

Respectus Philologicus 2023, no. 43 (48), pp. 36–48 eISSN 2335-2388 DOI: http://dx.doi.org/10.15388/RESPECTUS.2023.43.48.106

Construction of Agency within Climate Change Framing in Media Discourse: a Corpus-Based Study

Natalie Kramar

National Academy of Sciences of Ukraine
Research and Educational Center of Foreign Languages
4 Triokhsviatytelska St., 01001 Kyiv, Ukraine
Email: kra_nat@ukr.net
ORCID iD: https://orcid.org/0000-0001-5767-9200
Research interests: discourse studies, cognitive linguistics, rhetoric, English for academic purposes

Abstract. The study addresses the role of linguistic agency in framing climate change in media discourse based on the corpus of 75 articles from leading British and American news outlets. We have used corpus manager AntConc to analyse the linguistic context of the phrase *climate change* and alternative terms (*climate crisis*, *climate emergency*, etc.) when positioned as an agent vs a recipient of the process. Both metaphorical and non-metaphorical framing patterns have been identified, with the discussion of their broad social implications. We have revealed that climate change is routinely represented as a contributor towards negative situations of different kinds but rarely as a direct and exclusive cause. This may divert the readership's attention from the urgency of the problem, as its salience is not underscored enough. The most important finding is that climate change is frequently associated with humanlike agency, presented as an evil-doer or an enemy that must be fought. We argue that this framing is problematic as it backgrounds humans' responsibility for causing and exacerbating climate change.

Keywords: climate change; framing; agency; media discourse; metaphor.

Introduction

Climate change is undoubtedly one of the biggest challenges the world is facing today. The legislative frameworks developed for its solution still need to be revised and more promising despite strengthening international efforts (Rossa-Roccor, Giang, Kershaw, 2021). Over the last decade, the climate change debate has become tense, with scientists trying to persuade fervent climate change deniers and the so-called "climate inactivists" that solutions must be sought promptly. However, communicating climate change to a broad audience has proven incredibly difficult because, from a psychological viewpoint, this issue is too abstract and lies beyond most people's direct experience and life horizons

(Moser, 2010). How climate change is covered in the media is crucial as this is the primary source shaping the average citizen's opinion on this complex subject. The fact-centred communication of climate change is not likely to succeed (Badullovich et al., 2020). Hence, journalists resort to more descriptive ways of representing, or "framing", the issue to facilitate public comprehension.

Back in 2010, the world-renowned cognitive linguist George Lakoff outlined the fundamental cognitive and communicative problems in framing the climate change discourse. He noted that instead of assuaged terms *climate change* and *global warming*, a more alarming term *climate crisis* should be used because it conveys the scale of the problem more clearly. It looks like his words were heeded as nine years later, one of the leading news outlets – *The Guardian* – updated its style guide to favour *climate emergency/crisis/breakdown* over *climate change* and *global heating* over *global warming* (Carrington, 2019). Afterwards, these drastic terms were also widely embraced by governmental and public organisations, educational institutions and social media platforms (Feldman, Hart, 2021). Climate scientists also tend to resort to the term *climate emergency* to underline the gravity of the situation, as best exemplified by the "World scientists' warning of a climate emergency" (Ripple et al., 2019).

2021 was regarded in the media as a "make or break year" for climate due to the UN Climate Change Conference (COP26), held from October 31 to November 12, where participating countries revisited their climate pledges made within the frames of the 2015 Paris Agreement. Moreover, in 2021 the Intergovernmental Panel on Climate Change issued the sixth Assessment Report (IPCC, 2021), which contained a stark warning about the exceeding rate of global warming today and a reference to the unequivocal role of human activity in this process. Consequently, climate change became the limelight of public attention and received extensive media coverage. Given the critical importance of the news media in affecting the citizens' attitude toward this problem, the purpose of our research was to analyse the construction of linguistic agency in the framing of climate change across popular Anglophone media in the wake of the IPCC report publication and COP26, with the application of the corpus approach. Moreover, we intended to explore how the wide range of recently-accepted alternative terms for *climate change* influenced the representation of causal relations and responsibilities of the actors in this context, with the discussion of tightly interwoven ideological underpinnings.

1. Literature review

The concept of framing revolves around the choice of interpretation of a given fact. No matter how significant it is, any situation can be interpreted – or "framed" – in various perspectives, with some features inevitably being foregrounded and others backgrounded in relation to others. In one of the most comprehensive definitions, "to frame" means

to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described (Entman, 1993, p. 51).

Framing is thus tightly connected to story-telling as the process whereby people organise the available data and make sense of reality at large. Even the most objective information cannot be unframed, though interpreters may not be aware of their use of framing (Nisbet, 2009). The sociologist Erving Goffman first studied framing in his book *Frame Analysis: An Essay on the Organization of Experience* (1974) in the context of ethnographic research. It was developed further in the work of cognitive psychologists Amos Tversky and Daniel Kahneman (1981), who demonstrated that decision-making is significantly dependent on the way the options are presented to us (the so-called "framing effect"). Frame semantics, developed by Charles Fillmore (Fillmore, 1977), also contributed to framing theory to a certain extent. The scholar emphasised that frames could reflect different perspectives on events, e.g. the verbs *sell* and *pay* show different aspects of the same situation. This facet of frames received its more detailed elaboration in the theory of framing.

Nowadays, framing is often applied in media linguistics to analyse how different wording is used to shape public opinion on political and social issues. The type of framing that has recently received much attention is figurative and, more specifically, metaphorical. According to Burgers, Konijn and Steen (2016), figurative language (including metaphors, hyperbole and irony) can perform the functions typically associated with framings, such as foregrounding a particular definition, cause, evaluation or solution. Metaphorical framing implies mapping the characteristics of one concept (source domain) in terms of another (target domain). It is grounded in the conceptual metaphor theory (Lakoff, Johnson, 1980), which views metaphors as fundamental to human reasoning. Metaphorical framing has been most extensively studied as a means of persuasion in the context of political discourse (Boeynaems et al., 2017).

Framing is of crucial importance when it comes to issues of science and technology, where lay people may not be knowledgeable enough and thus have to rely heavily on media representation. One such issue is climate change. The framing of climate change in the media has been studied from various perspectives. The predominant approach is to view frames broadly as recurrent themes in discussing an issue. The frames that have been most commonly identified in the climate change debate are public health (Badullovich et al., 2020; Nisbet, 2009), scientific uncertainty (Shehata, Hopmann, 2012; Weathers, Kendall, 2015), economic consequences (Brand, Brunnengräber, 2012; Nisbet, 2009; Shehata, Hopmann, 2012), morality and ethics (Nisbet, 2009; Weathers and Kendall, 2015), transformation (Brand, Brunnengräber, 2012). Criticising the lack of consistency in these approaches, Moernaut, Mast and Pauwels (2018) put forth the hegemonic system of frames incorporating the concept of ideology and consisting of three interacting framing levels: master frames (wide notions about how the world should be), generic substance frames (more particular notions helping to structure concerns), and subframes (largely variable ideas). The authors distinguish five generic substance frames – "cycles of nature", "environmental justice", "economic challenge", "human rights" and "inscrutable are the ways of nature" - and ten subframes, which promote either anthropocentric or biocentric ideology (anthropocentric ideology vs transformation ideology). Another strand of research (though very limited so far) has focused on the metaphorical framing of climate change, identifying the common metaphors of "war" and "race" in its discussion (Flusberg, Matlock, Thibodeau, 2017).

Linguists have also explored various terminological approaches in climate change communication. In their recent psycholinguistic analysis of the effects of the increasingly used terms *climate emergency* and *climate crisis* on the reader's perception of the news, Feldman and Hart (2021) found that the climate change engagement of the audience did not correlate with the terminology of the news stories. At the same time, they pointed out that, compared to *climate change*, the term *climate emergency* tended to elicit less trust from the readers. This might suggest that stronger phrasing has a disempowering effect on the public rather than stimulating it to action. However, more research is needed to confirm these results.

Thus, framing climate change has been extensively studied recently, focusing on key topical patterns and terminology. Still, very little attention has been given to the role of agency in this process. The classical definition of the agency was provided by Alessandro Duranti (2005, p. 453):

the property of those entities (i) that have some degree of control over their own behavior, (ii) whose actions in the world affect other entities' (and sometimes their own), and (iii) whose actions are the object of evaluation (e.g. in terms of their responsibility for a given outcome).

While differences exist across various languages, in English, non-agentive descriptions are often perceived as evasive (a classic example is Reagan's "mistakes were made"), thus affecting to what extent we blame and punish others for accidental and intentional events (Fausey et al., 2010). It is important that agency can be mitigated by employing grammatical strategies and alternative framings, e.g. foregrounding versus backgrounding a causative connection (Duranti, 2005).

In terms of grammar, the agent is often represented by the subject. However, the two categories are quite distinct: the agent is not determined by syntactical relationship but rather by the notional relationship between the verb and other parts of the sentence. The difference is most evident in passive constructions where agents are represented with objects following the preposition "by" (e.g. "The window was broken by Jim"). The grammatical concept opposed to the agent is the recipient (also known as patient or undergoer), i.e. the participant of the situation at whom the action is targeted.

The study mentioned above by Moernaut, Mast and Pauwels (2018) attaches much importance to the agency as part and parcel of climate change framing. Thus, in their system, the frame "cycles of nature" attaches causal responsibility to humans, which is marked by the use of "inclusive we"; the frame "environmental justice" lays the blame for climate change upon elites; the frame "inscrutable are the ways of nature" poses the natural system as the sole responsible agent, etc. Moreover, the researchers blend the rhetorical devices (metaphors, contrast, juxtaposition, repetition of certain words) as pivotal markers of agency in this context. However, they only focused on Belgian news resources and

applied a descriptive methodology. Therefore, the issue of agency construction in climate change framing deserves more in-depth linguistic analysis at present, especially in light of significant progress in the climate debate in 2021.

2. Methodology and data

For the aim of the research, we compiled a corpus of 75 articles (news reports and opinion pieces) from the leading British (BBC, The Guardian) and American (CNN, CNBC, HuffPost) news outlets with extensive coverage of climate news. These resources are either centrist (BBC) or left-leaning (the rest). We have not included any right-leaning outlets since conservative ideology has been shown to correlate with lower concern about climate change (Poortinga et al., 2019). The time frame of the selected materials is September to November 2021, when the IPCC report and COP26 were widely covered in the media. All of these articles contain the phrase climate change or alternative terms that have come to be used recently in line with the shift towards more drastic formulations in this domain (namely, climate emergency, climate crisis, climate breakdown, climate disruption, climate disaster, climate catastrophe). Henceforth we will use the shorthand climate change and ATs (alternative terms) to refer to these lexical items in the context of our sample. The sample comprises over 60 000 words in total.

To analyse the collected data, we used a combination of manual and automated techniques. The freeware corpus manager AntConc was utilised to analyse the frequency of various terms for climate change in the sample and identify their collocates in pre- and post-position to account for the representation of climate change as both an agent and a recipient of the process. The former is predominantly represented with the grammatical subject of the sentence, while the latter is commonly represented with the object. However, we also paid attention to passive constructions (e.g. is threatened by climate crisis), where the agent-recipient relationship is inverted, and to adjectivisation (e.g. climate-fueled), where the agent is represented indirectly. This enabled us to distinguish the recurrent framing patterns, which were further analysed manually with regard to causal relationships, foregrounding and profiling, and metaphorical mappings featured in them.

3. Results and discussion

The first step in our analysis of data was to identify key collocations with *climate* in the sample. Quite predictably, the most frequent collocation was *climate change* (313 occurrences), followed by *climate crisis* (103 occurrences). The phrase *climate crisis* was predominantly featured in *The Guardian* articles (which is understandable concerning its explicit editorial policy mentioned in the introduction). However, it was also occasionally featured in other news outlets, such as *HuffPost* and *BBC* (2 occurrences in each). The terms *climate emergency* and *climate breakdown* were restricted solely to *The Guardian* (15 and 8 occurrences, respectively). *Climate breakdown* is allegedly a more metaphorical term, which was first introduced by American scientist and author Peter Kalmus (2018)

in his Twitter account, where he wrote: "Stop saying 'climate change' and start saying 'climate breakdown'. Because everything is breaking down." Since then, the term has been included in the Cambridge Dictionary and widely used on climate-focused websites, but much less so in the news media. Another way to refer to this situation identified in the sample was *climate catastrophe*, featured 5 times in *The Guardian*, once in CNBC and once in BBC. Incidentally, *climate catastrophe*, climate crisis, and climate emergency were added to the Oxford English Dictionary in October 2021, underscoring the broad acceptance of such phrasing in modern English. Next, the variant *climate disaster* was also identified in 2 cases (*The Guardian* and *BBC*). Interestingly, though, the same phrase is used in the sample 3 times in the plural, but with a different meaning – as extreme weather conditions related to climate change. For example:

(1) The dangers of extreme heat are evident from the **climate disasters** of recent months: This summer, a record-breaking heatwave in the Pacific Northwest killed hundreds of people and left agriculture workers, many of them undocumented, suffering through 100+ degree days to get food on people's tables. (HuffPost, September 2)

Semantic ambiguity is also observed in the use of *climate disruption*: while this term was first suggested back in 2014 by then White House science adviser John Holdren as an alternative to *climate change* (Malakoff, 2014), within our sample, it is used with the narrower meaning, in the context of its influence on the Christmas tree market (*CNBC*, November 16).

Thus, even from our relatively limited sample, it is evident that climate change terminology shows a great extent of variability and instability. The policies are changing, and new terms are being suggested by public figures and scientists, which may or not gain enough traction on news media and social media. However, we can see that the term *climate change* is still leading in terms of its summative use across various news resources.

All in all, we have identified 447 cases of the use of various terms for *climate change* in our sample. As the next stage of our analysis, we examined their linguistic valency with regard to various functions they perform in the sentence, particularly as an agent (mainly represented by the subject of the sentence) and a recipient (mainly represented as an object of the sentence).

3.1 Climate change as the agent

Overall, *climate change* and ATs function as the subject of a sentence in 58 cases out of 447 (i.e. in 13% of all occurrences). Besides, in 13 cases, they are positioned as agents in passive constructions (e.g. *driven by climate change, threatened by climate breakdown*). Having analysed the lexical units that are most often combined with our target terms in these positions, we can distinguish several key patterns in the representation of the climate change agency.

The prevalent tendency (around 45% of the total) is for climate change to be presented as an accelerator or a contributor towards other destructive processes, either natural or socio-political ones. The key verbs marking this pattern are to accelerate, to intensify, to make worse, to contribute, to exacerbate, to be one of the (contributing) factors, to be an important driving force behind, to make an impact, to affect, for example:

- (2) Climate change will likely **accelerate** the loss of biodiversity leading to more extinctions of plants and animals [...] (CNBC, November 30).
- (3) Climate change is already **exacerbating** many injustices, but the intergenerational injustice of climate change is particularly stark [...] (The Guardian, Sp. 27).
- (4) Climate change is already **contributing** to conflict in many parts of the world [...] (The Guardian, Sp. 24).

In example (2), climate change is presented as one of the factors that contribute to biodiversity loss, while in examples (3) and (4), it is shown to worsen social inequalities. It is also noteworthy that even imminently non-destructive physical actions (such as heating) are occasionally attributed to climate change in our sample, e.g. *the climate crisis heats* up the planet's northern ice cap (The Guardian, November 30).

One of the notable markers of this pattern is the combination of *climate change* with the verb *to fuel*: in one of the articles, the intensity of California wildfires is reported to be "fueled by climate change" (*HuffPost*, Sp. 18). In another article we come across the adjective *climate change-fueled* used in relation to New York City megastorms (*HuffPost*, Sp. 2). Beyond our sample, this kind of adjectivization has become common in the media, though in its shorter form – *climate-fueled* or, alternatively, *climate-driven*. All the wordings mentioned above represent climate change as a force that can make things worse alongside others. In terms of Langacker's construal theory (Langacker, 2008), these expressions necessarily profile a complex system of multiple other issues involved without highlighting climate change as the most important one.

In far fewer cases (only 5), climate change is presented as the sole cause of some pernicious events, particularly natural disasters, with the key lexical markers being *to cause* and *to bring*, e.g.:

- (5) [...] they become more vulnerable to the droughts and fires caused by climate breakdown (The Guardian, Sp. 29).
- (6) Climate change is causing once-mighty rivers to dry up and temperatures to rise [...] (BBC, October 31).

We believe it is important to distinguish between these two ways of framing the agency of climate change either as *the* cause or *a* cause of some events (despite their similarity), as the former is more straightforward and can potentially be more effective in swaying the public opinion on the seriousness of this issue.

Another framing pattern – which spurs most interest from the psychological viewpoint – is the personification of climate change, whereby it is portrayed as an evildoer and attributed with the humanlike agency of destructive nature. The most common verbs associated with this framing are to hit, to devastate, to destroy, and to threaten (15 occurrences). One remarkable example is the headline of a CNBC article (November 24), "How climate change is hitting the ingredients in your pies", which explicates the influence of climate change impacts (fires, droughts and other extreme weather events) on the cost of ingredients in a Thanksgiving pie. Some of the most dramatic cases attribute climate change with the potential for massive-scale ruinous actions such as "wiping out" and "sweeping" with regard to agricultural issues:

- (8) Climate change could **wipe out** half of the land used to grow coffee worldwide by 2050, studies show (BBC, Sp. 27).
- (9) Scientists say the climate emergency could **sweep** traditional agricultural crops from the Mediterranean [...] (The Guardian, October 4).

From the perspective of cognitive linguistics, personification is a type of ontological metaphor, i.e. a metaphor where a concrete image is projected onto an abstract entity (Lakoff, Johnson, 1980). Lakoff and Johnson (1980, p. 33) emphasise that personification "differs in terms of the aspects of people that are picked out". In this case, the foreground features are destructive force (to destroy, to sweep) and evil intentions (to threaten). Thus, climate change is viewed not as any person but as a specific kind of person – furious and malicious. Another point made by cognitive linguists is that personification should be distinguished from mere agency, where no particular agent is selected for the projection (Lakoff, Turner, 1989, p. 38). The latter situation correlates with the previously discussed pattern, where climate change is attributed to actions such as "causing" or "accelerating" some events, etc. From the perspective of Lakoff and Turner (1989), it is just an instantiation of the EVENTS ARE ACTIONS metaphor. Contrariwise, the latter pattern ("climate change is an evil-doer") comprises personification precisely because of the specific type of agent identified here.

The common presence of the representation of climate change as an evil-doer in the media is possibly justified by the use of this metaphor in speeches and announcements by key political figures pursuing rhetorical purposes. Thus, speaking at the COP26 Conference, President Biden remarked that climate change is "ravaging the world" and "destroying people's lives and livelihoods" (White House, 2021). Hence, politicians may set the tone for the media to cast this issue as having a destructive agency, going to great lengths to depict its devastating force.

3.2 Climate change as the recipient

At the next stage of our study, we analysed the patterns of framing of climate change when positioned as the recipient of an action, i.e. when related terms function as objects in the sentence. For this purpose, we focused on the verbs preceding the search items *climate change* and ATs in our sample using the concordance tool in AntConc.

As a result, we could distinguish two patterns in framing climate change as the recipient. The most common and recognizable one is "climate change is a problem", marked by relatively neutral verbs to tackle, to solve, to address, to deal with, to respond to, to cope with (26 occurrences overall). Of them, the most frequent item is to tackle (15 cases), which conveys both the difficulty of the problem at hand and the eagerness of those working on it, e.g.:

(10) Cop26 is the biggest diplomatic event on UK soil since the second world war, and is a crunch moment for attempts to tackle the climate crisis, because scientists say there is just a decade left in which to take crucial action to prevent more than 1.5C of warming. (The Guardian, October 30)

The second pattern, roughly as widely represented as the previous one (23 cases), is marked with more emotionally-laden verbs with the semantics of fight: to fight (against), to combat, to confront, to counter, to make a stand, to withstand. Notably, the agency in "fighting" climate change can be applied both to individual people (e.g. she devoted her time to fighting the climate crisis) and to entire countries and governments, e.g.:

(11) Australia's prime minister on Tuesday announced plans to encourage people to buy electric vehicles weeks after his government was accused at a UN conference in Scotland of being a laggard in fighting climate change. (CNBC, November 9)

In many cases, these lexical units are not used in isolation but are extended with other elements from the "war" frame, thus creating a powerful rhetorical construction. For example, one of the articles argues that the US government should focus on fighting climate change instead of fighting enemies overseas in its costly military interference, thus counterposing the two kinds of "wars":

(12) Instead of wasting trillions of dollars and millions of lives fighting a war on terror, the US should be mobilizing to combat climate change. (The Guardian, November 7)

Another article claims that pension money should be actively invested in solving the climate crisis, comparing them to a "weapon" in the "battle" against it:

(13) [...] pensions [...] can be a huge and radical agent for change: a powerful weapon in our armoury for the battle against the climate crisis. (The Guardian, Sp. 27)

In these examples, the words *mobilize*, *battle*, *weapon*, *armoury* further serve to construct an extended analogy of climate change solution as war, evoking highly visual images of heated confrontation and thus eliciting an emotional response from the readers.

The "war" metaphor in the representation of climate issues is well documented and has received some attention from researchers. Flusberg, Matlock and Thibodeau (2017) distinguished two common metaphors for climate change in public discourse – the war frame and the race frame – and carried out a psycholinguistic analysis of their effectiveness, along with the non-metaphorical representation of climate change as an issue. They revealed that the war metaphor was the most effective in conveying the sense of urgency of the problem, as compared to the other two linguistic modes. However, from the psychological viewpoint, this framing is somewhat problematic as climate change is not a rational agent and was not created by itself. It is the direct result of human actions since the beginning of the industrial revolution. We are all party to it, in contrast to drugs and terror problems, whose solution is also often portrayed in terms of war. As aptly noted by Atanasova and Koteyko (2015), "Making an abstract thing called "climate change" the enemy makes it hard to see that the enemy is ourselves and our behaviour."

Even though overwhelming evidence points to human activity as the core cause of global warming and resulting climate change, human agency in this matter is only occasionally featured in our sample. We have identified only one case when climate change is directly described as "human-made" (*The Guardian*, October 17), apart from several references to the 2021 IPCC report, which takes a clear stand on this issue. The prevailing tendency, however, is to portray people as victims affected and threatened by climate change, which thus has to be fought against and resisted. It is also notable that, despite growing scientific understanding that climate change has to be mitigated and adjusted to rather than fixed for good, our sample contains only three occurrences of corresponding verbs (*to mitigate*, *to reduce*, *to adapt*) being used in relation to it.

In the multi-level model of climate change frames elaborated by Moernaut, Mast and Pauwels (2018), the war metaphor is a constituent device of the so-called anthropocentric master frame (master frame being the highest level in the proposed hegemony). The core idea of this frame is that human is the main victim who suffers from external hindrances. Such a worldview aims at relieving people of responsibility for the disruption they caused and largely ignores the other realms of nature that suffer from climate change.

Conclusion

Although an abundance of research has focused on climate change framing to date, this topic remains relevant in light of terminological shifts that have recently occurred in the respective media segment. Based on the analysis of climate change-themed articles from the leading English-language news outlets, we found out that, apart from the basic term *climate change*, other wordings are also gaining in popularity, particularly *climate crisis* and *climate catastrophe*. In contrast, the terms *climate emergency* and *climate breakdown* were restricted exclusively to *The Guardian*. We also noted semantic ambiguity in the use of the phrases *climate disruption* and *climate disaster*: they may function either as synonymous with *climate change* or – more narrowly – as the particular effects of climate

change, especially in the economic context. All in all, there is a significant extent of variability and instability in climate nomenclature at present, which merits further research.

In line with the aim of our study, we analysed the framing of climate change in our sample of media reports with regard to it being represented as either the agent or the recipient of the process. Within the agent perspective, climate change is often positioned as an accelerator or contributor towards other negative processes, both natural and sociopolitical ones (e.g. *climate change exacerbates, climate crisis accelerates*, etc.). It is only rarely that climate terms are combined with the verbs *to cause* and *to bring*, which foreground climate change as the main or the only reason for pernicious events. A common tendency is to portray climate change as a threat in either active or passive constructions, thus foregrounding its future effects rather than current ones. The most remarkable finding within this analysis stage was that climate change is often depicted as an evil-doer, being attributed with a destructive humanlike agency such as "destroying people's lives". This is an example of a somewhat misleading anthropomorphic metaphor, which aims to lay the blame for negative events upon an abstract entity rather than the people who caused it.

With regard to climate change being represented as a recipient of the process (i.e. when corresponding terms function as grammatical objects), the most common approach in the media is to frame it as a problem that has to be "solved" or "tackled". However, roughly as frequently represented as this neutral wording is, the metaphorical framing of climate change as an enemy that has to be "fought", "confronted", "countered", etc. In many cases, this pattern is extended with further details from the war frame (references to weapons, mobilisation, etc.), creating a vivid picture of the battlefield in the mind of the audience. Our findings reveal that the war narrative is still pervasive in the media discourse on climate change, even though much criticism of this approach has already been voiced. We believe that it is necessary to work out a more constructive approach towards the representation of climate change, which would necessarily foreground the human responsibility for causing this detrimental process and would place more value on the efforts to mitigate and adapt to climate change rather than eliminate it, which is the message associated with the war framing.

The major limitation of our study is the exclusive use of English-language material. Further research might focus on the comparison of climate change framing in media discourse across various languages with the help of corpus techniques. Psycholinguistic research into the effects of different terminological and metaphorical representations of climate change upon the audience would also be highly relevant today.

References

Atanasova, V., Koteyko, N., 2015. War and Religion: the Metaphors Hampering Climate Change Debate. *New Scientist*, April 15. https://doi.org/10.1016/S0262-4079(15)30781-4. Available at: https://www.newscientist.com/article/dn27358-war-and-religion-the-metaphors-hampering-climate-change-debate/ [Accessed 25 November 2021].

Badullovich, N., Grant, W., Colvin, R., 2020. Framing Climate Change for Effective Communication: A Systematic Map. *Environmental Research Letters*, 15 (12), 123002. https://doi.org/10.1088/1748-9326/aba4c7.

Boeynaems, A., Burgers, C., Konijn, E. A., Steen, G. J., 2017. The Effects of Metaphorical Framing On Political Persuasion: A Systematic Literature Review. *Metaphor and Symbol*, 32 (2), pp. 118–134. https://doi.org/10.1080/10926488.2017.1297623.

Brand, A., Brunnengräber, A., 2012. Conflictive Knowledge Constructions on Climate Change through Mainstream and Alternative Media? *Transience*, 3 (1), pp. 7–24.

Burgers, C. F., Konijn, E. A., Steen, G. J., 2016. Figurative Framing: Shaping Public Discourse through Metaphor, Hyperbole and Irony. *Communication Theory*, 26 (4), pp. 410–430. https://doi.org/10.1111/comt.12096.

Carrington, D., 2019. Why the Guardian is Changing the Language it Uses about the Environment. *The Guardian*, May 17. Available at: https://www.theguardian.com/environment/2019/may/17/whythe-guardian-is-changing-the-language-it-uses-about-the-environment [Accessed 15 October 2021].

Duranti, A., 2005. Agency in Language. In: Duranti, A., ed. *A Companion to Linguistic Anthropology*. Malden, Mass.: Wiley Blackwell, pp. 451–474.

Entman, R. M., 1993. Framing: Toward Clarification of a Fractured Paradigm. *Journal of Communication*, 43 (4), pp. 51–58. https://doi.org/10.1111/j.1460-2466.1993.tb01304.x.

Fausey, C., Long, B., Inamori, A., Boroditsky, A., 2010. Constructing Agency: The Role of Language. *Frontiers in Psychology*, 1 (162), pp. 1–11. https://doi.org/10.3389/fpsyg.2010.00162.

Feldman, L., Hart, P.S., 2021. Upping the Ante? The Effects of "Emergency" and "Crisis" Framing in Climate Change News. *Climatic Change*, 169 (10), pp. 1–20. https://doi.org/10.1007/s10584-021-03219-5.

Fillmore, C., 1977. Scenes-and-frames Semantics. In: Zampolli, A., ed. *Linguistic Structures Processing*. Amsterdam: North Holland, pp. 55–81.

Flusberg, S. J., Matlock, T., Thibodeau, P. H., 2017. Metaphors for the War (or Race) Against Climate Change. *Environmental Communication*, 11 (6), pp. 769–783. https://doi.org/10.1080/175240 32.2017.1289111.

Goffman, E., 1974. Frame Analysis: An Essay on the Organization of Experience. Cambridge, MA: Harvard University Press.

IPCC, 2021. IPCC Sixth Assessment Report. *Intergovernmental Panel on Climate Change*, August 9 2021 [pdf]. https://doi.org/10.1017/s2515461921009013. Available at: https://doi.org/10.1017/s2515461921009013. Available at: https://www.ipcc.ch/report/ar6/wg1/ [Accessed 2 November 2021].

Kalmus, P., 2018. @ Climate Human. [Twitter] August 30. Available at: https://twitter.com/ClimateHuman/status/1034993858243743744> [Accessed 12 December 2021].

Lakoff, G., Johnson, M., 1980. Metaphors We Live By. Chicago: Chicago University Press.

Lakoff, G., Turner, M., 1989. *More Than Cool Reason: A Field Guide to Poetic Metaphor*. Chicago: University of Chicago Press.

Langacker, R. W., 2008. Cognitive Grammar: A Basic Introduction. New York: Oxford University Press.

Malakoff, D., 2014. Let's Call It 'Climate Disruption, White House Science Adviser Suggests (Again)'. *Science*, May 2. https://doi.org/10.1126/science.344.6183.458. Available at: https://www.science.org/content/article/lets-call-it-climate-disruption-white-house-science-adviser-suggests-again [Accessed 13 September 2021].

Moernaut, R., Mast, J., Pauwels, L., 2018. Framing Climate Change: A Multi-Level Model. In: Filho, W. L., Manolas, E., Azul, A. M., Azeiteiro, U. M., McGhie, H., eds. *Handbook of Climate Change Communication: Vol. 1. Climate Change Management*, pp. 215–271. Cham: Springer.

Moser, S. C., 2010. Communicating Climate Change: History, Challenges, Process and Future Directions. *WIREs Climate Change*, 1 (1), pp. 31–53. https://doi.org/10.1002/wcc.11.

Nisbet, M. C., 2009. Communicating Climate Change: Why Frames Matter for Public Engagement. *Environment: Science and Policy for Sustainable Development*, 51 (2), pp. 12–23. http://dx.doi.org/10.3200/ENVT.51.2.12-23.

Poortinga, W., Whitmarsh, L., Steg, L., Böhm, G., Fisher, S., 2019. Climate Change Perceptions and Their Individual-Level Determinants: a Cross-European Analysis. *Global Environmental Change*, 55, pp. 25–35. https://doi.org/10.1016/j.gloenvcha.2019.01.007.

Ripple, W. J., Wolf, C., Newsome, T. M., Barnard, P., Moomaw, W. R. and 11,258 Scientist Signatories from 153 Countries, 2019. World Scientists' Warning of a Climate Emergency. *BioScience*, November 5 2021. Available at: https://academic.oup.com/bioscience/advance-article/doi/10.1093/biosci/biz088/5610806. [Accessed 21 November 2021].

Rossa-Roccor, V., Giang, A., Kershaw, P., 2021. Framing Climate Change as a Human Health Issue: Enough to tip the Scale in Climate Policy? *The Lancet*, 5 (8), pp. e553–e559. https://doi.org/10.1016/S2542-5196(21)00113-3.

Shehata, A., Hopmann, D. N., 2012. Framing Climate Change: A Study of US and Swedish Press Coverage of Global Warming. *Journalism Studies*, 13 (2), pp. 175–192. https://doi.org/10.1080/14616 70X.2011.646396.

Tversky, A., Kahneman, D., 1981. The Framing of Decisions and the Psychology of Choice. *Science*, 211 (4481), pp. 453–458. https://doi.org/10.1126/science.7455683. Available at: < https://iopscience.iop.org/article/10.1088/1748-9326/aba4c7>.

Weathers, M. R., Kendall, B. E., 2015. Developments in the Framing of Climate Change as a Public Health Iissue in US Newspapers. *Environmental Communication*, 10 (5), pp. 593–611. https://doi.org/10.1080/17524032.2015.1050436.

White House, 2021. Remarks by President Biden at the COP26 leaders statement. *White House*, November 1. Available at: https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/11/01/remarks-by-president-biden-at-the-cop26-leaders-statement/ [Accessed 3 November 2021].