differing perceptions on the natural world and humans’ place in it naturally manifest in distinct discourses. The PolCor results show a similar tendency to “exclude natural and social aspects of organisational environment from the discussion” as was found in Biloslavo et al. (2018, p. 746) who conducted an eco-critical analysis of business models. The socialisation into a neo-liberal ideology that some humans in the business and political worlds experience may differ markedly from that that those in the ActCor have been exposed to, particularly in terms of conceptualisations of the place of and responsibility of humans in the Anthropocene. It is important to note, however, that the results from the ActCor do demonstrate an anthropocentric viewpoint, which align the two corpora more than might have been expected in some ways.

Of course, this study cannot assume the findings to be representative of all activists and politicians because the data from both corpora only amounted to 56,854 words and only English-speaking individuals were included. As climate change is a global phenomenon, multilingual analysis is required alongside larger amounts of data in future developments of this research area. And it is important to note that one limitation of the data collection approach for this study is that the analysis only shows politicians in the public sphere and not necessarily how they might personally frame climate change.

What is common in both corpora is an emphasis on stopping and challenging climate change. And what is absent in both corpora, which may be a useful way forward, is an alternative semantic frame whereby climate change is something which human social actors *work with* rather than against. This frame may be particularly useful to the rhetoric of the activists in that it reinforces the immediacy of climate change and could potentially embody a social justice agenda in which challenges around inequalities and injustices must be addressed in order to work with climate change.

References

- Abbas, A. H. (2019). Super-hyperbolic man: Hyperbole as an ideological discourse strategy in Trump's speeches. *International Journal for the Semiotics of Law*, 32(1), 1-18. DOI: 10.1007/s11196-019-09621-8
- Ancarno, C. (2020). Corpus-assisted discourse studies. In A. De Fina & A. Georgakopolou (Eds.), *The Cambridge handbook of discourse studies* (pp. 165-185). Cambridge: Cambridge University Press.
- Baker, P. (2008). *Using corpora in discourse analysis*. London: Continuum.
- Baker, P., & Levon, E. (2015). Picking the right cherries? A comparison of corpus-based and qualitative analyses of news articles about masculinity. *Discourse & Communication*, 9(2), 221-236. <https://doi.org/10.1177/1750481314568542>
- Baker, P., & McEnery, T. (Eds.) (2015). *Corpora and discourse studies: Integrating discourse and corpora*. London: Palgrave Macmillan.
- Baker, P., Gabrielatos, C., & McEnery, T. (2013). *Discourse analysis and media attitudes: The representation of Islam in the British press*. Cambridge: Cambridge University Press.
- BBC (2020). Greta Thunberg: Who is she and what does she want?. Available from: <https://www.bbc.co.uk/news/world-europe-49918719>. [Accessed 29/04/2021].
- Bendell, J. (2020). Deep adaptation: A map for navigating climate tragedy. *Institute for Leadership and Sustainability (IFLAS) Occasional Papers Volume 2*. University of Cumbria, UK. <http://insight.cumbria.ac.uk/id/eprint/4166>
- Biloslavo, R., Bagnoli, C., & Edgar, D. (2018). An eco-critical perspective on business models: The value triangle as an approach to closing the sustainability gap. *Journal of Cleaner Production*, 174, 746-762. <https://doi.org/10.1016/j.jclepro.2017.10.281>
- Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge: Cambridge University Press.
- Boykoff, M., & Boykoff, J. (2007). Climate change and journalistic norms: A case-study of US mass-media coverage. *Geoforum*, 38(6), 1190-1204. <https://doi.org/10.1016/j.geoforum.2007.01.008>
- Cavicchioli, R., Ripple, W. J., Timmis, K. N., Azam, F., Bakken, L. R., Baylis, M., ... & Webster, N. S. (2019). Scientists' warning to humanity: Microorganisms and climate change. *Nature Reviews Microbiology*, 17(9), 569-586. <https://doi.org/10.1038/s41579-019-0222-5>
- Dahl, T., & Fløttum, K. (2019). Climate change as a corporate strategy issue: A discourse analysis of three climate reports from the energy sector. *Corporate Communications: An International Journal*, 24(3), 499-514. <https://doi.org/10.1108/CCIJ-08-2018-0088>
- Dayrell C. (2019). Discourses around climate change in Brazilian newspapers: 2003-2013. *Discourse & Communication*, 13(2), 149-171. <https://doi.org/10.1177/1750481318817620>
- Fairclough, N. (2006). *Language and globalisation*. London: Routledge.
- Fill, A. (2001). Ecolinguistics: State of the art 1998. In A. Fill & P. Mühlhäusler (Eds.), *The ecolinguistics reader: Language, ecology and environment* (pp. 43-53). London: Continuum.

- Fløttum, K. (2017). *The role of language in the climate change debate*. London: Routledge.
- Gibson, J. J. (1979/2015). *The ecological approach to visual perception*. New York: Psychology Press.
- Grundman, R., & Krishnamurthy, R. (2010). The discourse of climate change: A corpus-based approach. *Critical Approaches to Discourse Analysis across Disciplines*, 4(2), 113-133.
- Halliday, M. A. K. (1990). New ways of meaning: The challenge to applied linguistics. *Journal of Applied Linguistics*, 6, 7-36. DOI: 10.5040/9781474211932.ch-006
- Hunston, S. (2002). *Corpora in applied linguistics*. Cambridge: Cambridge University Press.
- IPCC (2022). *IPCC Sixth Assessment Report. Climate Change 2022: Impacts, Adaptation and Vulnerability*. <https://www.ipcc.ch/report/ar6/wg2>
- Jaworska, S. (2016). Using a corpus-assisted discourse studies (CADS) approach to investigate constructions of identities in media reporting surrounding mega sport events: The case of the London Olympics 2012. In I. Lamond & L. Platt (Eds.), *Critical event studies: Approaches to research* (pp. 149-174). London: Palgrave Macmillan. <https://doi.org/10.1057/978-1-137-5>
- Kirk-Browne, S. (2021). An analysis of climate change discourses in the UK parliament (2006-2018). *Language & Ecology*. <http://ecolinguistics-association.org/journal>
- Mautner, G. (2005). Time to get wired: Using web-based corpora in critical discourse analysis. *Discourse & Society*, 16(6), 809-828. <https://doi.org/10.1177/0957926505056661>
- Mautner, G. (2009). Checks and balances: How corpus linguistics can contribute to CDA. In R. Wodak & M. Meyer (Eds.), *Methods of critical discourse analysis* (2nd ed., pp. 122-143). London: Sage.
- Mühlhäusler, P. (1996). *Linguistic ecology: Language change and linguistic imperialism in the Pacific Region*. London: Routledge.
- Nerlich, B., & Koteyko, N. (2009). Carbon reduction activism in the UK: Lexical creativity and lexical framing in the context of climate change. *Environmental Communication* 3(2), 206-223. DOI: 10.1080/17524030902928793
- O’Keeffe, A., & McCarthy, M. (2010). *The Routledge handbook of corpus linguistics*. London: Routledge.
- Partington, A. (2006). Metaphors, motifs and similes across discourse types: Corpus-assisted discourse studies (CADS) at work. In A. Stefanowitsch & S. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 258-294). Berlin: Mouton de Gruyter.
- Partington, A. (2010). Modern diachronic corpus-assisted discourse studies (MD-CADS) on UK newspapers: An overview of the project. *Corpora* 5(2), 83-108. DOI: 10.3366/E1749503210000407
- Partington, A., & Haarman, L. (2004). *Corpora and discourse*. Bern: Peter Lang.
- Penman, R. (2001). Environmental matters and communication challenges. In A. Fill & P. Mühlhäusler (Eds.), *The ecolinguistic reader* (pp. 143-153). London: Continuum.
- Scott, M. (2014). *Wordsmith tools*. Lexical Analysis Software.

- Steffenson, S. V., & Fill, A. (2014). Ecolinguistics: The state of the art and future horizons. *Language Sciences*, 41, 6-25. <https://doi.org/10.1016/j.langsci.2013.08.003>
- Stibbe, A. (2012). Ecolinguistics and globalization. In N. Coupland (Ed.), *The handbook of language and globalization* (pp. 406-425). Malden, MA: Wiley-Blackwell.
- Stibbe, A. (2021). *Ecolinguistics: Language, ecology and the stories we live by* (2nd ed.). London: Routledge.
- Stubbs, M. (2001). *Words and phrases: Corpus studies of lexical semantics*. Oxford: Blackwell.
- Van Dijk, T. (2006). Politics, ideology, and discourse. In K. Brown (Ed.), *The encyclopedia of language and linguistics* (Vol. 9, pp. 728-740). Oxford: Pergamon.
- Willis, R. (2017). Taming the climate? Corpus analysis of politicians' speech on climate change. *Environmental Politics* 26(2), 212-231. <https://doi.org/10.1080/09644016.2016.1274504>
- Wong-Parodi, G., & Feygina, I. (2021). Engaging people on climate change: The role of emotional responses. *Environmental Communication* 15(5), 571-593. DOI: 10.1080/17524032.2020.1871051