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An analysis of climate change discourses in the UK parliament (2006 – 2018)

Sarah Kirk-Browne
Queen Mary University of London, UK
E-mail: s.kirk-browne@qmul.ac.uk

Abstract

The political implications of addressing the climate emergency have come into an ever sharper focus over the past decade. As pressure mounts for a reassessment of environmental strategy, this paper examines the United Kingdom (UK) parliament's position through an analysis of the language used in the debating chamber between 2006 and 2018. The study used corpus analysis and a narrative approach to consider how politicians' choice of words and topics reveals underlying discourses and how these have shifted over time. Three major discourses related to climate change framed the study: gradualism, scepticism and catastrophism (Urry, 2015). The findings complemented research highlighting the dominance of the economic framing in UK politics in the mid-2000s (Willis, 2017). However, it also suggested that apparent consensus on this issue has grown less stable over time, and that a scepticism discourse has seen some resurgence. The findings highlighted that climate change in the UK parliament was viewed as an abstract challenge or threat, often considered solely on economic grounds, largely ignoring social impact and non-humans.

Keywords: UK parliament, climate change, corpus linguistics, narratives, discourse analysis

1. Introduction

It has been argued that climate change is a "post-politics" issue beyond the usual jurisdiction of any national government. The reality of climate change is so large and complex that the current political systems may be unable, ill-equipped, or unwilling to address it, as it also requires the engagement of a large number of non-governmental

stakeholders (Swyngedouw, 2013; Carter & Jacobs, 2014). Many people engaged in the politics of environmentalism focus on direct action and involvement in local campaigns and/or international campaigning, rather than pursuing traditional routes through national parliamentary representation. Some advocates of this view also argue that the de-politicisation of climate change is necessary to encourage widespread consensus, engagement and action (Maeseele & Pepermans, 2016).

However, the Westminster parliament is the major, democratically elected, legislative body in the UK, and within international politics, most regulations around emission reductions and targets are at the state level (Nash & Steurer, 2019). Since the mid-2000s, UK politicians have also appeared to take several steps to respond to international and activist pressure on climate change, including the Climate Change Act in 2008. This study looks at the language used in parliament to discuss the topic over a twelve-year period. By connecting this to broad narratives on the issue, it aims to track the key discourses that have shaped the UK parliament's actions on climate change.

2. Background

When politicians communicate about climate change with the public, they face a number of problems: scepticism about the extent of human responsibility for climate change; the scope of the changes that may be required to mitigate the problems; and the perception that the consequences of climate change are distant and abstract (Bertolotti & Catellani, 2014). This suggests that any examination of their language on this topic would provide complex results. A diachronic analysis of US presidential speeches highlighted this, as Bevitori (2015) found that the scope of the idea "environment" had expanded over 50 years to incorporate a range of issues. Her research suggests that although the environment is an important political idea for presidents, what the word actually represents has changed considerably over time. The ambiguity of what "environment" means could also lead to "climate change" becoming too abstract or difficult as a concept; it may be regarded as both too global and too local for traditional politics to deal with effectively. Climate change has been connected to global issues such as population growth and over-consumption, as well as local issues of flooding and crop failures (Adger et al., 2001). This suggests that national governance could only resemble management of problems, rather than the promotion of a particular set of political ideas and values related to climate change (Urry, 2011).

However, early measures to try and address environmental issues in the UK were controversial and led to clear political views being expressed. During 1999-2000 the Labour government attempted to introduce a Climate Change Levy, which resulted in a bitter confrontation with the business lobby, along with fuel protests which spurred a public backlash on high petrol prices. These resulted in a rejection of eco-taxation and a focus instead on the possibilities of using carbon markets to achieve emission reductions, with no environmental opposition arguments raised from the Conservatives or the general

public (Carter, 2014). This appears to show that a range of political ideas and values were used in the choice of environmental policy, rather than it being a neutral non-political issue.

From 2004 the topic of climate change began to be raised more forcefully by the scientific community, and media coverage increased. It has been suggested that due to these developments, the then Prime Minister Tony Blair saw tackling climate change as an issue that he "could promote on the international stage" even whilst domestic policy remained inadequate (Carter, 2014, p. 425). Therefore, it was around this time that the political power of the language of "climate change", becoming distinct from general environmental concerns, began to grow in importance in the UK.

Public interest and concern continued to grow, and from 2006 the three main parties in the UK parliament appeared to be competing with each other to prove their green credentials, with the Conservative opposition in particular, emphasising their commitment as part of their strategy to detoxify the party's image (Carter & Clements, 2015). Various environmental groups also played an important role in raising awareness, and Friends of the Earth launched a campaign calling for the government to introduce both annual carbon targets and new legislation that would set statutory targets for reducing emissions (Nash & Steurer, 2019). The Climate Change Act was subsequently passed on 28 October 2008.

The media language used to discuss climate change around this time largely reflects urgency and concern (Carter, 2014). However, in an analysis of the language used by Members of Parliament (MPs) in the Climate Change Bill debates, Willis (2017, p. 213) found a dominance of "scientific and economic framing" that appeared to present the issue as largely unthreatening and possible to solve with technical and economic developments. Willis suggests that this position stemmed from the Stern Report, published for the Labour government in 2006, which presented climate change in market terms. The main finding of the Stern Report was that failing to reduce emissions would damage the global economy (Carter & Jacobs, 2014). Therefore, Willis (2017) argues, the framing of climate change as an economic problem was a controversial but conscious choice of policy strategy that helped to consolidate cross-party and business support for the Bill.

However, Willis (2017) also notes that there were some significant absences in the Climate Change Bill debates: social and human impact, non-human species, and the possibility of irreversible change. The exclusion of these topics suggests the boundaries of the debate in UK politics at the time. In their comparative study of a government and an academic corpus, Wild et al. (2013) also found that nature was more likely to be discussed in language that suggested it was a commodity by politicians; for example, using phrases including references to value, investment and economic interests.

Although it is perceived as a historic piece of legislation, it has been suggested that political commitment to the measures in the Climate Change Act has been insecure. The link between climate change and economic concerns, which appeared to fuel the cross-party consensus, was put under increasing strain under a global economic downturn, and measures to implement the Act were challenged as blocking economic development (Lockwood, 2013). Carter and Clements (2015) suggest that since the Climate Change Act,

many Conservative backbenchers grew increasingly partisan and were encouraged by the right-wing media to express a more sceptical position. The 2016 dissolution of the Department for Energy and Climate Change into the Department for Business, Energy and Industrial Strategy also suggested that the issue had become much less prominent in its own right (Nash & Steurer, 2019). However, unexpected profitable successes, such as a growth in wind energy, have enabled politicians across all parties to appear supportive of, and engaged with, the environmental agenda (Lockwood, 2021).

The Climate Change Act was influential on subsequent legislation drawn up by other countries, and UK governments continued to position themselves as taking the lead in international action. This has largely consisted of encouraging other European nations to take responsibility, and looking at adaptation assistance for nations most vulnerable to climate change consequences (Gavin & Marshall, 2011). These actions can be regarded as taking a moral position, as environmentalists have highlighted the injustice of climate change caused by "developed" countries impacting most strongly on "developing" nations (Doulton & Brown, 2009). However, the international solutions put forward, such as carbon trading schemes and adaptation measures for countries at risk, have reflected a confidence in technical and economic measures that also financially benefit the richer countries (Gjerstad, 2017). This suggests that the previously urgent dangers that led to the Climate Change Act were being redesignated as manageable risks, preferably with financial benefits (Gillard, 2016).

Also, at the international political level, the signing of the Paris Agreement by 195 countries in December 2015 was regarded as an important moment in climate change efforts (Gjerstad, 2017). However, linguistic research into the document suggests that it conveyed a "sense of bureaucracy" rather than action (Fløttum & Drange, 2017, p. 139). The use of the passive voice and nominalisation were noted as rhetorical devices for avoiding identifying agents in the document, and non-emergency time phrases appeared to counteract the proclaimed urgency of the issue (Fløttum & Drange, 2017). The subsequent presidency and actions of Donald Trump also dampened the aspirations of the Agreement.

This research to date on political language suggests that there are a number of important issues worthy of further exploration. Firstly, the acceptance of anthropogenic climate change and its consequences appears to remain a difficult topic for politicians. Related to this are attitudes towards science and business, which may inform their interpretation of the topic. Secondly, the question of responsibility for the issue of climate change, both in terms of who should take responsibility and who they are responsible to. And finally, the actions — if any — that need to be taken to address climate change and who should be undertaking them. For politicians, this would be expected to be in the form of policy making, but also policy implementation and ongoing support for existing measures.

3. Methodology

There are various sources available for politicians' language, such as manifestos, blogs,

interviews, speeches and parliamentary proceedings. For this research, I excluded written texts and scripted speeches as being aimed at specific targeted audiences, and interviews as focusing on a too narrow range of potential participants. In order to build on Willis's (2017) work on language within climate change policy debates, I used texts from Hansard, the official transcription of parliamentary procedures, which is updated daily and available to the public online (https://hansard.parliament.uk). The Hansard texts I selected reflect a verbatim report of members' words, with only light editing, e.g. for repetitions, before publication.

I chose parliamentary proceedings from the House of Commons debating chamber, during four-week time periods over twelve years. The time periods selected coincided with the United Nations (UN) climate change conferences in November/December each year, when the subject of climate change would be high on the media and public agenda, even if there was not a corresponding piece of legislation being discussed in parliament. The full list of time periods and associated UN conferences can be found in Table A. This resulted in an overall corpus of around 14 million words, containing 2,007 tokens of "climate change".

Looking at these tokens over the years (Table B, Figure 1) indicated a clear downward trend in mentions, from a high in 2006 to a low in 2016. The peak years for mentions coincided with reactions to the Stern Report (2006), the Climate Change Bill (2009) and the Paris Agreement (2015), reflecting major policy developments that happened in these years. The nadir in 2016 corresponds with the pre-occupation in parliament with Brexit; however, the number of mentions remains low in the two following years.

One of the benefits of using corpus analysis is ensuring that all the possible tokens are included, so avoiding picking out a few examples or accidentally overlooking tokens (Grimmer & Stewart, 2013). Using corpus tools also allows identification of frequent words, salient collocations, and patterns that may not be as noticeable within a purely qualitative analysis (Baker & Levon, 2015). The use of particular words and evidence of strong collocations can offer interesting information on how a topic is portrayed. However, a danger of relying too much on frequency is that the information may be too restricted to make meaningful interpretations (Salway, 2017), and the frequency of a word is not always the main determiner of its salience (Touri & Koteyko, 2015). A close reading of concordances is required in order to fully contextualise and interpret the meanings and also to uncover implicit narratives or omissions (Weiss & Wodak, 2002). Therefore, alongside the corpus tools, I required a framework of reference in order to look at issues that were being excluded from the debates.

As a framework for this study, I identified three broad positions taken from work by Urry (2015) on media narratives of climate change: catastrophism, scepticism, and gradualism. These three discourses can be conceptualised in terms of their narrative approach: setting, characters, plot and moral (Nisbet, 2009). Narratives play a strong role in communicating political information and influencing opinion (Fløttum & Gjerstad, 2017), so using these to analyse the language allows for a closer examination of

underpinning attitudes on acceptance, responsibility and action. In this context, the Setting refers to how the world is presented: whether it is fragile or robust, and a dangerous or a safe place. Characters refer to who or what are the main actors: the heroes, villains and victims of the narrative. The Plot indicates what the problem of climate change is defined to be (if any), and the Moral addresses how this problem should be resolved. In political discourse, the Moral will also refer to policy suggestions and solutions.

The three positions:

1) **Catastrophism**
   Setting: the fate of the world is at a tipping point.
   Characters: changes to the climate are the result of human actions; humans need to act urgently to stop and reverse these. Non-human suffering is also important.
   Plot: the world faces dangerous, abrupt and irreversible changes to the environment.
   Moral: business as usual is not possible; radical reforms are needed.

2) **Scepticism**
   Setting: the world is largely unknowable, and changes are natural.
   Characters: humans are central and should make the most of nature for their own benefit.
   Plot: the science is unclear; activists may be part of a conspiracy / have alternative agendas; climate change is a natural process that humans can adapt to.
   Moral: business as usual is the correct course of action.

3) **Gradualism**
   Setting: climate change is affecting the planet in a largely negative way.
   Characters: humans are mainly responsible for the changes to the climate, and therefore well-placed to fix, adapt to, and manage the consequences.
   Plot: continuous positive progress is needed through expert administration.
   Moral: sustainability measures and investment in new technologies will enable a modification and improvement of business as usual.

When climate change first began receiving widespread public attention, the first and second positions were the most dominant, polar stances. The third position can be seen as having some overlap with each of these, as in some ways it grew from them both as a more palatable, less extreme viewpoint. Gradualism accepts the reality of human-made climate change but has a strong preference for avoiding any social upheavals. It therefore aligns most closely with the position identified by Willis (2017) as dominant during the Climate Change Bill debates, and reflects a common, bureaucratic stance expected in post-political systems (Swyngedouw, 2013).

To explore how the language used may express these three discourses, I first identified the most common words used in the discussions. Using the AntConc programme

(Anthony, 2020), I looked at the main collocations that could be found with the 2,007 tokens of "climate change". I searched for five words on either side of the phrase and excluded any personal names or grammatical words. Table C shows the top collocations by frequency, and Table D shows the top collocations based on a probability calculation of how often this word occurs with "climate change" compared to other words in the corpus. Some words can be found in both lists, and using these and my narrative framework as a guide, I selected four key areas to explore further through groups of words: challenges and opportunities; dangers and threats; science and experts; denial and sceptics. I looked for variations and synonyms of words for each of these groups to consider how they were used in relation to setting, characters, plot and moral.

4. Results

4.1. Challenges and opportunities

The largest group of collocations related to challenges and opportunities. The majority of tokens to do with challenge, challenges, and challenging were found early in the corpus, with 86% of them between 2006-2010. The adjective form was only used once, and it referred to climate change targets. The singular and plural noun forms were the most common throughout the corpus (Table E). Around a third of these tokens were part of a list of other issues such as terrorism, economic security, and global inequality. The most common verbs used with challenge were action verbs such as address, confront, deal, meet, respond, and tackle. These were most frequent in the earlier years. In later years, verbs like face, focus, highlight, and identify were more commonly used.

In around half of the tokens, the actor dealing with the challenge was the national government. When the international community was mentioned, it was in reference to the global nature of the issues, different responsibilities, and an opportunity for the UK to establish a leadership role. When these words were used, policy solutions were discussed in terms of potential economic opportunities: creating jobs, developing industries, and showing the rest of the world how to succeed.

There were fewer tokens related to opportunities than challenges. But again, most of them were early in the corpus, particularly in 2006, around the time of the influential Stern Report (Table F). Several of the examples were balanced against another term, such as threat, and some were criticisms of the government referring to missed opportunities.

There were also a few examples of climate change being pitted against other challenges and opportunities. So although most tokens included a positive view that addressing climate change would be beneficial, there were some voices that suggested there would be an unacceptable economic cost, such as this quote from 2007:

> There is an increasing polarisation between engaging the community, maintaining sustainable communities and tackling major challenges such as climate change on

> the one hand, and the promotion of enterprise, employment and wealth on the other. (10-12-2007)

4.2. Dangers and threats

The adjective form "dangerous" was the most common when looking at these words, and it occurred in most years to describe climate change (Table G). The most common verb used with these examples was "avoid", and it was used with half of all the phrases from 2011-2018. For "threat", the noun form was much more common, especially in the earlier years (2006-2007). Again, the threat was climate change itself, and the main victim of that threat was split evenly between the global community and the UK.

The urgency of words related to dangers and threats was also amplified by the use of several adverbs to do with the size and acceleration of the problem. However, this was accompanied by very little discussion of specific UK policy solutions. Instead, there were quite broad comments on promoting renewable energy rather than anything concrete in response to the alarmist language. This suggests that the use of these terms may have been more emotive and rhetorical, rather than reflecting an urgent call for action.

Around 70% of all the tokens in this group were found in discussions that focused on international measures and global policy. They referred mainly to a perceived need for UN or European developments, but also mentioned the role of countries experiencing climate change disasters. Overall, the dangers, threats and related potential solutions were expressed most often as international rather than national concerns, although there was an emphasis on countries working together. In just over half of the examples where a lead actor could be identified, it was the UN or the European Union (EU), and only around 25% of the intended actors were explicitly the UK government.

> Europe has a leading role to play in limiting the damaging effects of dangerous climate change and in leading global action as the world moves to a low-emission, low-carbon economy. (03-12-2009)

However, these tokens were gathered around the time of the UN conference, so an international outlook could be expected. The national role within these examples was mainly in relation to influencing countries around the world to recognise their responsibilities and follow the UK lead. These discussions also often focussed on the financial implications of tackling climate change, with the most common suggestion for the role of the UK being to demonstrate the potential of economic success in addressing the issue.

4.3. Science and experts / Denial and sceptics

Compared to the other groups of words, there were relatively few tokens related to science

(Table H). Of these, the majority expressed strong support for the science on climate change, including several accusing the opposition of rejecting it. Despite this, only one example directly quoted a scientific fact in order to ask a question on policy development.

Closer analysis also revealed an interesting juxtaposition between science and economics. And a similar relationship to economics could also be seen in the contexts of terms to do with denial. One comment from 2006 talked rather disparagingly about scientists who are characterised as too prescriptive, in order to praise a non-scientist — Sir Nicholas Stern (Head of the Government Economic Service) — as offering a more acceptable and reasonable argument:

> Stern does not say, "I am a scientist: I know the answers". He says, "I have looked at all the evidence that is available and have reached the following conclusion". (20-11-2006)

A later comment in 2011 about denial takes this view even further by turning the arguments of denialism around on environmental supporters. This position acknowledges climate change, but argues that economics clearly must come first:

> For those of us who are passionately committed to the green agenda, there are two great threats in these difficult economic times. First, and obviously, there are the climate change deniers, but secondly, and I think even more dangerously at the moment, there are the deficit deniers. There is no greater bunch of deficit-denying opportunists than Opposition Front Benchers, who seem to think that the green economy lives in a vacuum, immune to the economic realities confronting every other sector of the British economy and to the impact that that has on consumer bills. (23-11-2011)

4.4. What was missing?

Alongside these groups of words, and following the work of Willis (2017), I also looked for topics that might be expected to be found in discussions of climate change but were not immediately apparent from the collocation list. There were none or very few tokens for words related to: people, humanity, society, community, and family; biodiversity, plants, and animals; and environmentalism, campaigns, protest, and emergency.

Words related to "human" were mainly found only in relation to lists of other issues such as human trafficking. Within the collocations, "society" was not found, and "community" was only tokened twice. The first reference to community in 2009 referred to the global community meeting in Copenhagen for the UN conference. The second token in 2013 was a reference to local communities, and referred to groups working together to negotiate collective switching of energy prices. In terms of other possible human actors within the narratives, there was one token of "grandchildren" but none for "child(ren)" or

"family".

For non-humans, five tokens of biodiversity were found, with three of these in 2006. There was one token of "plant", referring to power plants. In addition, there was just one token each (in the same sentence) of "plants" and "animal" in 2007, referring to the responsibilities of the Department for Environment, Food and Rural Affairs. There were no tokens of "nature"; however, the four tokens of "natural" revealed a range of attitudes. In 2007, it was used in connection with protecting the natural environment. In 2009, it referred to climate change as being natural rather than the result of human action. Then in 2015-16, it was used in relation to natural disasters and natural resources.

There were no tokens for "environmentalist(s)" and only one token for "campaigner(s)". There were also no tokens for "protest" or related words. One token for "revolution" called for this to take place across government sectors and was the only expression of extreme action that reflects a catastrophism position. This token was in 2006, and the longer concordance line also made reference to the Stern Report as support for radical changes. The reference to "campaigners" was also in 2006, and provided a direct challenge to the government regarding progress on reducing carbon emissions, and also identified the speaker's role within the campaigning movement.

5. Discussion and conclusion

This research builds on existing work on political language and climate change, particularly by showing the trajectory of the issue since the Stern Report and Climate Change Act. The three discourses identified by Urry provided a useful measure, with the subtle development of gradualism being especially noticeable. This discourse is found in the initial enthusiasm for economic and technical solutions, which appeared to unite the parliament in the early period. However, there seems to have been a steady decline in the appetite for action and policy implementation, and consequently, the gradualism position may be regarded as fading away.

The overall omissions and silence are one of the key things that this research found: climate change was not discussed very much in the UK parliament, and less so over time. When it was discussed, it was in a way that excluded some key topics and elevated others. People will generally use the dominant discourse to express themselves (Hajer, 2000), so the collocations which are most common and most rare will reflect this. A failure to include topics related to the environment in such an important political sphere suggests evidence of discursive erasure (Stibbe, 2014). It is also worth noting that sceptics often employ silence and avoid clear discussion on environmental topics in the media as a tactic to defuse an issue (Brüggemann & Engesser, 2017).

The language of economics to justify actions, and a confidence in technical solutions, appeared to dominate the discourse overall. This confirms the earlier work of Willis (2017) and also supports a gradualism interpretation of the main narrative. Although there were several examples of expressions of urgency and danger, these were often strongest when

talking about other countries or related to international actions. This suggests that the plot of climate change is taking place elsewhere, rather than being a present urgent issue to be addressed nationally. Correspondingly, the moral of the story appears to be that the UK parliament's role is investment in technical solutions for distant others, as a display of altruism and leadership, and for national economic benefit.

The suggestion of the UK government as a saviour for other nations, and leading the way for other countries, indicates that they are the 'hero' of the story. However, when considering other actors in the narratives, it is also informative to note that the challenges and opportunities of climate change are most frequently expressed in terms of national industry and business. This is true in both positive and negative situations, suggesting that the main actors within the story of climate change are economic interests, rather than people, communities or non-humans.

By focusing on which course of action is the most economically beneficial to solve the problem, the debates largely avoided considering causes, any other non-economic consequences, and the existential urgency of the situation. This suggests that the issue of climate change became politicised, in the sense of being regarded as one managerial issue amongst others to be weighed and balanced. The environment is therefore seen as one social good, competing against another social good: the free market (Nyberg & Wright, 2013). Consequently, any attempt to de-politicise the issue is open to criticism (Maeseele & Pepermans, 2016), and neutrality — e.g. from scientific facts — can be reinterpreted as representing an autocratic, inflexible and extreme catastrophism position. In contrast, the scepticism discourse is unaffected; policy decisions need not be based on any external 'belief' in the causes and consequences of climate change, as these are minor and irrelevant factors in a larger (economic) reality.

The most common collocations with "climate change" related to challenges and opportunities, rather than threats, which again points towards the gradualism position. However, these tokens were initially more likely to be found with action verbs, and in the later years, discussion was more about identification. Along with the overall downward trend, this suggests there may have been some cooling-down of the initial optimism of the gradualism narrative, or reflect problems of the practical implementation of policy (Lockwood, 2013). In the earlier years especially, the national role, when mentioned, was to show global leadership through turning tackling climate change into an economic success story. But following a global recession, this view was increasingly challenged, with national economic growth directly pitted against it.

If climate change is regarded as the problem and responsibility of others, and short-term, national, economic success is given priority, gradualism appears to dissolve, leaving the two poles of catastrophism and scepticism. But accepting the positioning of climate change as an economic issue may block the arguments of environmentalists and scientists, who represent a catastrophism position. Along with the lack of acknowledgement of scientific evidence, the omission of social impact and non-human species, and the overall decline in climate change as a topic of debate, it appears that scepticism may have been

quietly gaining the upper hand.

Despite this apparent note of pessimism, the data in this study only goes to 2018 and does not cover the whole time frame, instead providing snapshots from each year. In 2019, the UK government held a general election at the time of the UN climate change conference, and in 2020 the conference was postponed, therefore data for this study was not gathered. But during this time, the work of activists around the world has renewed the public and media focus on the climate emergency. An encouraging overview of yearly Hansard data (Figure 2) suggests that the discussions re-ignited in 2019, reaching similar levels to 2006.

The selection of the term "climate change" for corpus searching was important due to the increasingly politicised understanding of the term. However, when searching for one term over a long time period, it is important to note that concepts can and do semantically change. In relation to climate change, it may be that the politically charged nature of the concept means that it is already beginning to be replaced by other terminology. During my initial research into the topic, I noted that the previous metaphorical phrase of "global warming" had decreased significantly in popularity, therefore it may be that the phrase "climate change" is also now in a period of decline. Future research may illuminate how a new focus on "climate emergency" may have begun to re-form and restructure the discourses in the UK parliament.

Tables and figures

Table A: UN conference details and corresponding dates for analysis

UN conference	Conference dates	Dates for corpus analysis
Nairobi, Kenya	06.11.06 – 17.11.06	30.10.06 – 24.11.06
Bali, Indonesia	03.12.07 – 17.12.07	26.11.07 – 24.12.07
Poznan, Poland	01.12.08 – 12.12.08	24.11.08 – 19.12.08
Copenhagen, Denmark	07.12.09 – 18.12.09	30.11.09 – 25.12.09
Cancun, Mexico	28.11.10 – 10.12.10	21.11.10 – 17.12.10
Durban, South Africa	28.11.11 – 09.12.11	21.11.11 – 16.12.11
Doha, Qatar	26.11.12 – 07.12.12	19.11.12 – 14.12.12
Warsaw, Poland	11.11.13 – 23.11.13	04.11.13 – 30.11.13
Lima, Peru	01.12.14 – 12.12.14	24.11.14 – 19.12.14
Paris, France	30.11.15 – 12.12.15	23.11.15 – 19.12.15
Marrakech, Morocco	07.11.16 – 18.11.16	31.10.16 – 25.11.16
Bonn, Germany	06.11.17 – 18.11.17	30.10.17 – 23.11.17
Katowice, Poland	02.12.18 – 15.12.18	23.11.18 – 20.12.18

Table B: Total word counts and tokens of "climate change" by year

Year	Total word count	Tokens of "climate change"
2006	847,945	390
2007	1,012,193	201
2008	952,880	163
2009	1,100,212	296
2010	1,152,230	119
2011	1,153,834	159
2012	1,138,028	80
2013	1,099,243	123
2014	1,099,343	85
2015	1,239,276	275
2016	1,074,635	31
2017	1,115,942	42
2018	1,197,470	43
Total	**14,183,231**	**2,007**

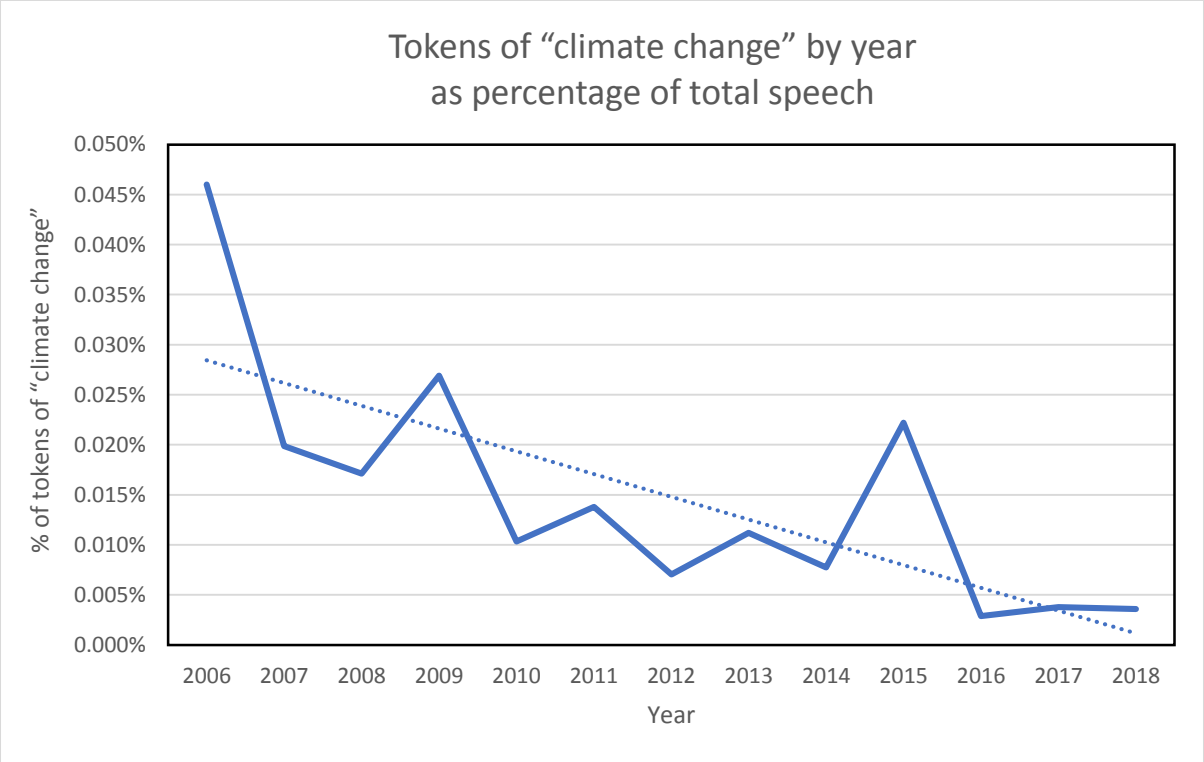

Figure 1: Overall tokens of "climate change" by year

Table C: Top collocations with "climate change" by frequency

Collocate	Freq	Stat
tackle	61	7.70206
dangerous	20	7.32829
challenge	19	5.91212
challenges	18	6.26623
threat	17	5.86111
risk	15	4.59449
address	11	4.70386
combat	8	6.77076
fight	7	5.95956
avoid	7	5.6958
opportunity	7	2.83051

Table D: Top collocations with "climate change" by probability calculation

Collocate	Freq	Stat
deniers	4	10.99958
tackle	61	7.70206
dangerous	20	7.32829
scientists	4	7.00862
combat	8	6.77076
challenges	18	6.26623
dangers	3	6.04228
battle	6	5.96983
fight	7	5.95956
challenge	19	5.91212
threat	17	5.86111

Table E: Concordance lines of *challenge / challenges* AND *climate change*

we are serious about meeting our energy supply **challenges** and addressing **climate change**, we will have to
and greater ability to contribute to tackling the **climate change challenge** must do so. That means that
future, as well as for renewables and nuclear. **Climate change** is a **challenge**, but it also produces
more. Finally, Sir Nicholas makes it clear that **climate change** is not an insoluble **challenge**.
Britain that is no less pressing than the **challenge** of **climate change**,
real difference as we try to meet the **climate change challenge**.
In meeting the **climate change challenge**, too much emphasis is put on
have a track record of doing something about **climate change**. We should **challenge** it,
dealing with the global **challenge** of **climate change**.
action that we are taking to address the **challenges** of **climate change**.
be fit for purpose as we confront the **challenges** of **climate change**.
wish to make some observations on the major **challenges** we face in tackling **climate change** in the
a challenge from terrorism, but there are also **challenges** from global inequalities, **climate change** and nuclear
attention in the world today, not least the **challenges** of nuclear proliferation and **climate change**, which the
enough if we are going to meet our **climate change challenge**.
mentioned, and the need to respond to the **challenges** of **climate change**.
us to meet and to master the unprecedented **challenges** of the 21st century: **climate change**, the economic
sustainable communities and tackling major **challenges** such as **climate change** on the one hand,
face a world in which more and more **challenges** have an international dimension. **Climate change**, terrorism
year when oil prices have been volatile, the **climate change** and energy **challenge** can be met only
dealing with both the economic crisis and the **climate change challenge**.
Union's role in addressing it; the **challenge** of **climate change** and the need for European
Secretary talked briefly about one of the great **challenges** facing the world – **climate change**.
The European summit focused on two global **challenges** – economic recovery and **climate change**.
As we are becoming more aware of the **challenge** of **climate change**, we are also seeing the
is right to highlight the particular **challenges** relating to **climate change** in Bangladesh
want the European Union to focus on the **challenges** of global poverty and **climate change**.
a panacea or a silver bullet for the **climate change challenge** facing us all
might need in the future to address the **challenges** of **climate change** and population growth.
people with families to look after. Apart from **climate change**, perhaps our biggest **challenge** for the future
play their part in the effort to tackle **climate change**. That is a difficult **challenge**.

I believe that the **challenge** that faces mankind is **climate change**, and I
unfinished business of Copenhagen. **Climate change** remains the biggest global **challenge** to humankind
problem is not the Met Office but the **challenge** of **climate change**. There is a micro-climatic
does the hon. Lady agree that, with the **challenge** of **climate change** and the importance of reducing
Programme confirmed some five years ago. The **challenge** of **climate change** makes recognition of that duty
correctly identifies food security and **climate change** as the two key **challenges** that agriculture
very vulnerable small island states for whom **climate change** is literally an existential **challenge**.
how unfair the whole structure is. Given the **challenges** of **climate change** and the
between 75% and 90%, while the **Climate Change** Act states 80%. A fair **challenge** would be
When Stern warned us about the **challenges** of **climate change**, he told us to make
Given the **challenges** of adapting to **climate change**, how will the
Climate change is the biggest **challenge** that we face

Table F: Concordance lines of *opportunity / opportunities* AND *climate change*

is bad for the environment and bad for **climate change** because the **opportunity** cost of spending the
indeed. Will the Secretary of State use the **opportunity** of the **Climate Change** Bill to give local
Government have got it. They have an unrivalled **opportunity** on **climate change**. There is now overwhelming
on this important issue. The need to combat **climate change** presents enormous **opportunities**, as well as challenges.
say about shortly, and, importantly, he said that **climate change** presents **opportunities** as well as challenges
thorough analysis of both the dangers and the **opportunities** presented by **climate change**. The report is an
it is a microcosm of the threats and **opportunities** presented by international **climate change**. It is a
which is another example of the big market **opportunities** available in tackling **climate change** and moving towards
The summit was a wasted **opportunity** to defeat **climate change**. All those of us
sees the start of the UN conference on **climate change**, an historic **opportunity** for the reaching of
need help to reduce their own emissions. Tackling **climate change** will bring new **opportunities** for new
given that the previous Government's **Climate Change** Act 2008 gives us an **opportunity** to take
aerospace and other existing industries, but at **climate change** as another **opportunity**. Engineering skills could be
to the Secretary of State for Energy and **Climate Change**, so the immediate **opportunity** to debate that

Table G: Concordance lines of *dangerous* AND *climate change*

committed those countries to seek to avoid **dangerous climate change**. It is important that we say
when it is essential to our fight against **dangerous climate change**. The emissions that are saved by
on with the job in hand – preventing **dangerous climate change**, adapting to the change that is
to help us tackle the increasing threat of **dangerous climate change**. The sea provides us with more
the pathway envisaged in the UK's Climate Change Bill, **dangerous climate change** would be inevitable
would still be left with the threat of **dangerous climate change** because of the rising emissions from
time, to make a contribution to ensuring that **dangerous climate change** does not in the end overwhelm
collective agreement to protect the world from **dangerous climate change** since the Kyoto protocol was signed
see the impact that **dangerous climate change** will have on our countries. The
and energy package. If we are to avoid **dangerous climate change**, it is vital that the European
to play in limiting the damaging effects of **dangerous climate change** and in leading global action as
clean energy for the future and to tackle **dangerous climate change**. Our vision is of a thriving
to within 2°, beneath the level that would create **dangerous climate change**. I have had discussions not only
means that we are on course for exceedingly **dangerous climate change**, so what will he do to
the action we need to take to prevent **dangerous climate change**. The gap is too large and
The best strategy to avoid **dangerous climate change** must be agreeing a new global
and resilient global economy which can also avoid **dangerous climate change**. But the time for decision is
world will indeed "lock in" the risk of **dangerous climate change**. More positively, they write: "What is
we are to have a hope of avoiding **dangerous climate change**. We need a global transition to 100%

Table H: Concordance lines of *science / scientific / scientist(s)* AND *climate change*

come a long way since then. Once the **science** of **climate change** is accepted, it is overwhelming,
in which Stern assesses the available **scientific** evidence about **climate change**.
He attacked **scientists** by saying that **climate change** was a hoax
All those organisations are clear that the **science** is unambiguous – that **climate change** is real
that is driven in large part by the science of **climate change**. It is important to take
increasingly believes that the established **science** which attributes **climate change** to manmade activities is
a counter-revolution in the **scientific** and political consensus regarding **climate change**.
The **science** is not from politicians, but from **scientists**: the Intergovernmental Panel on **Climate Change**
that a cold spell in Britain disproves the **science** of **climate change** is something that

pitch for his ability to offer leadership on **climate change**, highlighting the increasingly stark **science** and the
Analysis by **climate change scientists** of pledges made by Governments at
the warnings of Britain's leading climate **scientists** regarding the impact of **climate change**; supports the
argue the loudest that people should accept the **scientific** basis for **climate change** refuse to have a

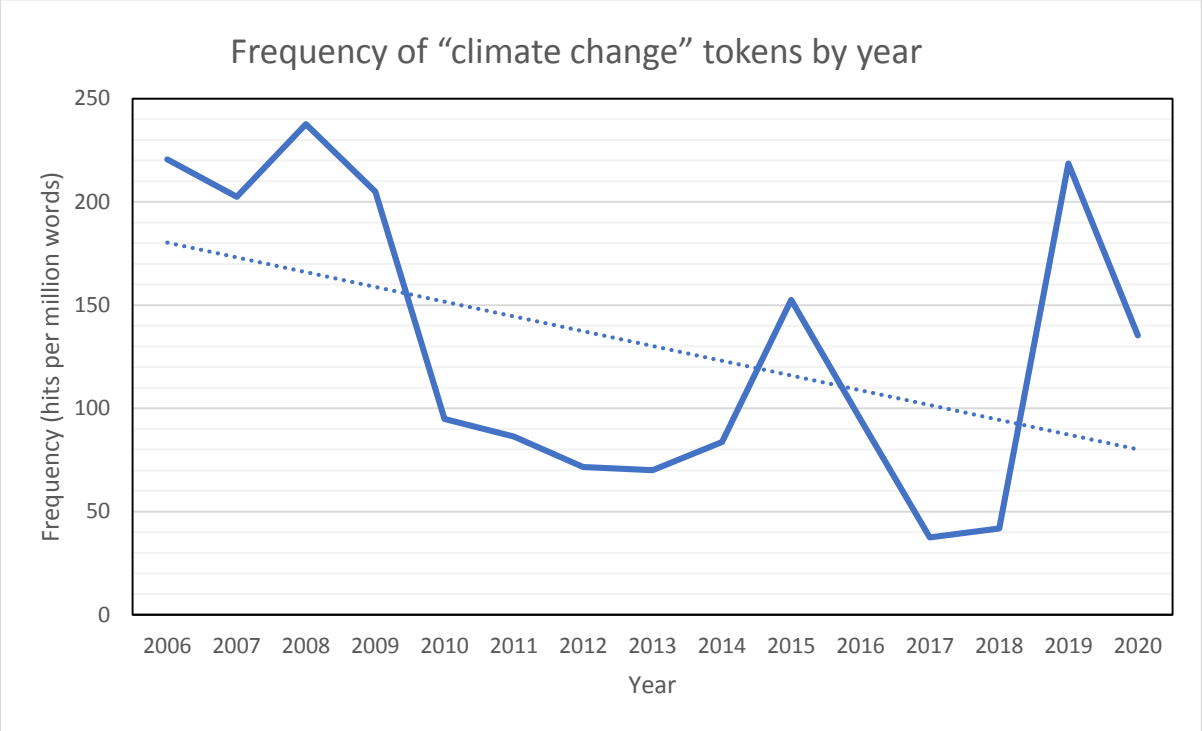

Figure 2: Overview of "climate change" in Hansard 2006-2020 (full year)

Generated from: Hansard at Huddersfield (2021). "Climate Change, 2006-2020" [Figure]. University of Huddersfield. Available from: https://hansard.hud.ac.uk.

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