

# Discourses of Climate Delay in American Reddit Discussions

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**Abstract.** Arguments that seek to justify the lack of measures to combat anthropogenic climate change have been identified in public discourse and characterized into four distinct Discourses of Climate Delay. Reddit provides a useful source of data for discourse research. While discourse on other social media platforms is prone to polarization due to echo-chamber effects, the prevalence of these effects on Reddit is disputed. We used the Reddit and pushshift APIs to acquire data from posts on the popular political communities r/democrats and r/Republican. We then used intercoder-validated deductive qualitative content analysis based on the defined Discourses of Climate Delay to identify if Reddit users employ different Discourses of Climate Delay based on their political group affiliation. We find that members of r/Republican tend to employ arguments based on preventing change, while those in r/democrats preferentially use arguments that emphasize the complexity necessary for implementing structural changes.

**Keywords:** Discourses of Climate Delay, Reddit, Republicans, Democrats

## 1 Introduction

Among the many challenges facing humanity in the 21<sup>st</sup> century, and despite its increasingly evident effects, anthropogenic climate change seems to be one of the most divisive issues in contemporary public discourse. Consequentially, there has been an ever-increasing range of arguments to downplay the need for action. This debate carries over into social media, where supporters of various political camps use common platforms to share their thoughts and debate about these topics. These discussions can be classified with the so-called Discourses

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of Climate Delay by Lamb et al. [1], which “accept the existence of climate change, but justify inaction or inadequate efforts” [1]. Lamb et al. identified different kinds of discourses ranging from a change of topic to the use of mis- or disinformation about outcomes of climate action. Since these discourses are relatively new, there has not been a lot of research concerning specific social groups. This led us to the question if any groups favor certain discourses. Since Democrats and Republicans are the prime examples of two opposing poles in this discussion in American society, we want to explore if there are differences in the usage of this theory. For this study, we chose Reddit as a sample social media platform. We compared the Democratic forum to the Republican one regarding their tendencies to outline polar behavior regarding politics and compare their discussion behavior. We will show the contents of this study in detail.

## 2 Related Work

We will look at three different topics on which to base our hypotheses. First, we will elaborate on the Discourses of Climate Delay. Following that, Reddit as a platform for political discussion will be explored. Lastly, we will give a description of Democrats and Republicans in the American political landscape and their differences in perception and approaches to climate change. This chapter closes with a summary of the related work and the resulting research question and corresponding hypotheses.

### 2.1 Discourses of Climate Delay

Discourses of Climate Delay are strategies employed to disregard the need for action to lessen or prevent climate change [1]. The difference between these discourses and other arguments opposing climate policies is as follows: Climate denialism or climate-impact skepticism do not acknowledge the scientific consensus on climate change and the negative impact on the planet. Discourses of Climate Delay, on the other hand, do acknowledge climate change as a threat [2,1]. Nevertheless, they are communicative strategies that divert attention away from action by focusing on questions such as which action is beneficial and which is not, when a certain action should be employed, who is to cover costs, and who should be held responsible for taking action in the first place [1]. Lamb et al. emphasize that this can happen with good intentions as well as maliciously, but regardless of the intentions, it prevents or delays meaningful action.

Lamb et al. state that the discourses can be subsumed under four categories: *redirect responsibility*, *push non-transformative solutions*, *emphasize the downsides*, and *surrender*.

**Redirect Responsibility** Discourses in this category revolve around answering the question “who is responsible for taking climate action?” [1]. The main focus lies in shifting responsibility to either restrict the range of solutions or

push responsibility onto other actors, delaying own actions or justifying inaction. Redirect responsibility discourses include the practice of whataboutism, individualism, or using the “free rider” excuse, stating that taking action allows other actors to benefit despite their inaction [1].

**Push Non-transformative Solutions** Discourses in this category focus on solutions to climate change that are not disruptive to current living standards and practices while disregarding the need for more extreme measures [1]. Common discourses can be technological optimism or fossil fuel solutionism, where the main premise is that future innovations will sufficiently address climate change. Other examples include relying on and supporting voluntary action without compulsion and talking about the need for a solution for climate change and ambitious goals without acting on them or having a concrete plan to reach them [1].

**Emphasize the Downsides** Discourses in this category center around negative impacts that climate policy can or could have on people or the economy [1]. They rely on the conviction that necessary change would be too disruptive and would cost too much to be desirable, compared to the consequences of inaction. Discourses in this category include appeals to social justice or well-being, which state that policies will disproportionately affect marginalized groups and make their lives more difficult, as well as deny countries or individuals the ability to participate in a modern or desired livelihood [1]. Another option is to seek policy perfectionism, where an unrealistic standard is set for a policy to be accepted, like all parties agreeing on a policy or expecting a high impact with minimal cost.

**Surrender** Discourses in this category demand a refocusing of efforts towards adapting to climate change instead of trying to mitigate it or give up efforts altogether [1]. Discussion centers around the idea that mitigating climate change is impossible because it is too late to do so, it was not meant to be, or because it cannot work with the current systems in place [1]. Lamb et al. state that discourses in this category can also be religiously motivated and include a trust in God or fate as the only feasible option to choose right now.

## 2.2 Reddit

A cursory examination of existing research points towards Reddit as a promising data source for analyzing political discourse for several reasons.

Reddit is characterized as a “social news aggregation, web content rating and discussion” website [3], or as a “bulletin of user-submitted text, links, photos, and videos” [4]. It is evident that social media and social news sites determine what topics become foci in the contemporary discourse and popular media narrative to an ever-increasing extent [5], with Reddit outsourcing the curation, ranking, and commentary of the current topical content to its users [5].

Reddit is a well-visited website, ranking as the 18<sup>th</sup> most visited site globally and the 6<sup>th</sup> most visited in the United States in 2019 [6]. Reddit’s own published statistics claim there are more than 100,000 active communities (i.e., subreddits) as of late 2021, with a total of 366 million posts created in that year [7]. Also, “aggregate user data is publicly accessible” [5] and the data can be used to “perform longitudinal studies on the whole system, and, critically, to ensure the reproducibility of the results” [3].

Reddit can be loosely described as having an “inferred” community structure [8]. In other words, most of the activity on Reddit is not centered around expanding one’s network or attaining some form of social capital but rather on the discussion and commentary of specific topics and themes as defined within the communities. Users usually subscribe to subreddits but not to other users, again focusing on content rather than building a network [3].

The structure of Reddit itself mimics the structure of individual comment threads, with the landing page providing a curated list of currently popular topics. Registered users see posts from the communities they are subscribed to, as well as some popular posts, with unregistered users being shown content based on posts’ current popularity [3]. Individual posts are embedded within a respective community (i.e., a subreddit).

Reddit posts are hierarchically structured in the following way: The threads are structured as a root tree, with the original (or ‘self-post’) at the root of the structure, first-level comments responding to the original posts, second-level comments responding to those on the level above them, etc. Users have the option to ‘upvote’ or ‘downvote’ self-posts as well as individual comments, with highly upvoted entries receiving increased visibility.

This leads to a form of self-organization [3], where adherence to so-called “rediquette” [9] is monitored by the users themselves. Adherence to further norms is generally subreddit-dependent, with norm violation and compliance being punished or rewarded based on self-defined internal rules or guidelines of that community [8]. Certain behavior that would be frowned upon in some communities is encouraged in others, leading to diverse discussion within the different subreddits.

### 2.3 Democrats vs. Republicans

The supporters of the parties represented in America’s two-party system—the Democrats and the Republicans—differ in many more facets than just their different political stances [10,11,12]. Studies continue to describe psychological and behavioral differences between party members, reaching from motivation or reasoning to speech and writing patterns [10,11,12,13].

Sheldon & Nichols compared Democrats and Republicans in regard to their value systems. They found that Republicans scored higher on extrinsic values than intrinsic values, meaning that they valued financial success, popularity, and their own image more than intimacy, helping others, and growth. Democrats, on the other hand, scored higher in intrinsic values than in extrinsic values [14]. Furthermore, Democrats more commonly inhabit a more prosocial orientation,

valuing community and cooperation, while Republicans inhabit a more pro-self orientation, focusing on personal gain at the expense of others if need be [14].

When talking about Democrats and Republicans, we can derive certain assumptions about the two groups by also considering the distinction between liberal and conservative people, as a conservative mindset correlates with voting for the Republican party, whereas a liberal mindset correlates with voting for the Democratic party [15]. However, these assumptions have to be taken into account with care since there are a certain amount of conservative Democrats as well as liberal Republicans [15]. The personality dimensions from the “Big Five” model can be observed differently in liberals and conservatives [16]. Liberals score high in the “openness to new experiences” dimension, characterizing them as open-minded, creative, curious, and novelty seeking, whereas conservatives have a high score in the conscientiousness dimension, making them more likely to be orderly, conventional, and organized [16].

In relation to climate change, there are also several differences between Republicans and Democrats. Historically, the Republican party changed its view on environmental politics when regulations concerning the environment were labeled as a burden on the economy by the Reagan administration [17]. The effects of this can still be observed today. Many Republican or Republican-leaning voters prioritize economic growth over environmental protection, whereas most Democratic or Democratic-leaning voters set their priorities the other way around [18]. Democrats express the need for more climate action more strongly than Republicans do [19]. Furthermore, Democrats see developing alternative energy sources as a priority over developing fossil-fuel-driven energy generation [19]. Republicans, on the other hand, are more divided over the question of energy, especially conservative Republicans, which represent the majority of Republicans, and they prioritize fossil fuels more than Democrats do [19].

Lastly, Democrats and Republicans use different language and can be observed writing about different themes on the internet. In a study conducted by Sylwester & Purver, differences in topics and expression were found between Democrats and Republicans. On Twitter, Republicans focus on themes like national identity, in-group identity, and their opponents, while Democrats focus on entertainment and culture, while using words that are more emotionally expressive than the ones Republicans use [10]. On Reddit, users can be categorized into political factions fairly accurately by their posts in political subreddits, but subtle differences can also be observed within posts that do not revolve around politics [20].

## 2.4 Research Question and Hypotheses

Lamb et al. identified the Discourses of Climate Delay to provide a reference point that can be used to counter misinformation and to more easily develop information strategies to challenge these discourses. This work will use this reference point to identify if there is a difference in usage of the different Discourses of Climate Delay to extend the reference point. By understanding how differ-

ent groups use different Discourses of Climate Delay, one can not only develop information strategies but begin to target a specific audience for a greater effect.

As stated above, we chose the Democratic and Republican parties as groups of interest for their tendencies to show polar behavior in regards to policy and looked at their discussion behavior on Reddit. This work wants to answer the question if there are differences in the usage of the different Discourses of Climate Delay between Democrats and Republicans in Reddit discussions. To answer the questions, the following hypotheses are proposed.

Taking into consideration the differences in personality, view on climate debate, and language between Democrats and Republicans described in the previous chapter, we hypothesize that the difference will carry over into the Reddit arguments and be reflected by a different usage of Discourses of Climate Delay. Furthermore, we hypothesize that, due to their tendency to prioritize financial gain and economic well-being, Republicans lean into the *emphasize the downsides* discourse. Emphasizing the downsides often means focusing on economic losses that some policies might trigger.

On the other hand, we predict that Democrats use the *push non-transformative solutions* discourse more than the other discourses since they are open to new experiences and generally favor climate action. This discourse includes technological optimism and, in contrast to the other discourses, the actual intention to take action. Concluding, our hypotheses are the following:

- **H1:** There is a difference in the usage of Discourses of Climate Delay between Democrats and Republicans in Reddit discussions.
- **H2:** Republicans favor the *emphasize the downsides* Discourse of Climate Delay over other discourses.
- **H3:** Democrats favor the *push non-transformative solutions* Discourse of Climate Delay over other discourses.

These will be tested on a corpus of Reddit posts and comments using deductive qualitative content analysis along with descriptive statistical analyses as described in the next chapter of this work.

### 3 Method

In this chapter, we present and explain the method used to answer the research question and test our hypotheses. Because, to our knowledge, there have been no studies about the differences in the use of Discourses of Climate Delay between the Republican and Democratic parties, we chose a deductive qualitative approach to explore and discuss possible differences in depth and set the foundation for future broader quantitative studies. The data was gathered by scraping two party-specific subreddits—r/democrats and r/Republican—cleaned, and then analyzed to identify the discourses within the subreddits.

#### 3.1 Groups

Our research focuses on the two dominant political parties in the U.S. [21]. The subreddit structure and the internal guidelines of the subreddits themselves

offered a good separation to examine differences between the groups. Both subreddits state in their description or rules that they do not want supporters of the opposite party to discuss within the subreddit and that they do not want attacks against the political orientation of the subreddit, nor do they want promotion of other political parties [22,23]. We relied on the same approach as attributed to Morales et al. [24]: assuming users' adherence to the rules within the subreddits, we used their participation within the subreddits as a proxy of political group affiliation.

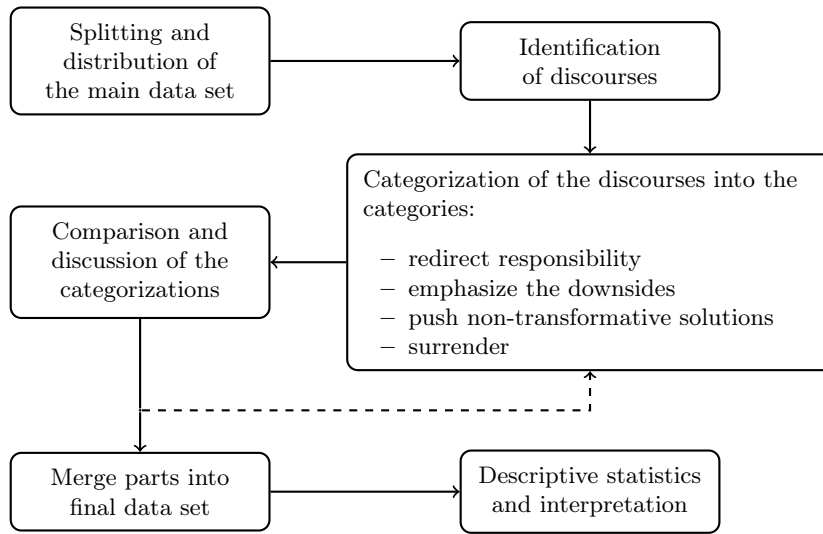
### 3.2 Data Acquisition

To explore the discourses used within the two subreddits, we scraped both subreddits using Python and by utilizing the official Reddit API [25] as well as the pushshift API [26]. We focused on scraping data from 2020 to minimize the chance of changes happening to the dataset while scraping (for example, by removing or deleting a comment or post) and because we anticipated a higher discussion rate due to the running presidential election in the U.S. A data point was added to our main dataset if the post contained the keyword 'climate' or 'Climate' within the post-title, the self-text of the post, or in one of the comments of the post. Each data point consists of the post-id, post-title, self-text, all comments made under the posts, the URL to the posts, the sum of votes (upvotes minus downvotes) for each comment, and the assignment to the subreddit it was derived from. Each post was stored in two separate data files: one containing the title, the self-text, URL and the comments, and the other one containing the sum of votes for all comments.

### 3.3 Content Analysis

We conducted a deductive qualitative content analysis based on Mayring [27]. The intercoder agreement method as described by Campbell et al. [28] was used and therefore, the main dataset was split into three parts and distributed over six coders with pairs of two receiving the same part. Because a Reddit post is not limited in its number of comments, we used the following strategy to narrow down the parts of each post and to define the recording unit: For each data point, the post-title and self-text had to be inspected. Then the keyword 'climate' was searched for in the comments. The comment containing the keyword as well as its context was inspected. Context, in this case, was loosely defined as all comments needed to understand the discussion around the comment containing the keyword. Therefore the recording unit consisted of the title, self-text, and the comments containing the keyword plus their context. The coding unit (which could be included in the title, self-text, or comment) was defined as a sentence and the context unit as a complete comment. The four main Discourses of Climate Delay were used as the main categories: *redirect responsibility*, *surrender*, *push non-transformative solutions*, and *emphasize the downsides*. Because the size of a discourse is not fixed, multiple discourses could be identified in one comment or self-text. An identified and categorized discourse was saved in a

new data table including the following variables: Id of the post, type of text (post-title, self-text, comment plus position in the comment tree), the text itself, the categorization of the discourse, and the sum of votes (if the text was part of a comment). After the coders had completed the analysis, the coder pairs discussed, compared, and adjusted their results where necessary. Discourse identifications or classifications that could not be agreed upon by the coder pairs were noted and discussed in a final round by all coders. The so-created three data tables of the coder pairs were merged into a final dataset. Furthermore, we calculated the frequencies and relative frequencies of discourses in the groups and created boxplot diagrams on word count and the sum of votes for the discourses in both groups. The full analysis process is depicted in Figure 1.



**Fig. 1.** Procedure of the content analysis.

## 4 Results

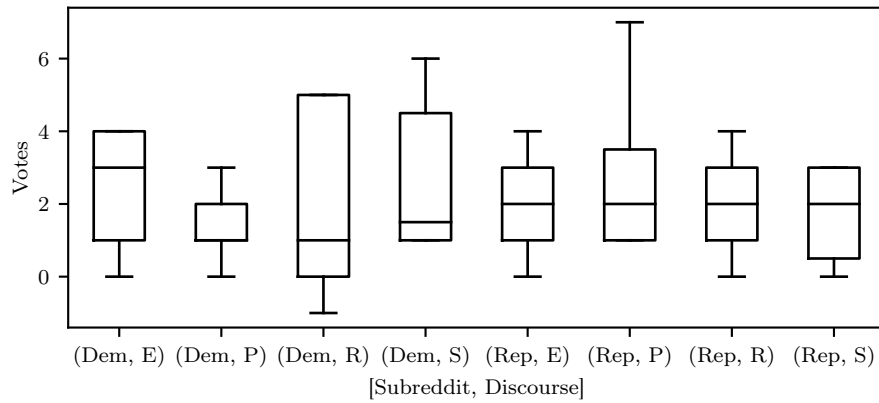
### 4.1 Sample Description

On the 30<sup>th</sup> June 2020 the subscription count was 123,830 for the r/Republican and 134,196 for the r/democrats subreddit. 25,287 posts were posted in 2020 within r/democrats and 27,720 within r/Republican [29]. The main data set contained 219 posts from the r/Republican subreddit and 344 posts from the r/democrats subreddit. The classification of Discourses of Climate Delay reduced the data set to 69 comments in 28 posts from r/Republican and 49 comments in 20 posts from r/democrats.



## 4.2 Descriptive Statistics

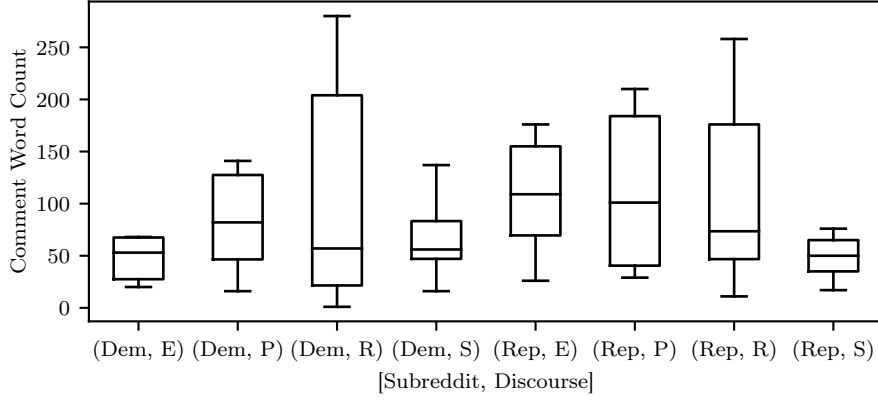
Reddit provides a descriptive feature through the sum of votes for each comment. Analyzing the sum of votes of comments containing a form of Discourse of Climate Delay yields a relatively uniform picture (see Figure 2). The median of votes lies between 1 and 2—with the exception of *emphasize the downsides* in r/democrats. Since the initial vote rating is plus one (Reddit assumes that the author of a comment likes his or her own comment), this median represents a neutral activity. Either these comments did not receive many up- and downvotes or they canceled each other out. The mean of the votes is close to the median, between 0.5 and 4.8 with the exception of *redirect responsibility* in r/democrats with a mean sum of votes of 12.7. The standard deviation lies between 1.4 and 10.3 with the same exception of *redirect responsibility* in r/democrats with a standard deviation of 27.5. Those measures are close to the ones of the complete sample, which has a median of 2, a mean of 6.4 and a standard deviation of 20.



**Fig. 2.** Boxplots of the sums of votes per subreddit and Discourse of Climate Delay. Outliers are removed for better visibility. *Dem* and *Rep* are the subreddits r/democrats and r/Republican, respectively. *E*, *P*, *R* and *S* are the Discourses of Climate Delay: ***E*** *Emphasize the downsides*, ***P*** *Push non-transformative solutions*, ***R*** *Redirect responsibility* and ***S*** *Surrender*.

The analysis of the word count of comments containing Discourses of Climate Delay show median word counts ranging from 50 (*surrender* in r/Republican) to 109 (*emphasize the downsides* in r/Republican) as shown in Figure 3 with a median of 73 over all groups. The median word counts for each Discourse are higher in r/Republican than in r/democrats, except for *surrender*, where they are relatively close. The highest standard deviation (513.8) can be observed in *push non-transformative solutions* in r/Republican, while *surrender* in r/democrats

has the lowest standard deviation (35.7). The standard deviation of the other discourses lies between 40.5 and 365.6.



**Fig. 3.** Boxplot of the comment word counts in r/democrats and r/Republican for each Discourse of Climate Delay. No outliers are removed. *Dem* and *Rep* are the subreddits r/democrats and r/Republican, respectively. *E*, *P*, *R* and *S* are the Discourses of Climate Delay: *Emphasize the downsides*, *Push non-transformative solutions*, *Redirect responsibility* and *Surrender*.

### 4.3 Distribution of Discourses of Climate Delay

The distribution of different Discourses of Climate Delay can be taken from Table 1. It is noticeable that both subreddits predominantly use two Discourses of Climate Delay each. In the subreddit r/democrats, the majority of arguments fall in the categories of *surrender* (33 %) and *push non-transformative solutions* (31 %), whereas the subreddit r/Republican primarily uses the other two categories—*redirect responsibility* (41 %) and *emphasize the downsides* (33 %).

Discourse of Climate Delay	r/democrats	r/Republican
redirect responsibility	11 (22 %)	28 (41 %)
emphasize the downsides	7 (14 %)	23 (33 %)
push non-transformative solutions	15 (31 %)	11 (16 %)
surrender	16 (33 %)	7 (10 %)

**Table 1.** Absolute and relative portion of Discourses of Climate Delay per subreddit.

## 5 Discussion

In this chapter we will discuss the results from the previous chapter, draw connections to previous related work, identify the limitations of our approach, and consider improvements for further research.

### 5.1 Hypotheses

Interpreting the results we can see a duality between two groups of discourses used by Republicans and Democrats. Republicans mainly use *redirect responsibility* and *emphasize the downsides*, while the other two discourses fall behind, the next one in line being only used about half as much as *emphasize the downsides*. Meanwhile, Democrats seem to favor the two discourses that Republicans use less. The *surrender* and *push non-transformative solutions* discourses together make up almost two thirds of the occurrences of discourses in r/democrats. The divide between Democrats and Republicans in their values, their motivation, their stance on climate policy and even their Twitter behavior continues in the usage of Discourses of Climate Delay on Reddit. Therefore, H1 can be accepted: “There is a difference in the usage of Discourses of Climate Delay between Democrats and Republicans in Reddit discussions”. H2 stated that “Republicans favor the *emphasize the downsides* Discourse of Climate Delay over other discourses” while H3 is “Democrats favor the *push non-transformative solutions* Discourse of Climate Delay over other discourses”. Both hypotheses could not be directly confirmed, since both groups favored another Discourse of Climate Delay over the other discourses, while both our hypothesized discourses were second after that (compare Table 1). Since both hypothesized discourses still are in the favored pair of discourses of the corresponding group, we want to take a closer look at the discovered pairs.

**Republicans** Based on recent work we hypothesized that Republicans favor the *emphasize the downsides* discourse over other discourses. While this is not wholly the case, the discourse is part of the pair of discourses this group mostly uses in Reddit arguments. The reasoning behind this is most likely the same as related work suggests: Republicans favor economic growth over environmental protection and their pro-self orientation leads them to argue for personal gain at the cost of others if need be [14]. Climate policy may very likely affect the economy in some way, for example non environmentally-friendly production or fossil fuels might not be financially supported by the government anymore and may by extension affect the job market. The threat of financial loss threatens Republicans in their pro-self orientation, and might lead them to arguing against that change to prevent personal losses. “*The green new deal he supports would cost 90 TRILLION dollars for 10 years. It would destroy the entire economy much worse than any climate change could ever wish of doing.*”<sup>4</sup>

<sup>4</sup> [https://www.reddit.com/r/Republican/comments/j6hkev/workingclass\\_americans\\_in\\_all\\_states\\_support/](https://www.reddit.com/r/Republican/comments/j6hkev/workingclass_americans_in_all_states_support/)

The discourse that is used mostly by Republicans on Reddit is the *redirect responsibility* discourse. This falls in line with the discovered tendency of Republicans to try to avoid change or at least push it back by demanding that others change first. Another explanation could be derived from the time of the investigation. We examined Reddit discussion at the end of the 4-year period of Donald Trump as president and leader of the Republican party. Donald Trump was very well known for shifting responsibility onto others, using a technique called whataboutism, which is subsumed in the *redirect responsibility* discourse [30], e.g., “*My problem with this is that in the treaty, it doesn’t include China and India...THE TWO BIGGEST CONTRIBUTORS TO CLIMATE CHANGE.*”<sup>5</sup>. Republicans may have adopted this rhetoric—particularly shifting blame towards China—from their political leader, Donald Trump, who painted China as one of America’s greatest rivals, particularly in an economic sense [31].

**Democrats** Recent work shows that Democrats are more open to change and inhabit a prosocial orientation [14]. They do not primarily favor the *push non-transformative solutions* discourse over all other Discourses of Climate Delay, but it is still the second most commonly used by Democrats on Reddit, which is supported by findings from recent work. Their push for change and climate action may be well-intentioned but as Lamb et al. discuss, can still result in action-delaying behavior like trusting in future technology to solve climate problems and expecting non-disruptive change to be sufficient [1]. “*Making diesel fuel from atmospheric CO2 might be the only way to go there.*”<sup>6</sup>

Democrats, however, use the *surrender* discourse the most. One reason could be, again, the timeframe of our analysis at the end of a Republican-led presidency, which was especially disruptive regarding climate policy, e.g., in its leaving the Paris Climate Agreement [32]. Seeing policies being revoked and past action nullified might have instilled a sense of hopelessness or doom in Democrats. Another reason can be deduced from an analysis by Napier et al., who examined happiness between Democrats and Republicans and found Democrats to be less happy than their Republican counterparts [33]. Hibbing et al. suggest that while conservatives avoid negative experiences, liberals are more likely to actively search for confrontation leading to this kind of negativity bias [34]. This might lead to the conclusion that change is impossible and therefore promote the *surrender* discourse. Nevertheless, openness and push for change still plays a very prominent role in Democrat *surrender* discourse. The thought that any action might now be too late anyway leads to a shift to adaption to climate change instead of prevention. “*Come to terms with it, we’re just going to have*

<sup>5</sup> [https://www.reddit.com/r/Republican/comments/k3njr4/paris\\_climate\\_treaty\\_puts\\_america\\_last/](https://www.reddit.com/r/Republican/comments/k3njr4/paris_climate_treaty_puts_america_last/)

<sup>6</sup> [https://www.reddit.com/r/democrats/comments/fdm1t2/whats\\_the\\_appeal\\_of\\_joe\\_biden/](https://www.reddit.com/r/democrats/comments/fdm1t2/whats_the_appeal_of_joe_biden/)

*to move some coastal cities. The climate crisis is unstoppable.*<sup>7</sup>

To conclude this discussion, we can observe this duality between the two favored discourses of each party in regard to change. At their core *emphasize the downsides* and *redirect responsibility* are discourses that delay climate action by trying to prevent change. Meanwhile *push non-transformative solutions* and *surrender* are discourses that delay climate action by (mis)guiding the wish for change in a different direction, while still allowing for a direct push for action. Therefore Republicans favor the first pair of discourses, for they are generally more skeptical of change, while Democrats, who are generally more open to change, favor the second pair.

## 5.2 Limitations

Several limitations to the results of this work should be considered. First of all, we cannot guarantee the completeness of the dataset, as some comments in the posts had been deleted or removed, or were otherwise not accessible, allowing for the possibility that potentially relevant information was missing. Secondly, by choosing the year 2020 as the timeframe for our research, we limited the scope of our results, even if the communities we examined have existed for much longer and are still active today. Furthermore, we had to rely on the users of the subreddits to conform to the rules of their respective communities stating that people who affiliate with another party should not post or comment in the subreddit. Finally, we only focused on the keyword ‘climate’, which on one hand resulted in ‘false positive’ posts, which discussed e.g., political climate, and on the other hand may have left out posts and comments which included Discourses of Climate Delay, but did not include the specific word ‘climate’.

## 5.3 Further Research

To build on this work, there are some aspects to consider for future research. Firstly, one could adjust or expand the timeframe to direct or expand the scope of the analysis. Since we only analyzed Reddit discussions from the year 2020, it could be interesting to compare the results to another year that is further in the past, e.g., the year 2016 or 2012, during which presidential elections in the US were also held. Another possibility would be to compare a year of the presidential elections to a year where there was no such election, or to observe the change between 2020 and the present. Secondly, it could be interesting to analyze posts from politicians in the same way, and examine similarities and differences between the discussion behavior of private citizens and that of the policymakers that represent them. Moreover, for further research, it could be useful to expand the key words beyond ‘climate’, by looking at related topics like the ‘Green New Deal’ or ‘renewable energy’. Relating to this, finding new keywords can be

<sup>7</sup> [https://www.reddit.com/r/democrats/comments/iaopl2/opinion\\_trump\\_vilifies\\_mask\\_wearing\\_to\\_get\\_people/](https://www.reddit.com/r/democrats/comments/iaopl2/opinion_trump_vilifies_mask_wearing_to_get_people/)

partially automated by utilizing text mining. Lastly, this work demonstrates the possibilities for further in-depth analysis of the apparent duality between the categories of Discourses of Climate Delay used by Republicans and Democrats, which could expand this approach and apply it to other social or ideological groups.

## 6 Conclusion

This work utilized a deductive qualitative content analysis to find out if Democrats and Republicans show a different usage of Discourses of Climate Delay in online discussions on Reddit. The results of our study show that there is a difference between Democrats and Republicans in their use of Discourses of Climate Delay on Reddit. While Democrats favor *surrender* and *push non-transformative solutions* in an effort to address the need for change, Republicans do the opposite—they use *emphasize the downsides* as well as *redirect responsibility* to prevent change from happening. With that in mind, future campaigns and efforts to counter these Discourses of Climate Delay can better focus their efforts on addressing the respective target groups.

## References

1. Lamb, W.F., Mattioli, G., Levi, S., Roberts, J.T., Capstick, S., Creutzig, F., Minx, J.C., Müller-Hansen, F., Culhane, T., Steinberger, J.K.: Discourses of climate delay. *Global Sustainability* **3** (2020)
2. Dunlap, R.E., McCright, A.M., et al.: Organized climate change denial. *The Oxford handbook of climate change and society* **1** (2011) 144–160
3. Medvedev, A.N., Lambiotte, R., Delvenne, J.C.: The anatomy of reddit: An overview of academic research. In: *Dynamics On and Of Complex Networks III*, Cham, Springer International Publishing (2019) 183–204
4. Duggan, M., Smith, A.: 6% of online adults are reddit users. *Pew Internet & American Life Project* **3** (2013)
5. Weninger, T., Zhu, X.A., Han, J.: An exploration of discussion threads in social news sites: A case study of the reddit community. In: *IEEE/ACM international conference on advances in social networks analysis and mining (ASONAM 2013)*. IEEE 579–583
6. Del Valle, M.E., Gruz, A., Kumar, P., Gilbert, S.: Learning in the wild: Understanding networked ties in reddit. In: *Mobility, Data and Learner Agency in Networked Learning*. Springer International Publishing, Cham (2020) 51–68
7. redditinc.com: Reddit recap 2021. <https://www.redditinc.com/blog/reddit-recap-2021> Accessed: 2022-03-08.
8. Datta, S., Adar, E.: Extracting inter-community conflicts in reddit. *Proceedings of the International AAAI Conference on Web and Social Media* **13**(01) (Jul. 2019) 146–157
9. Anderson, K.E.: Ask me anything: what is reddit? *Library Hi Tech News* **32**(5) (2015) 8–11
10. Sylwester, K., Purver, M.: Twitter language use reflects psychological differences between Democrats and Republicans. *PLoS ONE* **10**(9) (2015) 1–18

11. Schreiber, D., Fonzo, G., Simmons, A.N., Dawes, C.T., Flagan, T., Fowler, J.H., Paulus, M.P.: Red Brain, Blue Brain: Evaluative Processes Differ in Democrats and Republicans. *PLoS ONE* **8**(2) (2013) 9–14
12. Sweetser, K.D.: Partisan Personality: The Psychological Differences Between Democrats and Republicans, and Independents Somewhere in Between. *American Behavioral Scientist* **58**(9) (2014) 1183–1194
13. Gustafson, A., Goldberg, M.H., Kotcher, J.E., Rosenthal, S.A., Maibach, E.W., Ballew, M.T., Leiserowitz, A.: Republicans and Democrats differ in why they support renewable energy. *Energy Policy* **141**(March) (2020) 111448
14. Sheldon, K.M., Nichols, C.P.: Comparing democrats and republicans on intrinsic and extrinsic values. *Journal of Applied Social Psychology* **39**(3) (2009) 589–623
15. Linn, E.L.: The influence of liberalism and conservatism on voting behavior. *Public Opinion Quarterly* **13**(2) (1949) 299–309
16. Carney, D.R., Jost, J.T., Gosling, S.D., Potter, J.: The secret lives of liberals and conservatives: Personality profiles, interaction styles, and the things they leave behind. *Political Psychology* **29**(6) (2008) 807–840
17. Dunlap, R.E., McCright, A.M.: A widening gap republican and democratic views on climate change. *Environment* **50**(5) (2008) 26–35
18. Smeltz, D., Sullivan, E., Wolff, C.: Republicans and Democrats in Different Worlds on Climate Change. *The Chicago Council on Global Affairs* (October) (2021)
19. Funk, C., Hefferon, M.: U.S. Public Views on Climate and Energy. *Pew Research Center* (2019) 1–36
20. Acosta, A., Ciurea-Ilcus, S., Wegrzynski, M.: Predicting users' political support from their reddit comment history. *Science* **1612**(349) 310
21. Jones, J.M.: U.S. political party preferences shifted greatly during 2021. <https://news.gallup.com/poll/388781/political-party-preferences-shifted-greatly-during-2021.aspx> Accessed: 2022-02-17.
22. reddit.com: Republican. <https://www.reddit.com/r/Republican/> Accessed: 2022-02-17.
23. reddit.com: Democrats: Building a better future. <https://www.reddit.com/r/democrats/> Accessed: 2022-02-17.
24. de Francisci Morales, G., Monti, C., Starnini, M.: No echo in the chambers of political interactions on reddit. *Scientific Reports* **11**(1) (2021) 2818
25. reddit: reddit API documentation. <https://www.reddit.com/dev/api/> Accessed: 2022-02-17.
26. pushshift.io: pushshift.io API documentation. <https://pushshift.io/api-parameters/> Accessed: 2022-02-17.
27. Mayring, P.: *Qualitative Inhaltsanalyse [Qualitative Content Analysis]*. 12 edn. Beltz Verlagsgruppe (2015)
28. Campbell, J.L., Quincy, C., Osserman, J., Pedersen, O.K.: Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability and agreement. *Sociological methods & research* **42**(3) (2013) 294–320
29. frontpagemetrics.com: Metrics for reddit. <https://frontpagemetrics.com/> Accessed: 2022-02-17.
30. Percy, M.: "It's not accidental at all"—media literacy, "whataboutism," and oc-cam's razor. *Research Issues in Contemporary Education* **6**(2) (2021) 10–35
31. Elms, D., Sriganesh, B.: Trump's trade policy: Discerning between rhetoric and reality. *Asian J. WTO & Int'l Health L & Pol'y* **12** (2017) 247
32. Jotzo, F., Depledge, J., Winkler, H.: US and international climate policy under president Trump (2018)

33. Napier, J.L., Jost, J.T.: Why are conservatives happier than liberals? *Psychological Science* **19**(6) (2008) 565–572
34. Hibbing, J.R., Smith, K.B., Alford, J.R.: Differences in negativity bias underlie variations in political ideology. *Behavioral and brain sciences* **37** (2014) 297–307