

Polarization of Climate Change Politics During Finland's 2019 Parliamentary Elections: Evidence from Twitter

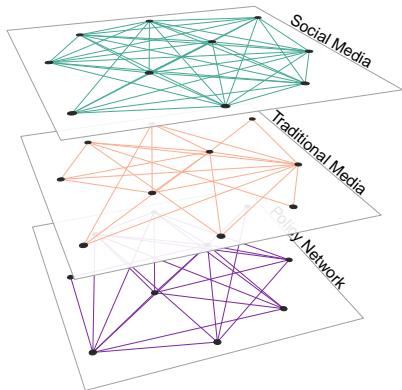
Ted Hsuan Yun Chen^{1,2} and Antti Gronow¹

¹University of Helsinki

²Aalto University

October 24, 2019

Echo Chambers, Experts and Activists: Networks of Political Communication (ECANET)



Principal Investigators:

Mikko Kivelä (Aalto Univ.)

Risto Kunelius (Univ. Helsinki)

Tuomas Ylä-Anttila (Univ. Helsinki)

Climate Change Politics and Polarization in Finland

- ▶ Historically, political polarization is relatively low; especially discourse on climate change politics.

Climate Change Politics and Polarization in Finland

- ▶ Historically, political polarization is relatively low; especially discourse on climate change politics.
- ▶ Recent empirical trends suggest this is changing. Why?

Climate Change Politics and Polarization in Finland

- ▶ Historically, political polarization is relatively low; especially discourse on climate change politics.
- ▶ Recent empirical trends suggest this is changing. Why?
- ▶ Is there increased polarization? and what is driving it?
 - ▶ Political versus non-political issues
 - ▶ Electoral politics
 - ▶ Social media?

Empirical Approach

Is there increased polarization in Finland? and what is driving it?

Empirical Approach

Is there increased polarization in Finland? and what is driving it?

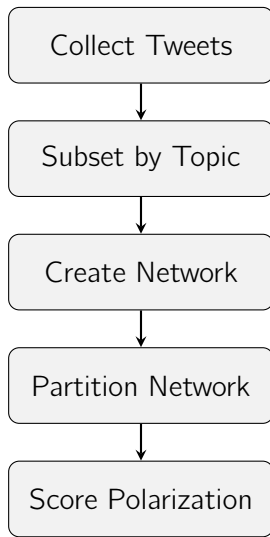
- ▶ Examine political communication via social media
- ▶ Are there filter bubbles in communication?

Empirical Approach

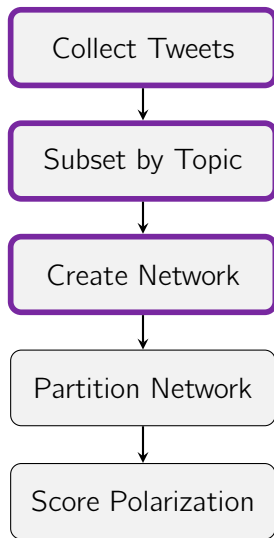
Is there increased polarization in Finland? and what is driving it?

- ▶ Examine political communication via social media
- ▶ Are there filter bubbles in communication?
- ▶ Quantify the extent to which communication is polarized
- ▶ Compare patterns across topics and time

Empirical Approach: Pipeline



Empirical Approach: Pipeline



Data Collection and Processing

- Tweets were collected during Jan. 20 - Apr. 14 using a list of politically relevant hashtags

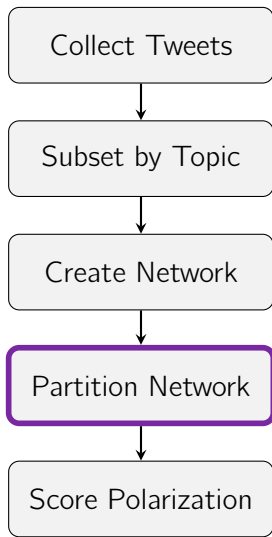
Data Collection and Processing

- ▶ Tweets were collected during Jan. 20 - Apr. 14 using a list of politically relevant hashtags
- ▶ Subset tweets by topics and by time

Data Collection and Processing

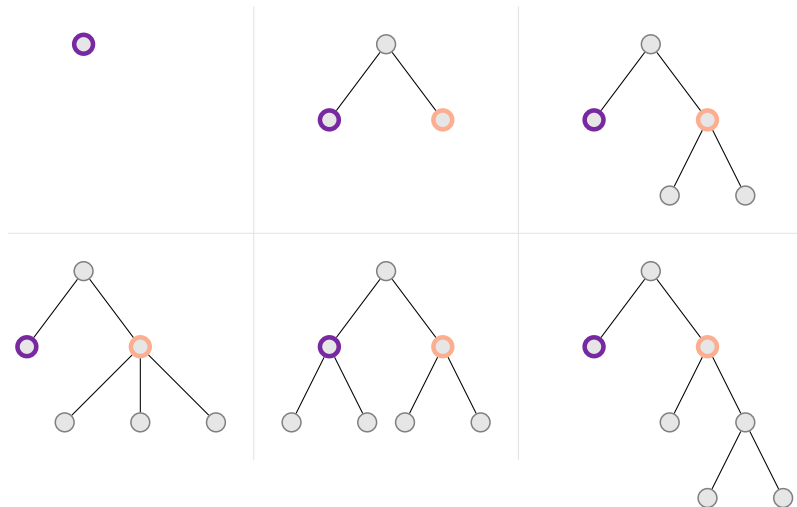
- ▶ Tweets were collected during Jan. 20 - Apr. 14 using a list of politically relevant hashtags
- ▶ Subset tweets by topics and by time
- ▶ Create retweet networks:
 - ▶ Nodes are Twitter accounts
 - ▶ Unweighted ties are presence of a retweet between the two accounts on the topic of interest

Network Partitioning

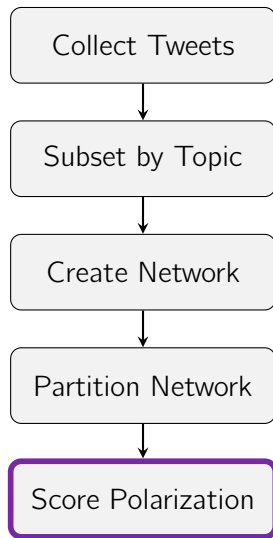


Network Partitioning

Different stochastic block model specifications



Random Walk Polarization

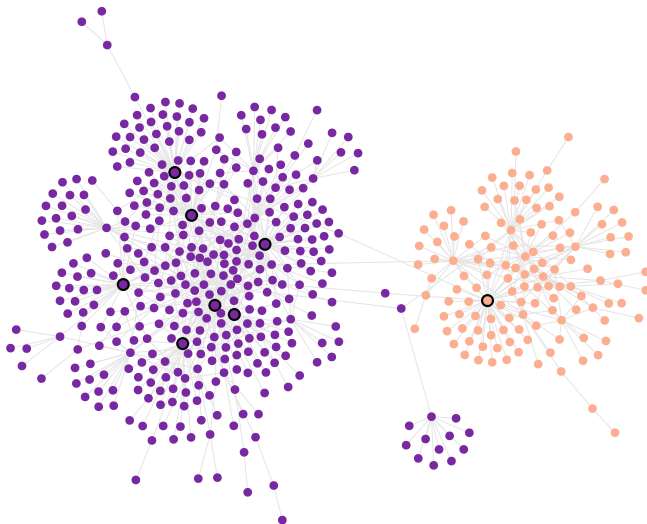


Random Walk Polarization

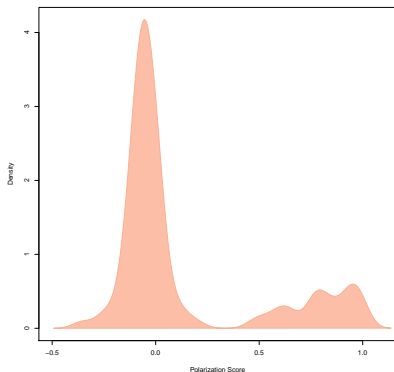
How likely is information to reach across partitions?

Random Walk Polarization

How likely is information to reach across partitions?



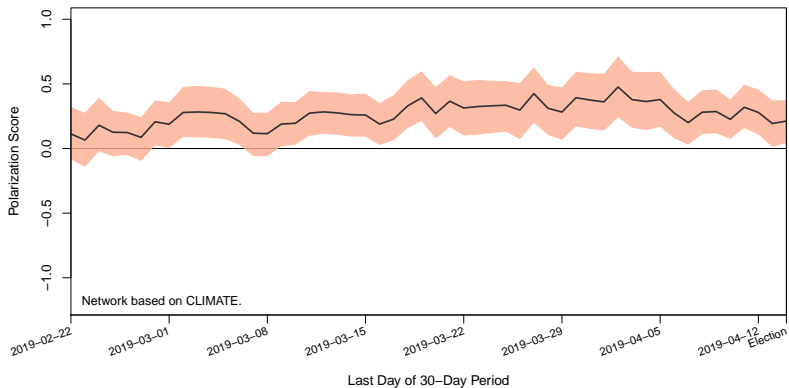
Results: Distribution of Topic Polarization



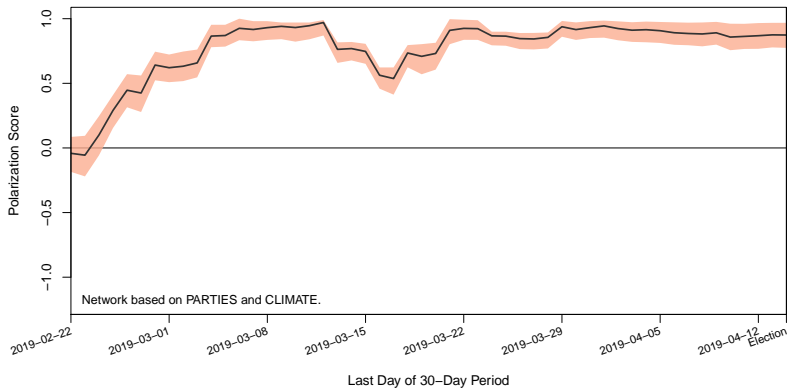
Ten Most Polarized Hashtags

social democrats	future line
climate march	hate speech
populist party	freedom of speech
left party	same direction
oulu	green party

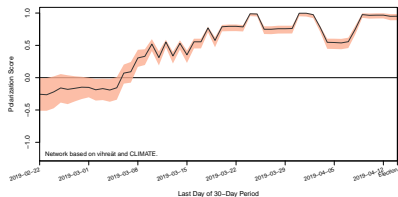
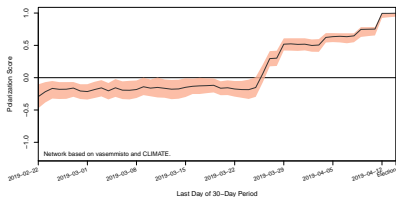
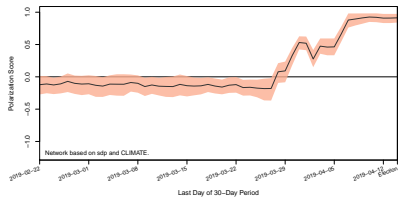
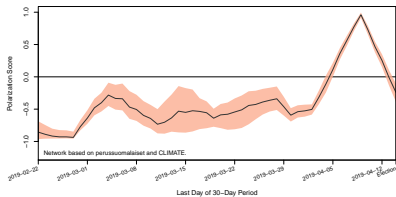
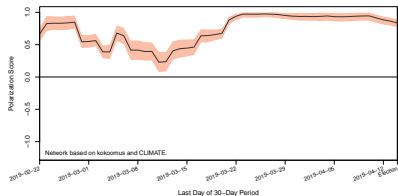
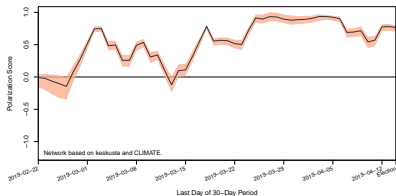
Results: Climate



Results: Overlapping Climate and Parties



Results: Overlapping Climate and Parties



Conclusion

- ▶ Moderate political polarization in climate change politics

Conclusion

- ▶ Moderate political polarization in climate change politics
- ▶ Party-related discussions drive polarization, especially as elections approach

Conclusion

- ▶ Moderate political polarization in climate change politics
- ▶ Party-related discussions drive polarization, especially as elections approach
- ▶ Polarization not a general feature of social media; context matters

Conclusion

- ▶ Moderate political polarization in climate change politics
- ▶ Party-related discussions drive polarization, especially as elections approach
- ▶ Polarization not a general feature of social media; context matters

The code used in this project will be available after this presentation at https://github.com/tedhchen/twitter_network_polarization_tools

The slides will be available at https://tedhchen.com/compon_slides.pdf

Contact:

Antti: antti.gronow@helsinki.fi

Ted: ted.hsuanyun.chen@gmail.com