

# ANTI-VACCINE MOVEMENT AND OTHER ALTERNATIVE BELIEFS IN SOCIAL MEDIA

Damian Serwata, Patrycja Jakimów, Alicja Potyrała  
Wroclaw University of Science and Technology, Wrocław, Poland



Pro-vaccine

Popular hashtags:  
• #VaccinesWork, #vaccines,  
#WHO, #medicine  
• Average sentiment: positive  
• Average retweets: 5  
• Average replies: 0.3  
• Average favourites: 7



Anti-vaccine

Popular hashtags:  
• #antivax, #autism, #MAGA  
• Average sentiment: negative  
• Average retweets: 2  
• Average replies: 0.75  
• Average favourites: 4

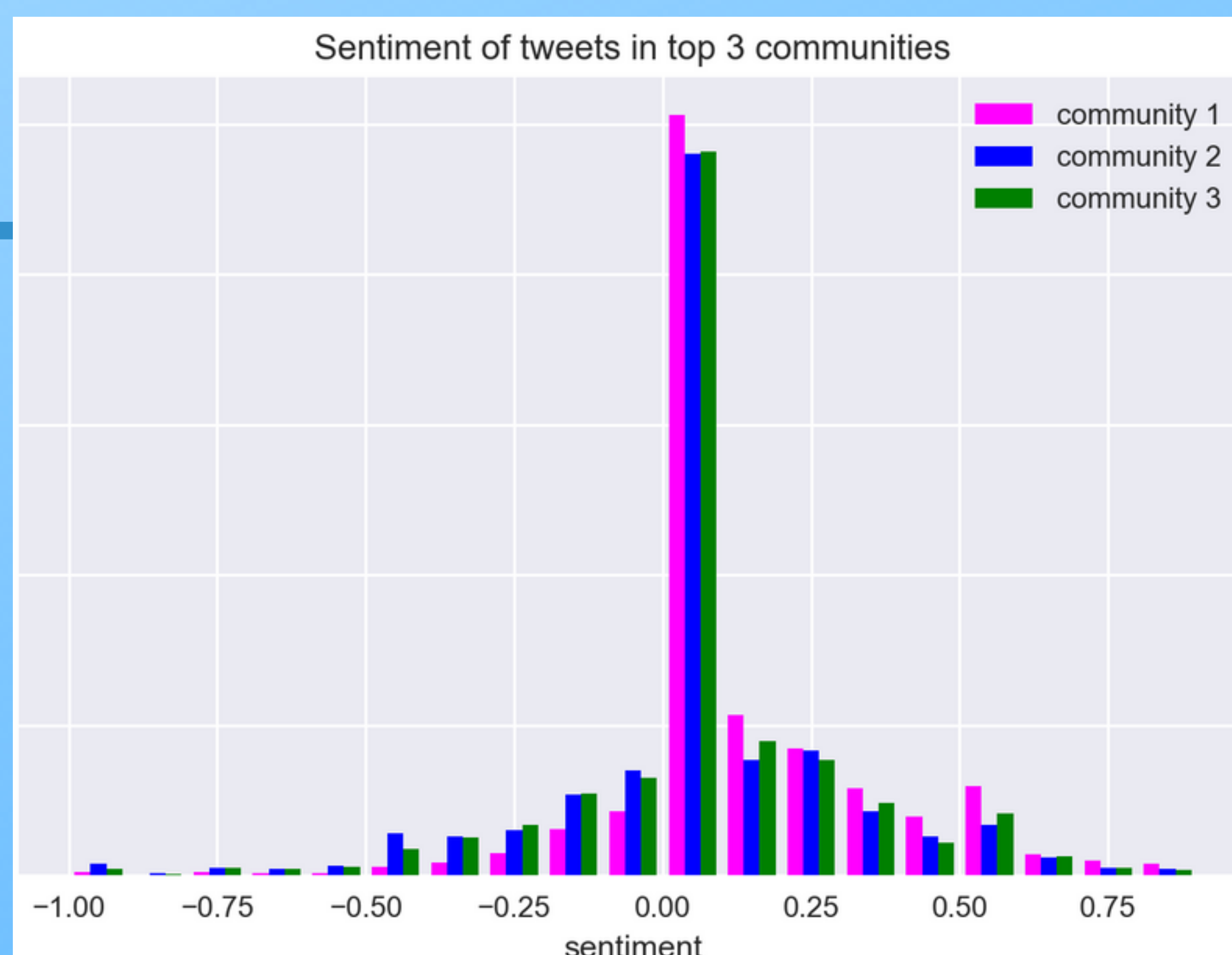
- The anti-vaccine community gets bigger each year in USA.
- Social Media is a communication channel for this and other groups of alternative beliefs.
- The purpose of the project was to uncover hidden relations between Twitter activity and events from the real world and to analyze different groups of alternative beliefs.



Schema of typical activity for pro and anti-vaccine user of Twitter. These extracted features allow to distinguish between those two groups.

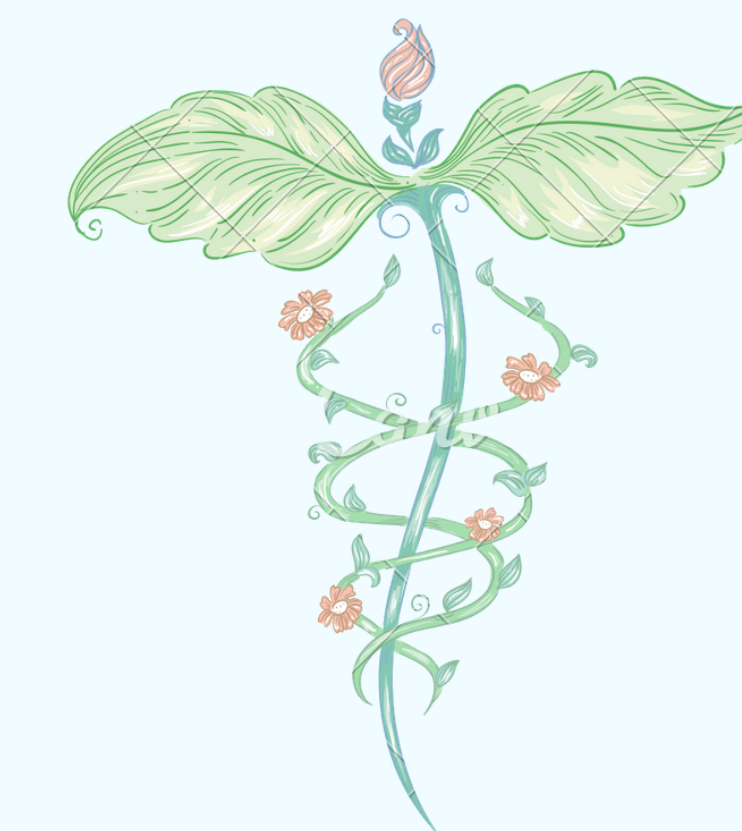
Distribution of tweets text sentiment for top 3 biggest communities detected in the network.

Correlation of anti-vaccine Twitter users activity with vaccine examinations in USA from 2010 to 2018.



~1%

Of anti-vaccine community users follow Flat Earth related channels  
@flatearthorg, @Theflateartherz, @flatearthrt



~30%

Of anti-vaccine community users follow alternative medicine related channels  
@HealthRanger, @MBHolicistic, @AlternMedicine1

Correlation between anti-vaccine users and other belief groups - Flat Earth Society and alternative medicine communities.

Average tweets sentiment shows which communities use a given hashtag most frequently in tweets with positive or negative emotional attitude.

