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DO YOU SEE WHAT I SEE? EMOTIONAL REACTION TO VISUAL CONTENT IN THE ONLINE DEBATE ABOUT CLIMATE CHANGE

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This paper explores the visual dimension of the hypothesized echo chamber in online climate discourse. The presence of echo chambers separating climate ideologically distinct groups in online climate discourse is a repeat finding in several studies. Yet these repeat results run counter to the consensus that expectations of social media amplified echo chambers are exaggerated in most cases, and there are also some contradictory findings in the case of online climate communication. Some analyses suggest that there is more interaction going on between groups on divergent sides than commonly recognized, and the possibility has been put forward that the findings of starkly separate spheres have to do with where and how the matter has been studied online. We focus on the role of visual content in these processes. Images are recognized to be important in climate communication, helping to bring complex issues close to home, mobilize action, and shape support for climate policy. Yet the scope of their role in online climate discourse is still little understood. We argue that visual content has the potential to contribute to a two-fold (de)polarizing dynamic in this context. On the one hand, images are the kind of content that can cross ideological boundaries to become a focal point for engagement from opposing sides, thereby drawing separate spheres together. On the other hand, audiences with divergent ideological, psychological and cultural predisposition may react in diverging ways to similar visual content. This means that engaging with common content can still underpin

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and amplify dynamics of affect and antagonism. In order to examine the visual dimension of online climate discourse, and in particular whether visual content supports echo chambers in this context, the study analyses the sharing of visual content across Facebook pages and groups that diverge in climate ideological stance. We ask the following questions: (1) whether visual content posted in the context of progressive action and activism is shared also on pages and groups that oppose such progressive climate action and activism; (2) whether emotional reaction to visual content changes as it is shared in ideologically distinct pages and groups;

Methods

The data builds on the online communication performed by a manually curated list of public Facebook pages and groups, manually coded as actors or counter actors, respectively advocating for more urgent action against climate change, or supporting climate change denialism and/or objecting to progressive action on climate change. Our initial list of pages and groups was compiled by a team of domain experts through a multi-stage process aimed at including not only the major organisations that are active and visible in the public debate about climate change, but also the large galaxy of local groups, communities and semi-formal organisations that play a role in shaping the debate and its public perception (Castro et al., 2016; Hoppe et al., 2016). The final list counts 423 European public Facebook pages and groups. Of those 258 have been manually labelled as actors and 165 have been labelled as counter actors. We then collected the posts shared by the 258 actors between July 1, 2023 and October 15, 2023 using CrowdTangle 3500 of the 7256 collected posts contained visual content. Notice that these coshares of the same visual content have been generated through any of the mechanisms allowed by Facebook, e.g. directly sharing a post from our initial list, sharing a post not in our initial list but linking to the same content, or posting a link to the same content without directly sharing another post. For this reason, rather than understanding this data as visual content propagating from actors to counter actors, we should think of it as co-exposure to the same visual content.
This rich dataset was then enriched through computational analysis to define an emotional reaction score for each post containing visual content. The emotional reaction score is based on what developed by Muraoka et al. (2021) and how much angry reactions dominates over love reactions (and vice versa).

Results

Our analysis shows that the vast majority of visual content shared by the actors is not co-shared by the counter-actors. Counter-actors only co-share 3.2% of the visual content shared by the actors. This result confirms an extremely small visual overlap between the two communities. Nevertheless, the exploration of the small amount of information that is actually co-shared shows some interesting results. Figure 1 shows the emotional shift observed when the visual content is shared by the actors and by the counter-actors. It is clearly possible to see a statistically significant movement of the overall emotional reaction towards more “anger” or less “love” when the content is shared among the counter-actors. A qualitative exploration of the reactions to the co-shared images shed lights into this interesting emotional divergence.

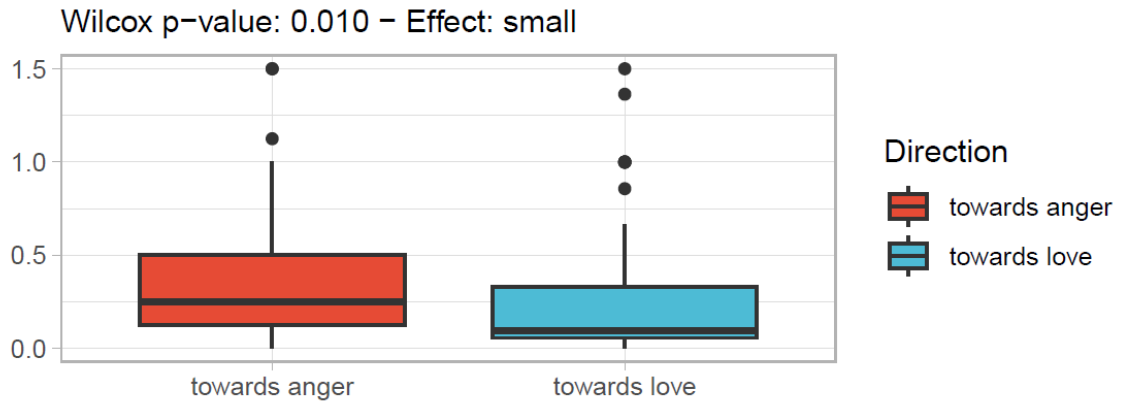

Figure 1: Movement of the emotional reaction score on co-shared pictures (actors -> counter-actors)

Figure 2 shows and example of the same image that was shared by both actors and counter actors but generated opposite reactions depending on the ideological alignment of the page/group. The image refers to a recent installation of large wind turbines in Germany and it comes with a text that summarises the incentives that have made the local community welcome the project. When shared on actor pages the comments were overwhelmingly positive and included things like “Best Practice!” or “So was nennt man Fortschritt1”. When shared on a counter actors group the tone of the comments changes radically and includes comments like “Stinktnach Bestechung2” or “Wenn es für diesen Wahnsinn keinen Widerstand gibt, kann es nur an der Dummheit und Naivität der Schipkauer liegen3”, together with longer comments detailing the perceived limitations or economic problems of wind energy.

Conclusions

We have observed how, over a prolonged period of time, only a small fraction of visual content is co-shared by activists groups and counter-actors. Moreover, when visual content is co-shared, it generates reactions that seem to correlate with the pre-existing ideological positions of the respective online spaces. This set of observations confirms what can be described as an overall echo chamber structure when it comes to the visual side of the climate debate, with only a small set of content forming a bridge across the groups. This is in line with what has been reported in previous research focused on non-visual aspects of the debate around climate change (Bloomfield and Tillery, 2019; Kaiser and Puschmann, 2017; Williams et al., 2015). We also show that the presence of common visual content does not represent a meaningful bridge across ideologically diverse communities. The same visual content triggers different, often opposite, reactions that seem to be driven by the pre-existing polarisation between the groups.

Figure 2: One of the images in the dataset that saw the polarity of the reactions changing depending on the ideological alignment of th efacebook group where it was sahared

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