

Black Pete on Social Media: Echo chambers or Interactive Debate?

Calculating Argument Diversity in Online Discussion Threads



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BACKGROUND

Twitter Thread 1:

Con, Racial stereotype: contemporary

ohh yeah go back to your country thats a classic, over her [sic] we also got "zwarte piet" which brown but mostly black people get called a lot

Pro, Innocent

Most whites actually know the full story and don't let the narrative be pushed towards "white supremacists with black slaves". For us he is a symbol of kindness. Freeing poor children from a life of abuse. Praising "good" kids, punishing "bad" kids. Your see evil because you are.

Con, Racial stereotype: historical

whatever the full story behind zwarte piet is, your "symbol of kindness" it is still used by whites as a way to insult and hate black and brown people. it is literal black face in the 21st century. we dont see evil because we are, but because of the evil we've had to endure

Con, Racial stereotype: historical

black pete is losing support fast because people know it was only created in 1850 for the same reasons minstrel shows were. Especially for a country with such deep and lasting colonial history it's very painful to watch some excuse blackface.

Level1 (I1)	Level2 (I2)
Pro	Dutch tradition, Christian tradition, Innocent, Intention, Pre-christian, Oriental
Con	Racial stereotype: historical, Racial stereotype: contemporary

Platform	Total Threads	Total Messages
Twitter	21	125
Reddit	7	39
Gab	7	22

METHODOLOGY

Assumptions:

1. Each post contributes at least **one specific** argument.
2. Each argument is either 'pro' or 'con'.
3. **Repeating** arguments leads to less interactivity/diversity.

The thread as a whole receives a score based on the **interactivity** and **diversity** detected in the posts. This real-valued indicator (TIS_N) provides information on whether the presented arguments $1...N$ constitute an echo chamber, opposition flood or a balanced discussion. Repetition of a single reasoning weighs heavier towards the extremes, either echo chamber or opposition flood.

$$Share_i = \begin{cases} \frac{j(x_i)-1-\log_{10}(j(x_i)-1)}{N} * (-w) + \frac{1}{N} & \text{if } l2(x_i) = l2(x_0) \\ \frac{j(x_i)-\log_{10}(j(x_i))}{N} & \text{if } l2(x_i) \neq l2(x_0) \wedge l1(x_i) \neq l1(x_0) \\ \frac{j(x_i)-\log_{10}(j(x_i))}{N} * (-1) & \text{if } l2(x_i) \neq l2(x_0) \wedge l1(x_i) = l1(x_0) \\ 0 & \text{if } i = 1 \end{cases}$$

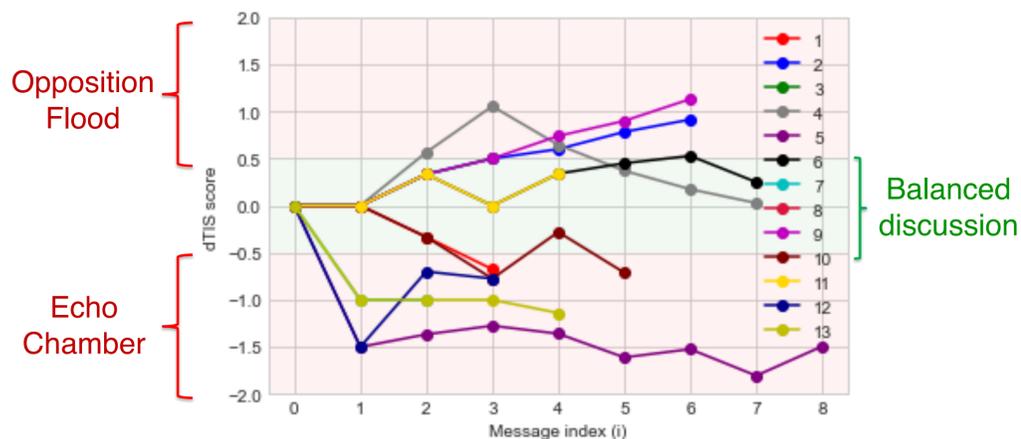
$$TIS_N = \sum_{i=1}^N Share_i$$

Individual posts receive a diversity score MIC_i , representing the extent to which this post **at the time of posting** contributed to the thread in terms of interactivity. Simply put, if the new post presents an argument that has not been part of the discussion, it contributes more to the thread compared to when perspectives are repeated. Subsequent repetition of identical arguments decreases the contributory factor.

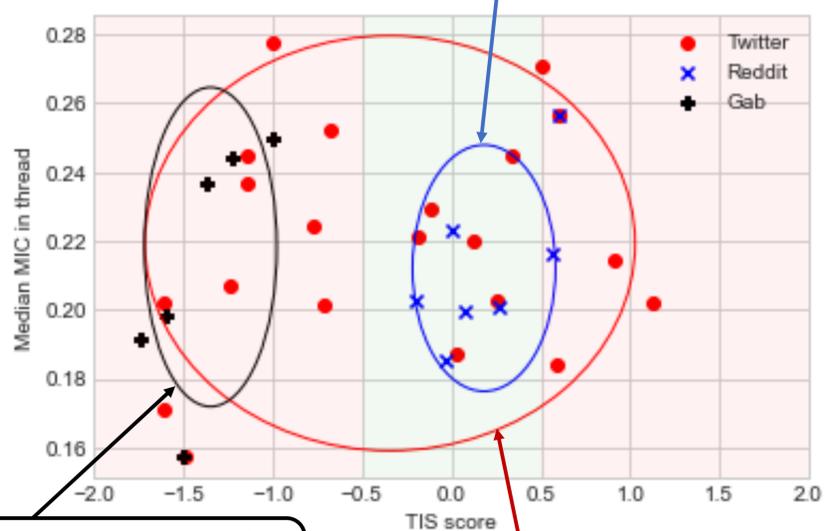
$$MIC_i = \begin{cases} \frac{1-\log_{10}(j(x_i))}{i} * w^{-1} & \text{if } l2(x_i) = l2(x_0) \\ \frac{(1-\log_{10}(j(x_i)))}{i} & \text{if } l2(x_i) \neq l2(x_0) \\ 0 & \text{if } i = 0 \end{cases}$$

RESULTS

Dynamic scores of Twitter threads:



Reddit discussion results in balanced discussion with the exception of two threads. Previous research put forward varied results depending on the subreddit in question [2].



Gab appears to exclusively host echo chambers, confirming previous research [1].

The 21 Twitter threads plotted here do collectively shift slightly towards echo chambers. This divergence in thread status is reflected in previous research, which report a variety in results regarding bias and homophily on Twitter feeds [3, 4].

REFERENCES

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- [4] Hywel T.P. Williams, James R. McMurray, Tim Kurz, and F. Hugo Lambert. Network analysis reveals open forums and echo chambers in social media discussions of climate change. Global Environmental Change, 32:126–138, 2015

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