

The public discussion on scientific truth: the case of Esperantist-Epideictic discourse on Flat Earth

Abstract. There is a growing distrust in the institutions and science in the middle of ideological struggles. Some studies associate the spread of misinformation with the rise of ‘echo chambers’ powered by social media. We scrutinize how the public discourses about the Flat Earth have been shaped, considering not only the Flat Earthers (denialists) discursive production but also those in the name of science (affirmationists) that are attacking denialist groups and ideas. Findings show scientific truth is a part of conversations about the Flat Earth movement, and the Esperantist-Epideictic genre of discourse can be an analytical tool for researchers and educators.

1 The distrust in Science and the Flat Earth movement

There is a growing distrust in the institutions and science in the middle of ideological struggles. According to the Gallupe report of 2019, South and Central America are the regions where people tend to be most skeptical about the benefits of science reaching themselves [1]. As this field of study regarding the relationship between social media and public understanding of science has grown, new topics and strategies to tackle science denial are still emerging [2]. One emergent denialist group that is worth examining is the so-called *Flat Earth movement*. It means that the viewers were not actively looking for this type of content. Most of the videos are produced by Flat Earthers that create their own channel and occasionally sell products related to Flat Earth (books, models, art design, etc.). The video contents appeal to science, conspiracy theories, sensorial experiences, and religion, particularly to some trends of the Bible interpretation like Biblical literalism [3]. Our study addresses the question: How is the public discussion about Flat Earth use the notion of scientific truth in the polarized context of social media? We hypothesize that the public discourse around the flat Earth in social media is reinforced by and a reinforcement of the ‘echo chamber’ for both groups (attacking and defending). Both groups use notions of knowledge, scientific method, reality, and truth as unproblematic and dogmatic. Ultimately, the public discourse about the Flat Earth in social media might be trapped in a sort of discursive mirror, with no gain of understanding for the general public.

To characterize two dimensions of popular discourse on science, the Epideictic [4] and Esperantist [5] dimensions. We hypothesize that both dimensions bring together characteristics that we understand as constituents of the public discourse on science; thus, we characterize a discursive genre, which these two dimensions, which we call the Esperantist-Epideictic genre. This genre is an analytical tool to understand the development of public discussion about science and pseudoscience.

2 Methodology and findings

The analysis focuses on the discourse produced about the notion of Flat Earth by both groups, Flat Earthers (*science denialists*) and those attacking this notion (*science affirmationist*). Hence, we gathered data from popular videos on YouTube discussing the Flat Earth movement and Brazil’s 1st Conference for Flat Earthers (FlatCon). The data came from three sources: i) transcriptions from nine seminars held at FlatCon Brazil, available on their YouTube channel; ii) the ten most viewed videos on YouTube where affirmationist attacks

the notion of Flat Earth; and iii) semi-structured interviews conducted at FlatCon Brazil. The *corpus* consists of the YouTube videos (totalizing over nine hours of videos) that were transcribed and the audio-recorded interviews (one hour of interviews consisting of around 7.5 thousand words). We used thematic analysis and data-driven categories. Both denialists and affirmationists sustain that each one is the one looking for the truth, and further, the truth comes from experiments and observations that are unquestionable.

One of the main characteristics of Esperantism is the belief in an absolute truth that, in addition to being independent of the human being, can be accessed through increasingly accurate experiments. They generally disregard the historical development of scientific objects, which now corresponds to the truth itself, as if it were immutable. Perhaps one of the most striking features of the epideictic discourse, considering the praise and blame characteristic, is to not enter into debates. Thus, the speech does not need elaborate guarantees since it is addressed to the public already adept at ideas. The characteristic of “not debating” is also supported by the Esperantist position, since when one is on the side of absolute truth or objective reality, there is no need to discuss; their way of thinking also becomes absolute, unquestionable.

Conclusion

In a time where there is a growing consensus that science is under attack, the ways in which science defenders are trying to stand up to it may be causing some harm as well. The Esperantist-Epideictic discursive genre is commonly used to blame and belittle the opposing idea and to praise and ennoble the defending one might have a reinforcement effect on the public. However, in such conditions, the affirmationists discourse on a layperson or someone who already tends to believe in conspiracies might have an inverse effect -- a backfire effect. As it appears in many statements from denialists, the way affirmationists express their concern, underrate their ideas, or refuse to talk about it is evidence for the denialists that they are on the right path.

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