Comment on esd-2021-71
Anonymous Referee #1

Referee comment on "Disentangling the climate divide with emotional patterns: a network-based mindset reconstruction approach" by Roger Cremades and Massimo Stella, Earth Syst. Dynam. Discuss., https://doi.org/10.5194/esd-2021-71-RC1, 2022

General comments:

In this manuscript, the authors use a forma mentis network analysis to evaluate the structure and emotional content of a series of speeches from two key figures of both climate activism (Greta Thunberg) and climate change denial (Christopher Monckton). They show in particular how a difference in emotional enrichment in climate denial discourse may underlie their propensity to spread, resulting in infodemics. The manuscript is well-written and clear on its objectives and findings. I have a few specific comments however, as well as technical comments, that I believe might help clarify some methodological points in the manuscript before publication.

Specific comments

- the manuscript is a descriptive endeavor, leveraging the forma mentis approach to then elaborate about the interpretation of the observed semantic and emotional reconstructions. It is to note however, that the sample size is relatively small, at least in breadth (only 2 individuals analysed), and potentially in width (the total number of sentences analysed for each individual is not reported, but should be). This will surely affect the probability to observe certain (co-)occurrences of words, and results in some statistical uncertainty that is for now hard to assess. An example of this uncertainty would be the emotional variation from speech to speech, with some of them potentially being situated in a context or platform promoting some emotions above others. I would find the analysis strengthened if the authors could evaluate the statistical significance of their observed outcomes, or at least comment upon this.
More generally, the limit of the low sample size should be discussed in perspective, in particular the potential limit of representativeness with regards to the general discourse from each "side"

Finally, I feel that more precise details should be given in the methods section as to the network reconstruction method, in addition to the reference provided, to help guide the reader. While Eq1 is useful to describe closeness centrality, it does not really give information on network computation itself. How are links defined and weighted? Are these number of co-occurrences, or over-representations? Are weights used in the centrality computation? How is emotional richness computed exactly? When referring to reconstructions around a given word, what the authors mean are ego-centered networks, with ties between neighbors?

Technical correction

abstract: "emotional patterns linked to a quick and pervasive spread of falsehoods" -> maybe "emotional patterns intended to trigger a quick and pervasive..." would be more precise

abstract could end with a take home / summary sentence opening perspectives, such as the ones in the conclusion, e.g. "mindset reconstruction could be an important tool to deal with infodemic communication materials facilitating the climate divide"

the networks are a bit hard to interpret because of their relatively density, and because
of the fact that they might have a same word that can be laid out in different places. I wonder whether it would be possible to either use the same layout using all possible words from both cases, or to guide the eye with some arrows or boxes to highlight important results that are discussed in main.

- **p5 l110** "from to key public speeches" -&gt; "from key..."

- **p7 l152** Closeness centrality is defined as the inverse average distance between a word and all its neighbours (Metcalf & Casey, 2016). -&gt; you mean and all other words in the full network, or in the ego-centered subnetwork?

- **p19 l358** in vivo flagging *of* online...