

Social Issues and Social Media

Max Pellert

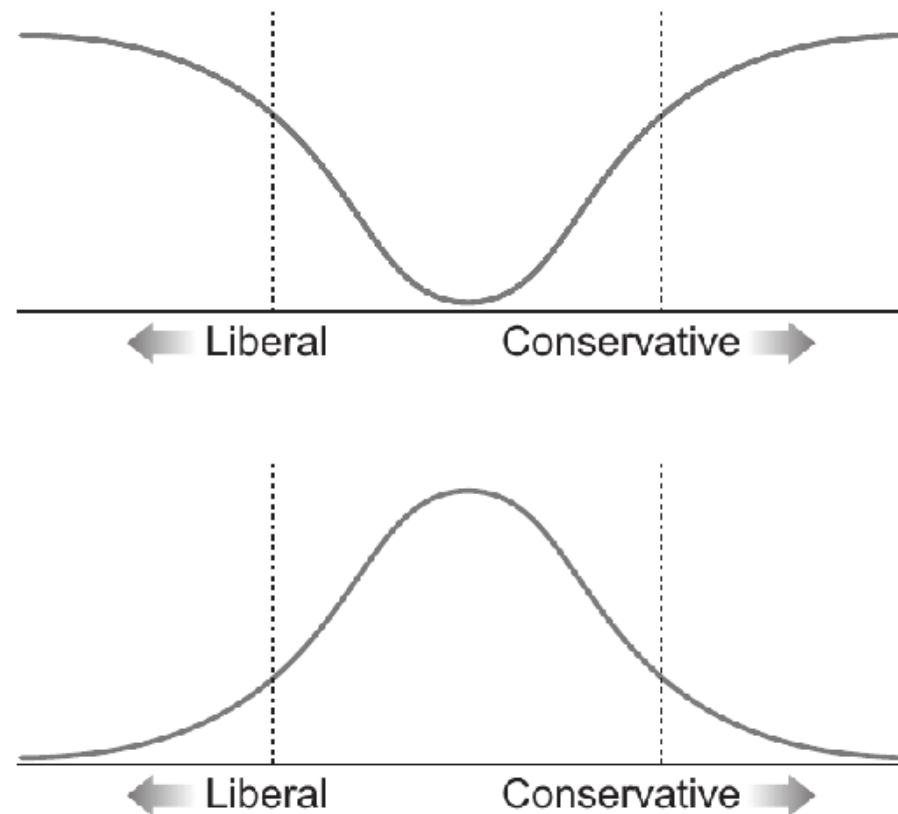
University of Konstanz

Social Media Data Analysis

Outline

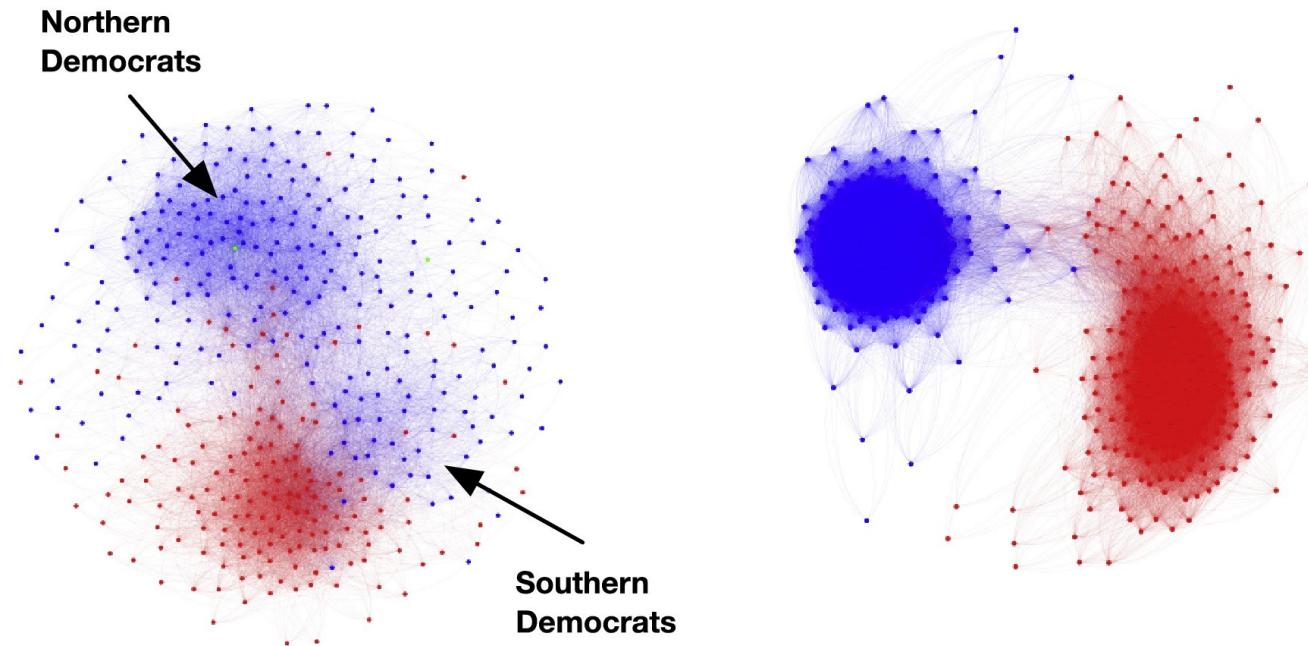
- 1. Polarization and digital technologies**
- 2. Misinformation and information disorder**
- 3. Representation issues - The case of Twitter**

Definitions: Opinion polarization



Opinion polarization: Two opinion groups with extreme distance in between
Political Polarization in the American Public. Fiorina & Abrams (2008)

Definitions: Relational polarization



Relational polarization: Social structure divided into two groups with high internal connectivity and low inter-group connectivity
A sign of the times? Weak and strong polarization in the U.S. Congress, 1973–2016. Neal (2020)

Echo chambers vs filter bubbles

Early definitions of the filter bubble focused on search results and personalization but not on polarized social structures (algorithmic definition).

The filter bubble: What the Internet is hiding from you. Eli Pariser (2011)

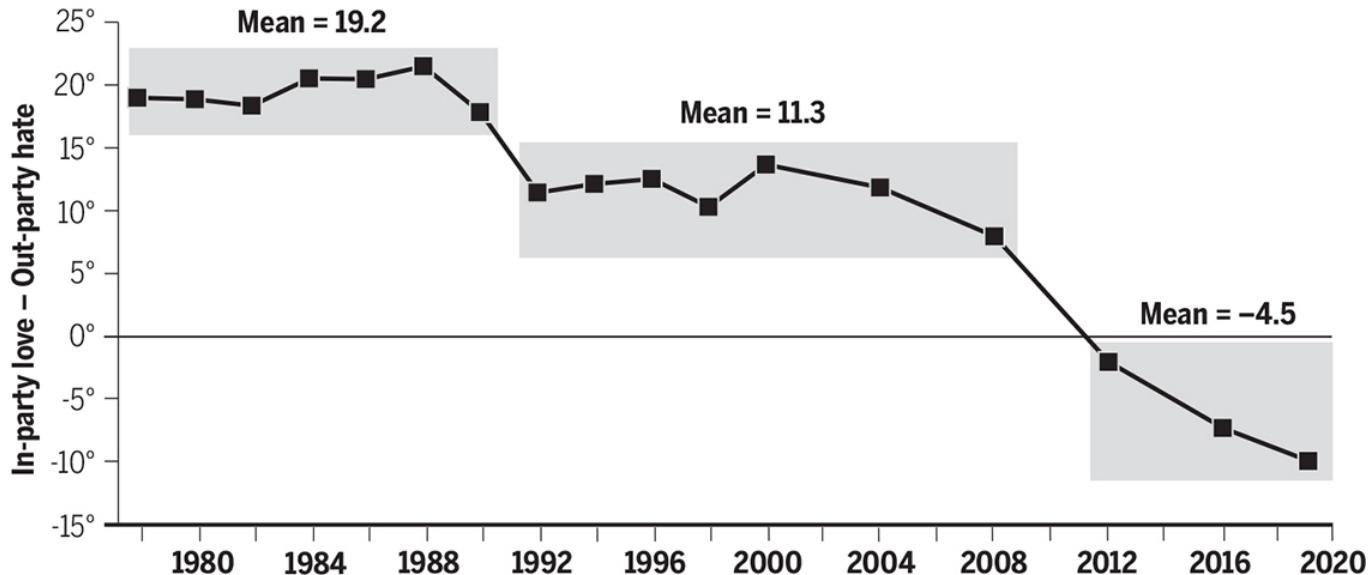
Axel Bruns's definitions to distinguish echo chambers from filter bubbles:

- An **echo chamber** comes into being where a group of participants choose to preferentially connect with each other, to the exclusion of outsiders.
- A **filter bubble** emerges when a group of participants, independent of the underlying network structures of their connections with others, choose to preferentially communicate with each other, to the exclusion of outsiders.

Echo chamber? What echo chamber? Reviewing the evidence Axel Bruns (2017)

Are filter bubbles real? Axel Bruns (2019)

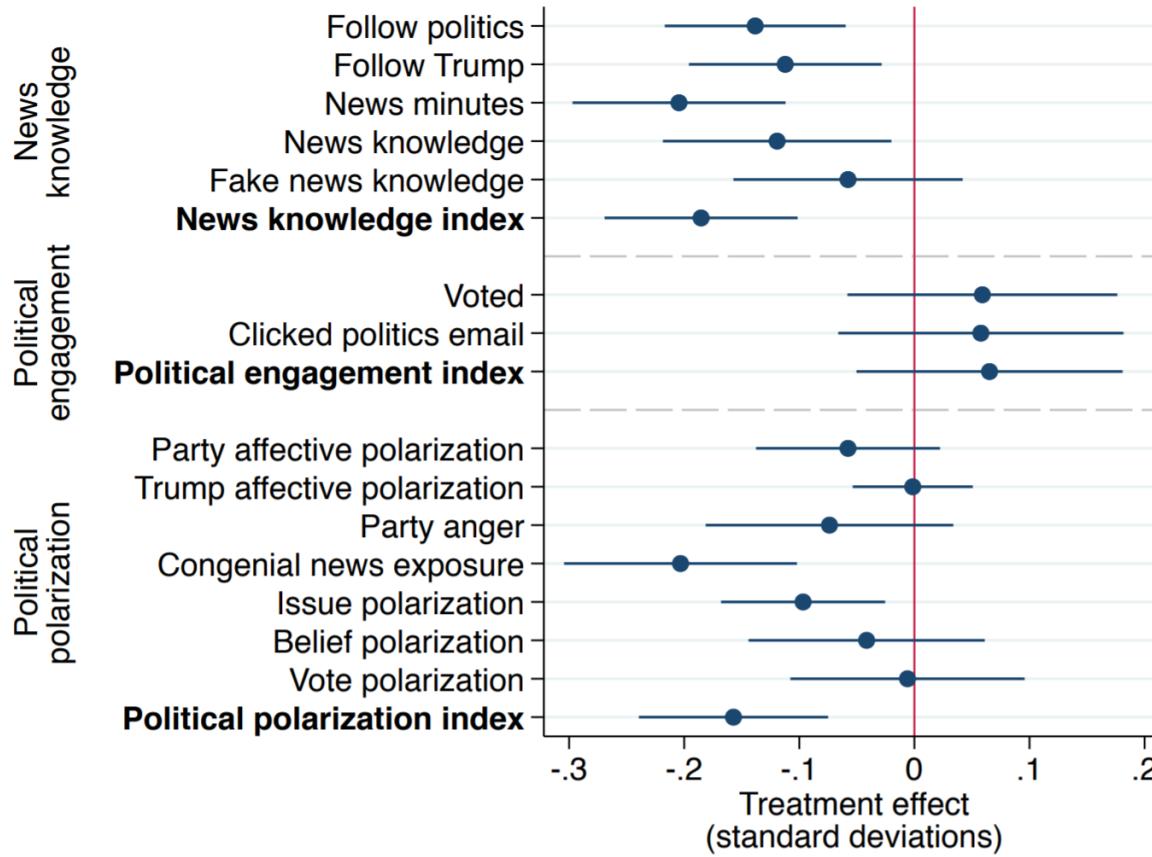
Definitions: Affective polarization



Affective polarization: Extreme support within groups and hate across groups
The Origins and Consequences of Affective Polarization in the United States.
Iyengar et al. Annual Review of Political Science (2019)

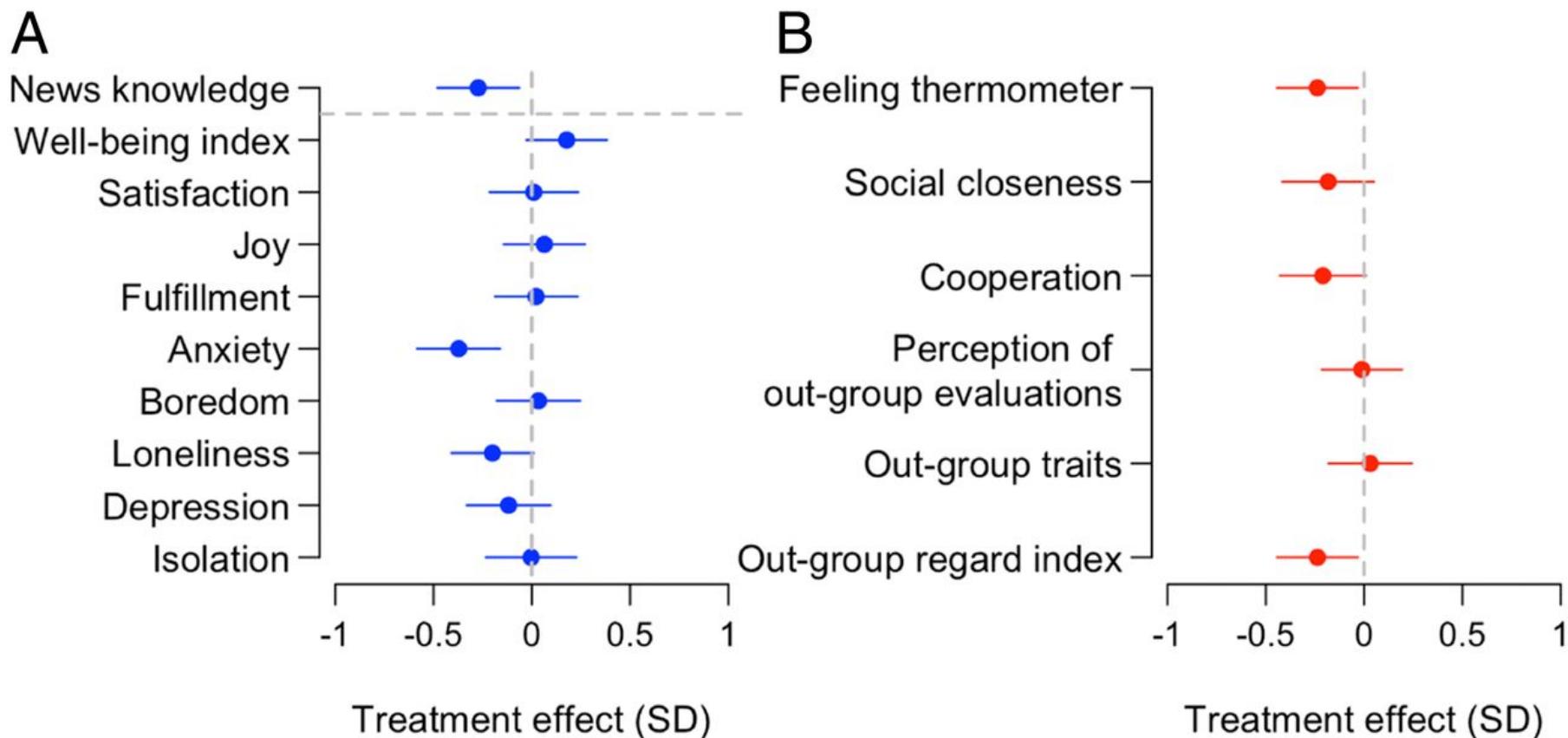
Political sectarianism in America. Finkel et al. Science (2020)

The leaving Facebook experiment: US case



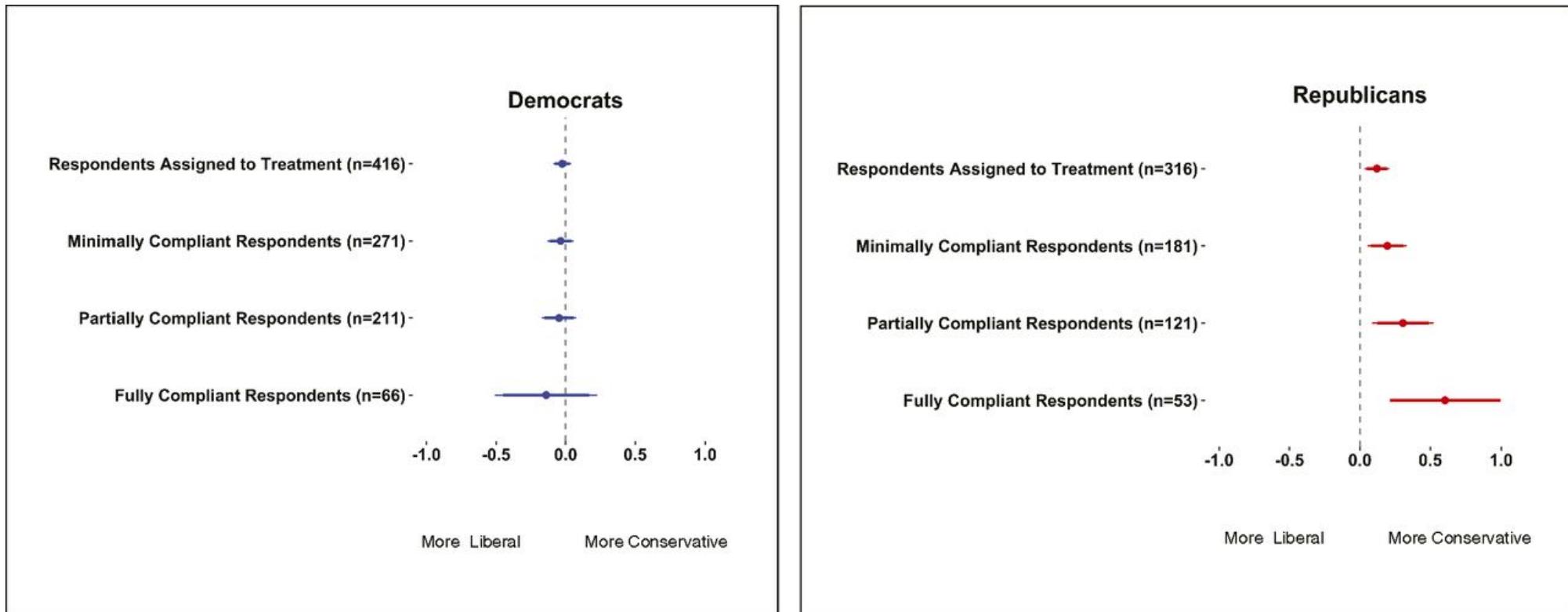
The welfare effects of social media. Allcott et al. (2019)

When leaving Facebook makes things worse: The Bosnia case



Testing the effects of Facebook usage in an ethnically polarized setting. Asimovic et al. (2021)

Backfire effects on Twitter experiments



Exposure to opposing views on social media can increase political polarization.
Bail et al. (2018)

Does social media create polarization?

The role of social media is not the same in all conflicts.

The question "does social media create polarization?" implies an oversimplification of the problem:

- use of social media (e.g. Facebook vs Twitter)
- the definition of polarization (e.g. affective vs opinions)
- the social context of polarized societies (e.g. partisan vs ethnic).

The issue of polarization is an example of why we need precise and robust definitions, why we need research on many different platforms, and why we need no-WEIRD (Western, Educated, Industrialized, Rich and Democratic) populations in research.

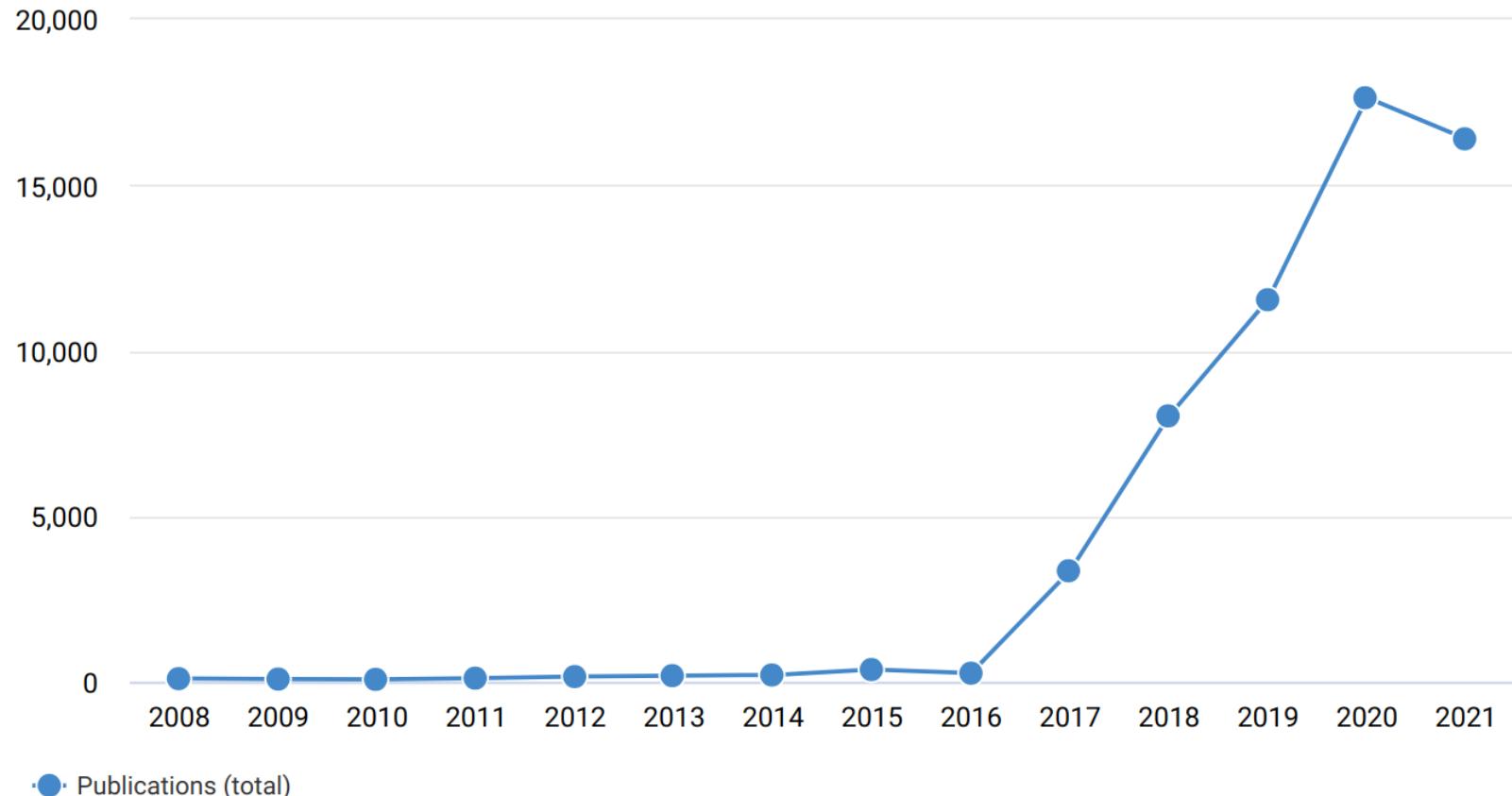
Misinformation and information disorder

1. Polarization and digital technologies

2. *Misinformation and information disorder*

3. Representation issues - The case of Twitter

The hot topic of fake news



Number of publications including the term "fake news" per year, Dimensions.ai

Fake news during the 2016 US presidential election

ALL NEWS ABOUT POLITICS

ELECTIONS 2016 POLITICS USA NEWS

BREAKING: PROOF SURFACES THAT OBAMA WAS BORN IN KENYA – TRUMP WAS RIGHT ALL ALONG...

October 31, 2016 admin 0

PROOF SURFACES THAT OBAMA WAS BORN IN KENYA – TRUMP WAS RIGHT ALL ALONG... Kenya has been the main reason why Obama has been dealing [...]

Pope Francis Forbids Catholics From Voting For Hillary!

By admin Posted in: **CATHOLIC** 0

Cardinal Ratzinger, who became Pope Benedict XVI in 2005 and served through 2013, wrote a blistering letter in 2004 forbidding Catholics from voting for pro-abortion Hillary Clinton or anyone who espouses her ideas. The letter reads: The Church teaches that abortion or euthanasia is a grave sin. The Encyclical Letter *Evangelium Vitae*, with reference to ...

Robert De Niro Switches To Trump Shocks Hollywood

By admin Posted in: **CULTURE** 0

Many Hollywood celebrities have openly spoken about their faith in Donald Trump, but one comes as a surprise to many. The last celebrity that opened up on the matter is a well-respected actor, director, and a true movie star, whose voice is definitely heard in Hollywood. Today, right next to Trump stands Robert De Niro, ...

Bill Clinton's S*x Tare Just Leaked (VIDEO)

October 28, 2016 admin 0

While the mainstream media continues to target Donald Trump for s*xual assault allegations, despite the fact that there is no evidence to support them, it [...]

BILL CLINTON'S S*X TAPE JUST LEAKED

Oprah Tells FOX News Host 'Some White People Have To Die', Her Reasoning Is Unbelievable

<https://www.buzzfeednews.com/article/craigsilverman/how-macedonia-became-a-global-hub-for-pro-trump-misinfo>

Clickbait made in Veles, North Macedonia

WORLD

How Teens In The Balkans Are Duping Trump Supporters With Fake News

BuzzFeed News identified more than 100 pro-Trump websites being run from a single town in the former Yugoslav Republic of Macedonia.



Craig Silverman

BuzzFeed Founding Editor, Canada



Lawrence Alexander

BuzzFeed Contributor

Posted on November 3, 2016, at 7:02 p.m. ET

Tweet

Share

Copy



Getty Images / BuzzFeed News

The Macedonian Fake News Industry and the 2016 US Election. H. Hughes and I. Waismel-Manor (2021)

Terminology about misinformation

False Information



Information Disorders



Conspiracy And Propaganda



- **False information:**
 - False or fake news: news-like content that is verifiably false
 - False rumours: General talk or hearsay not based on factual knowledge
 - Factitious information blends: half-truths and speculations
 - Satire and parody
 - Deep fakes and cheap fakes

Technology and democracy: Understanding the influence of online technologies on political behaviour and decision-making. S. Lewandowsky, et al. (2020)

Terminology about misinformation

False Information



Information Disorders



Conspiracy And Propaganda



- **Information disorders:**

- **Misinformation:** false or misleading content shared without malicious intent
- **Disinformation:** false or fabricated content shared with the intent to mislead or cause harm
- **Malinformation:** true information shared to cause harm (hate speech, private information)

Information disorder: Toward an interdisciplinary framework for research and policymaking. C. Wardle and H. Derakhshan (2017)

Terminology about misinformation

False Information



Information Disorders



Conspiracy And Propaganda



- **Propaganda:** Information, especially of a biased or misleading nature, used to promote a political cause or point of view. Can be political or industrial
- **Systematic lies:** Carefully constructed fabrications or obfuscations (e.g. weapons of mass destruction in Irak)
- **Conspiracy theories:** Alternative explanations for traditional news events which assume that these events are controlled by a secret elite group

Comparing fact-checked content

Fact Checks > Politics > Conspiracy Theories

Is Comet Ping Pong Pizzeria Home to a Child Abuse Ring Led by Hillary Clinton?

A detailed conspiracy theory known as "Pizzagate" holds that a pedophile ring is operating out of a Clinton-linked pizzeria called Comet Ping Pong.

By Kim LaCapria
Published 21 November 2016



Snopes

Rating

 **False**
About this rating ↗

Rating

 **Originated as Satire**
About this rating ↗

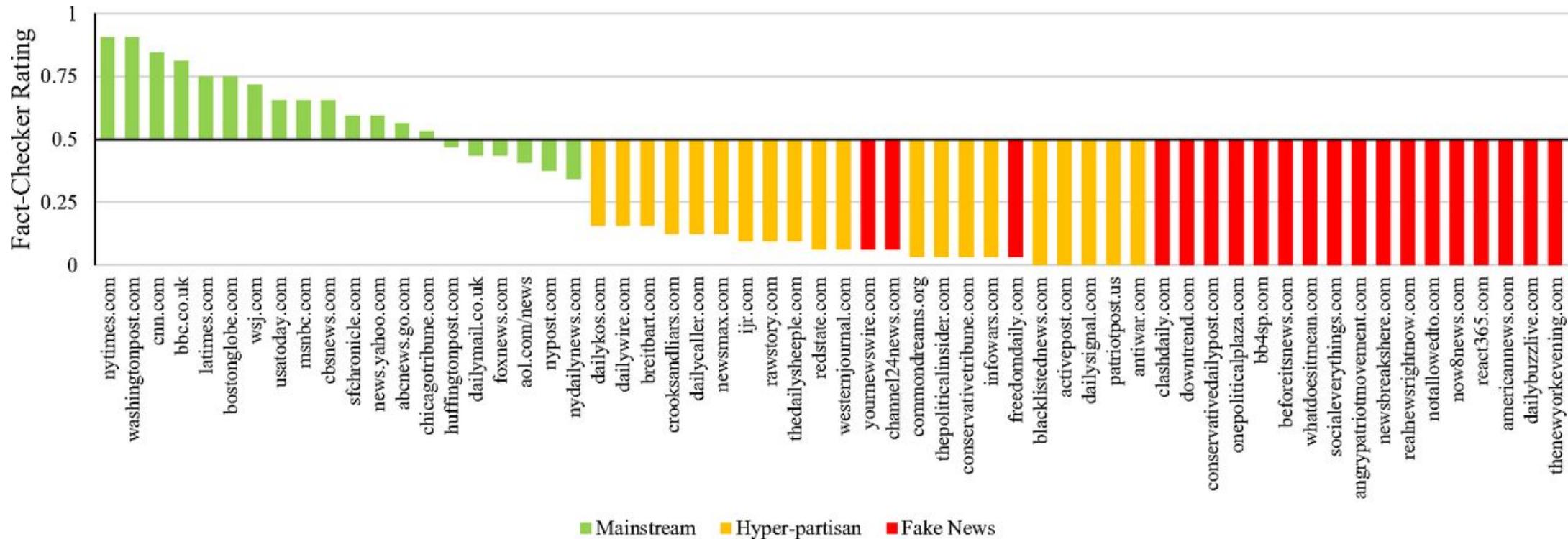
Rating

 **True**
About this rating ↗

Caution: True Snoped tweets != Legitimate news sharing

The spread of true and false news online. S. Vosoughi, D. Roy, S. Aral (2018)

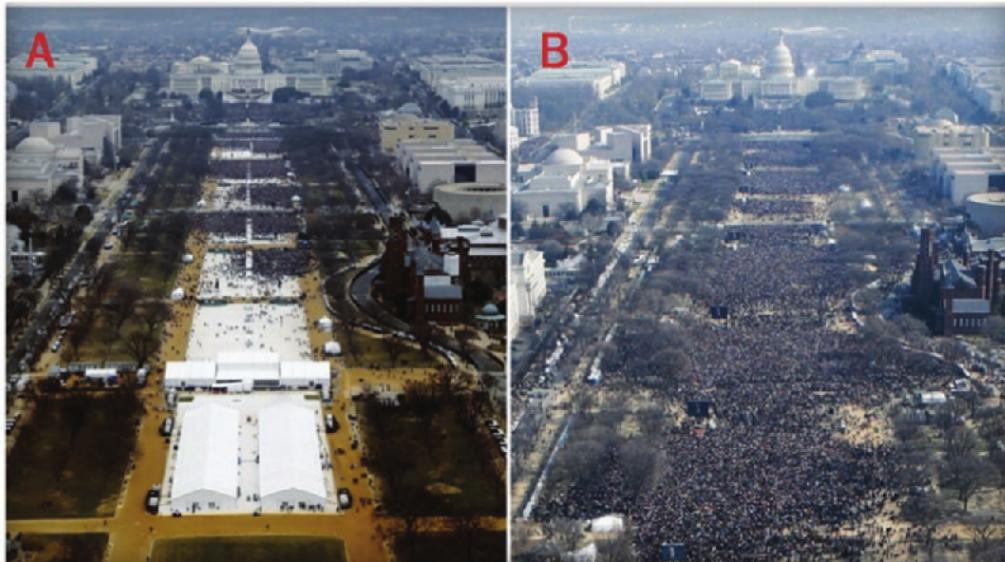
Detection via domain quality lists



Fighting misinformation on social media using crowdsourced judgments of news source G. Pennycook, D. Rand (2019)
Fake news on Twitter during the 2016 US presidential election. N. Grinberg, et al (2018)

When the users help spreading: Collaborative disinformation

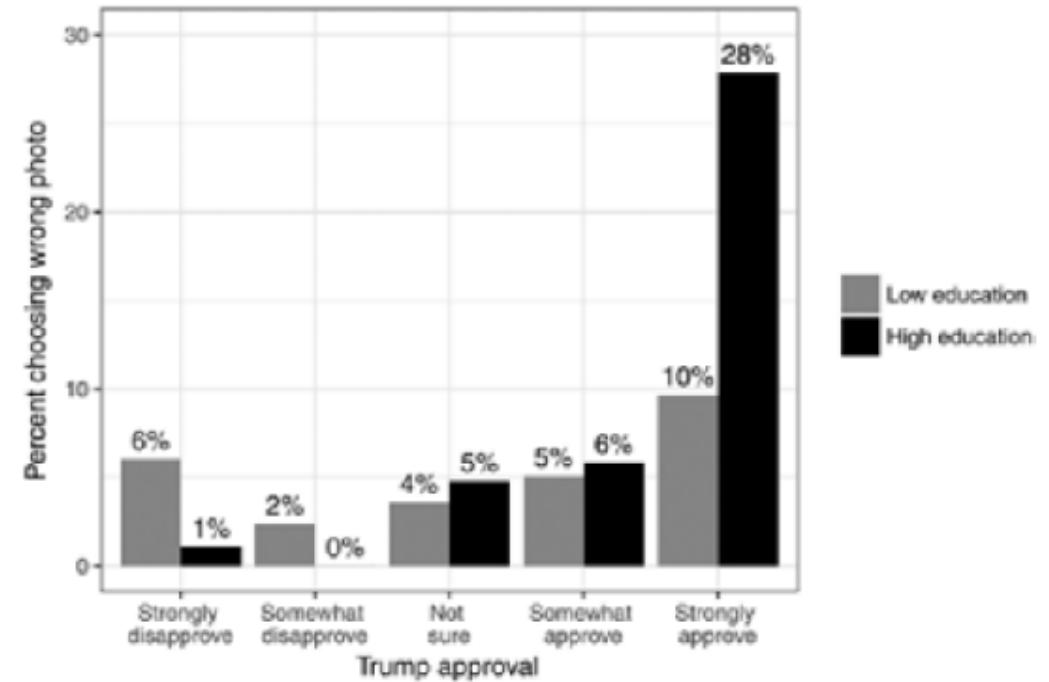
Please look at the following two photos: Photo A and Photo B.



Which photo has more people?

Photo A has more people

Photo B has more people



Misinformation or expressive responding? What an inauguration crowd can tell us about the source of political misinformation in surveys. Schaffner & Luks. Public Opinion Quarterly (2018)

Disinformation's spread: bots, trolls and all of us. K. Starbird (2019)

Fighting misinformation: priming and inoculation

HOW ACCURATE IS THIS HEADLINE?



Woman who had ovary frozen in childhood give...
She is believed to be the first woman in the world to have a baby after having ovarian tissue frozen before...
surveycamel.com

Thanks for following me! Can I ask you a favor? I'm wondering how accurate the above headline is, and I'm doing a survey to find out.

surveycamel.com/ze/news/story5...

Based on the headline, do you think it is accurately describing something that actually happened?

Please rate as: 1=Not at all accurate, 2 = Not very accurate, 3= Somewhat accurate, 4 = Very accurate

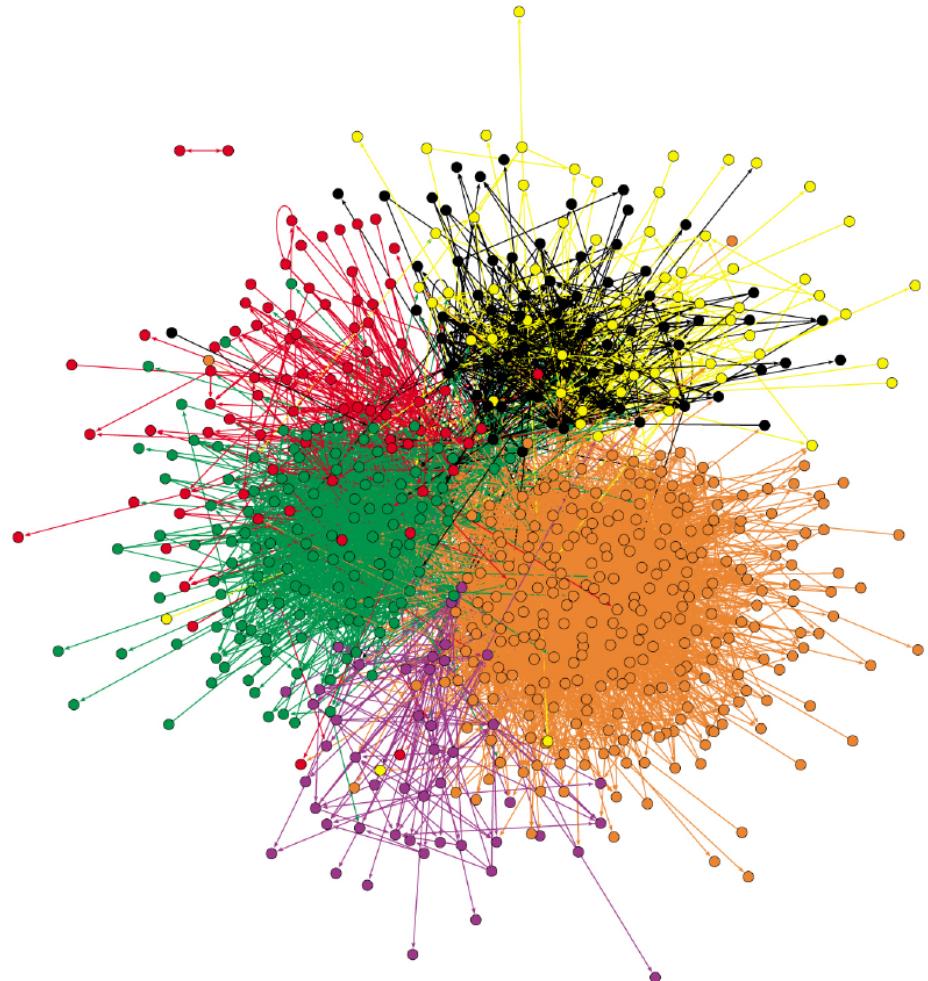


Shifting attention to accuracy can reduce misinformation online. G. Pennycook, et al. (2021)
Counteracting misinformation and fake news through inoculation and prebunking. S. Lewandowsky, S. Van Der Linden (2021)

Representation issues - The case of Twitter

- 1. Polarization and digital technologies**
- 2. Misinformation and information disorder**
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Politicians on Twitter



- Example of social network among German Politicians on Twitter from Lietz et al, 2014
- Nodes are the Twitter accounts of politicians
- Directed links link a politician that follows another
- Node color corresponds to the party of a politician
- Force-directed layout

Predicting the German elections with Twitter

Party	All mentions		Election	
	Share of		Election result*	Prediction error
	Number of tweets	Twitter traffic		
CDU	30,886	30.1%	29.0%	1.0%
CSU	5,748	5.6%	6.9%	1.3%
SPD	27,356	26.6%	24.5%	2.2%
FDP	17,737	17.3%	15.5%	1.7%
LINKE	12,689	12.4%	12.7%	0.3%
Grüne	8,250	8.0%	11.4%	3.3%
			MAE:	1.65%

* Adjusted to reflect only the 6 main parties in our sample

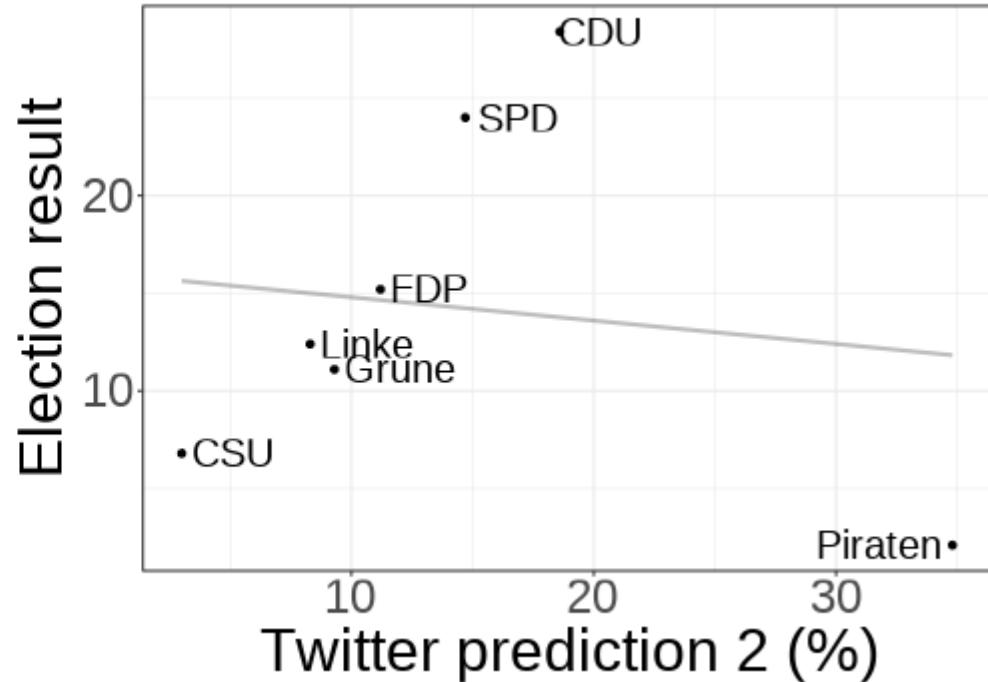
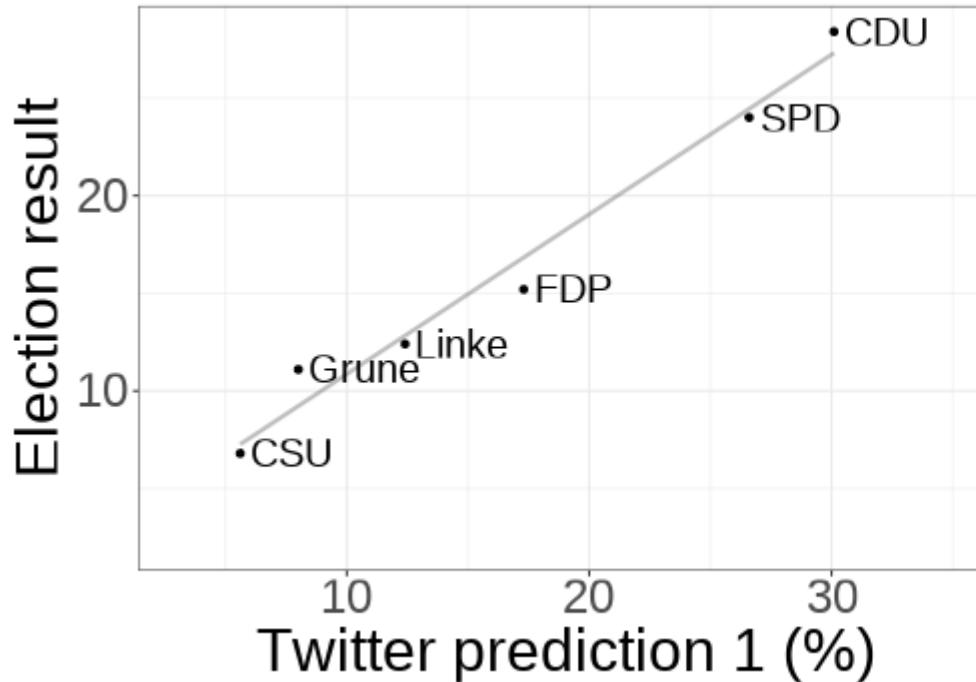
- German election Twitter prediction, from Tumasjan et al, 2010
- Same ranking, prediction errors on average less than 2%!
- "the mere number of messages reflects the election result and even comes close to traditional election polls". Why are we still using traditional surveys?

The Victory of the Pirate Party

Party	Election Results	Share of Twitter Messages (Replication)
CDU	28.4	18.6
CSU	6.8	3.0
SPD	24.0	14.7
FDP	15.2	11.2
Linke	12.4	8.3
Grüne	11.1	9.3
Piraten	2.1	34.8

- Study replication by Jungherr et al, 2012.
- Not to judge parties beforehand, they included the Pirate Party too, not just the six most voted parties in the previous election.
- The Pirate Party would have won by landslide, with almost double the mentions the second party got on Twitter

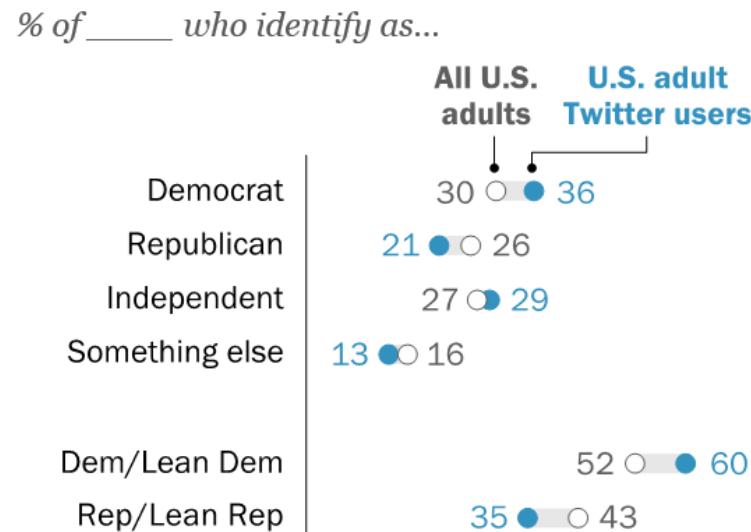
Comparing original results and replication



Jugherr and colleagues found other issues with the original prediction, for example how small changes in the dates considered for the analysis had a dramatic impact on the results.

Who uses Twitter?

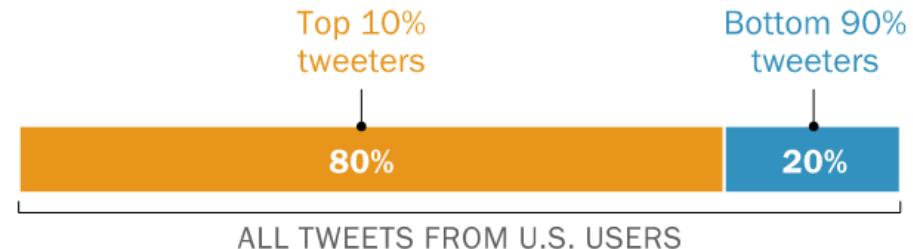
Twitter users more likely to identify as Democrats than Republicans



PEW RESEARCH CENTER

A large majority of tweets come from a small minority of tweeters

Share of all tweets from U.S. adult users created by ...



Note: No institutional accounts are included.

Source: Survey of U.S. adult Twitter users conducted Nov. 21-Dec. 17, 2018. Data about respondents' Twitter activity collected via Twitter API.

"Sizing Up Twitter Users"

PEW RESEARCH CENTER

Pew Internet Research survey data from 2018

Can we predict election results with Twitter?



by Daniel Gayo-Avello

Estimating public opinion through tweets suffers self-selection bias

Summary

- **Polarization and digital technologies**
 - Definitions: opinions, relations, and affect
 - Echo chambers and filter bubbles
 - Experiments and questions about the role of social media
- **Misinformation and information disorder**
 - How fake news became an issue in 2016
 - Terminology about misinformation and information disorder
 - Detecting and intervening on misinformation
- **Representation issues - The case of Twitter**
 - Political research using Twitter
 - Predicting elections with Twitter data?
 - Comparing Twitter users and the rest of the population