SCHOOL OF INFORMATION CENTER FOR SOCIAL MEDIA RESPONSIBILITY
UNIVERSITY OF MICHIGAN

Australian National University

The Shapes of the Fourth Estate During the Pandemic: Profiling COVID-19 News Consumption in Eight Countries

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The power of media

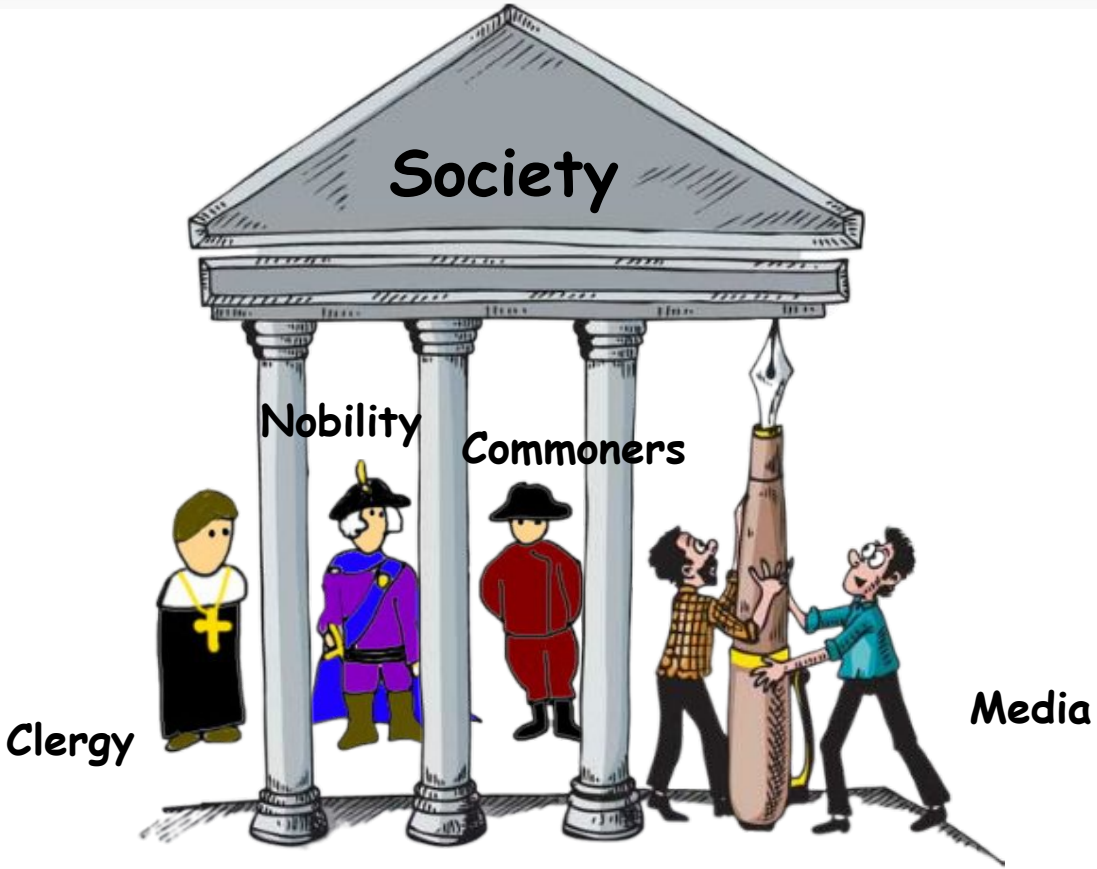
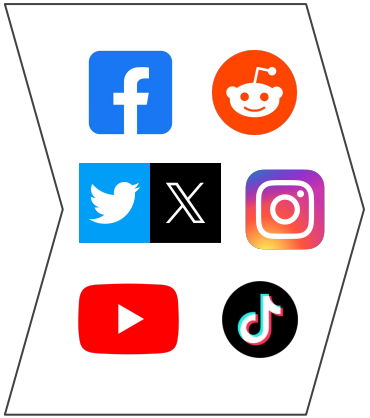


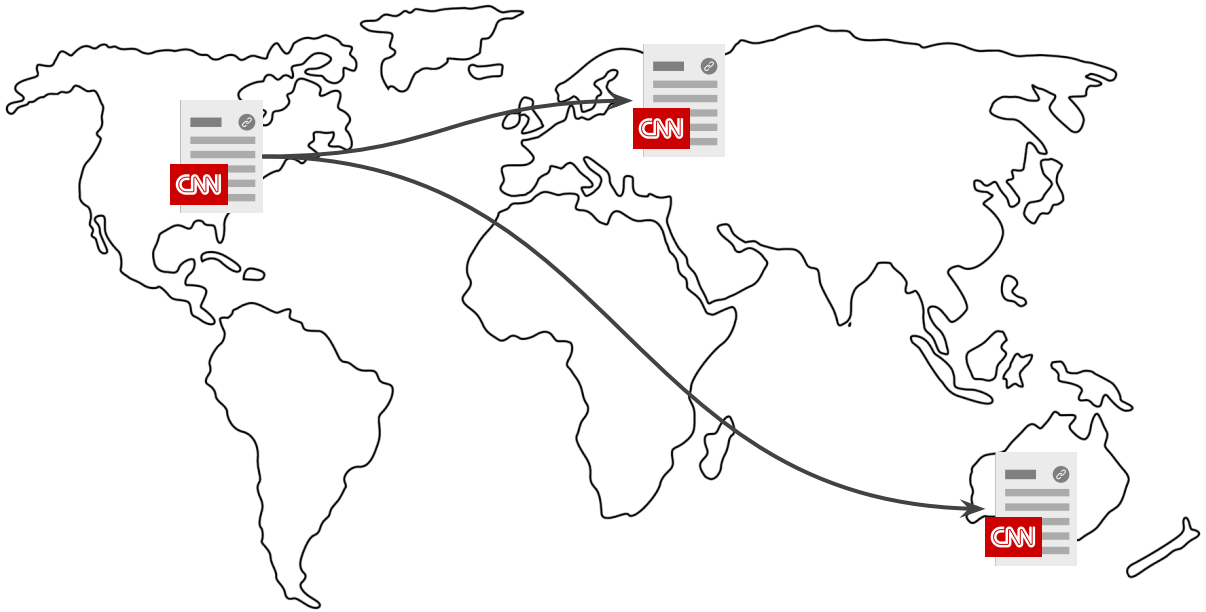
Image: https://bottomupdemocracy.wordpress.com/the-first-3-estates-and-media-in-democracy/
https://authenticityinjournalism.wordpress.com/fourth-estate/

Social media channels news to the world

CNN FOX MSNBC BBC REUTERS sky news BREITBART



RQ 1: Global media readership



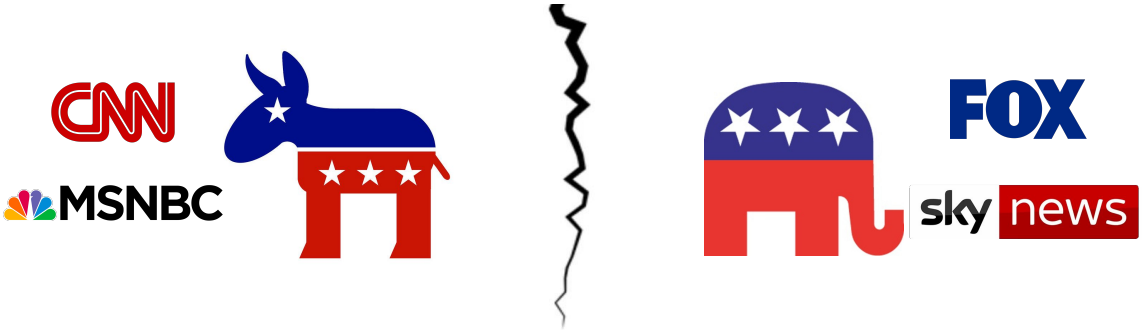
Content-based media bias rating

Ratings based on online, US political content only

News consumption: Two stories

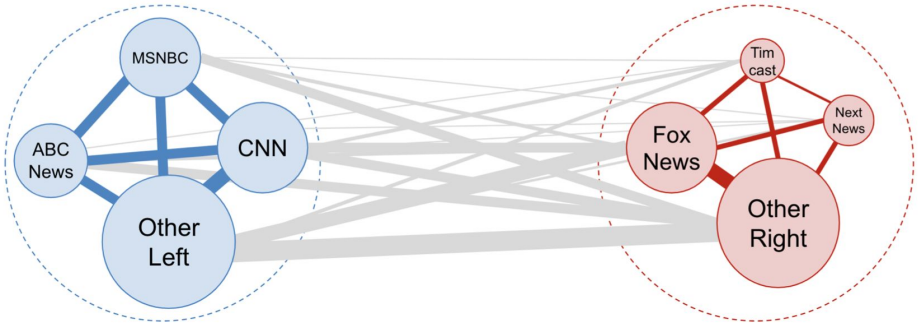
Selective exposure

(Hart et al. 2009; Sunstein 2018)

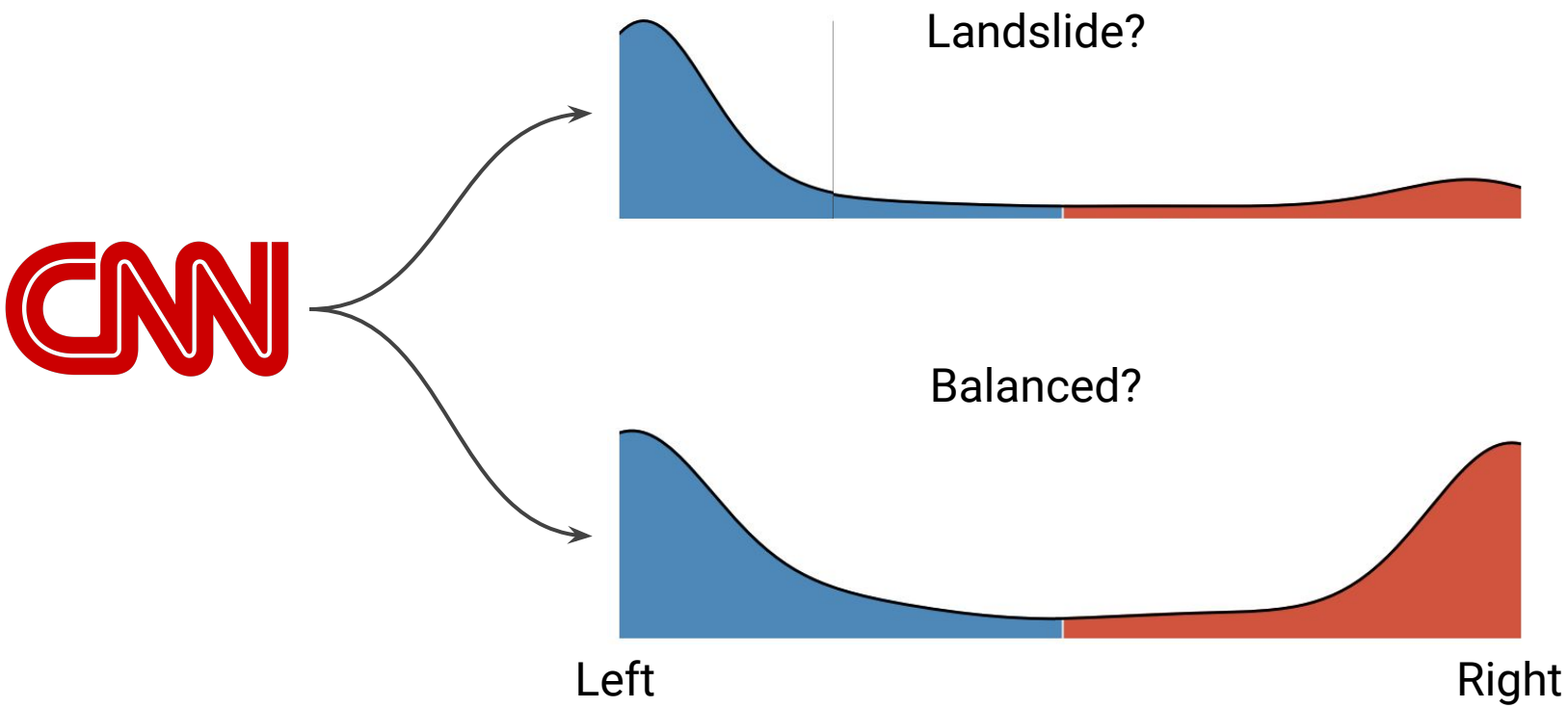


Cross-partisan communication

(An et al. 2019; Wu and Resnick 2021)



RQ 2: Shape of media readership

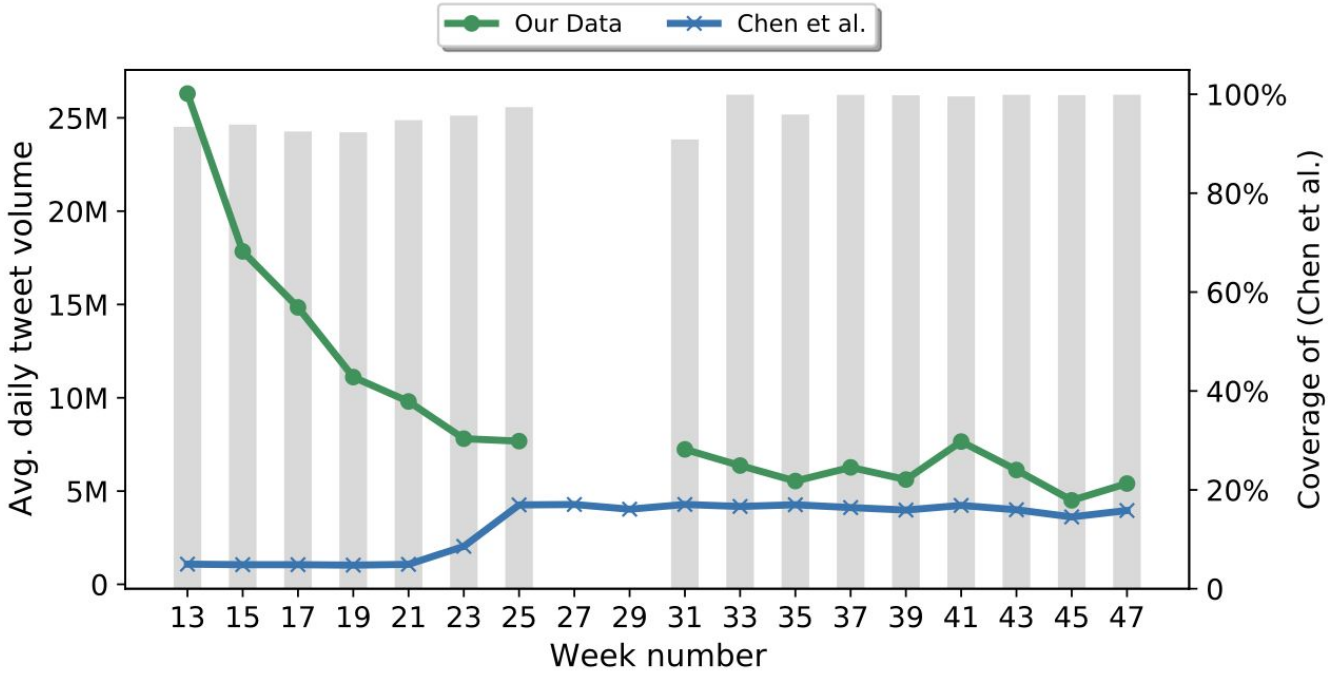


Outline

1. Motivation and research questions
2. **A new COVID-19 dataset and data processing**
3. **Results**

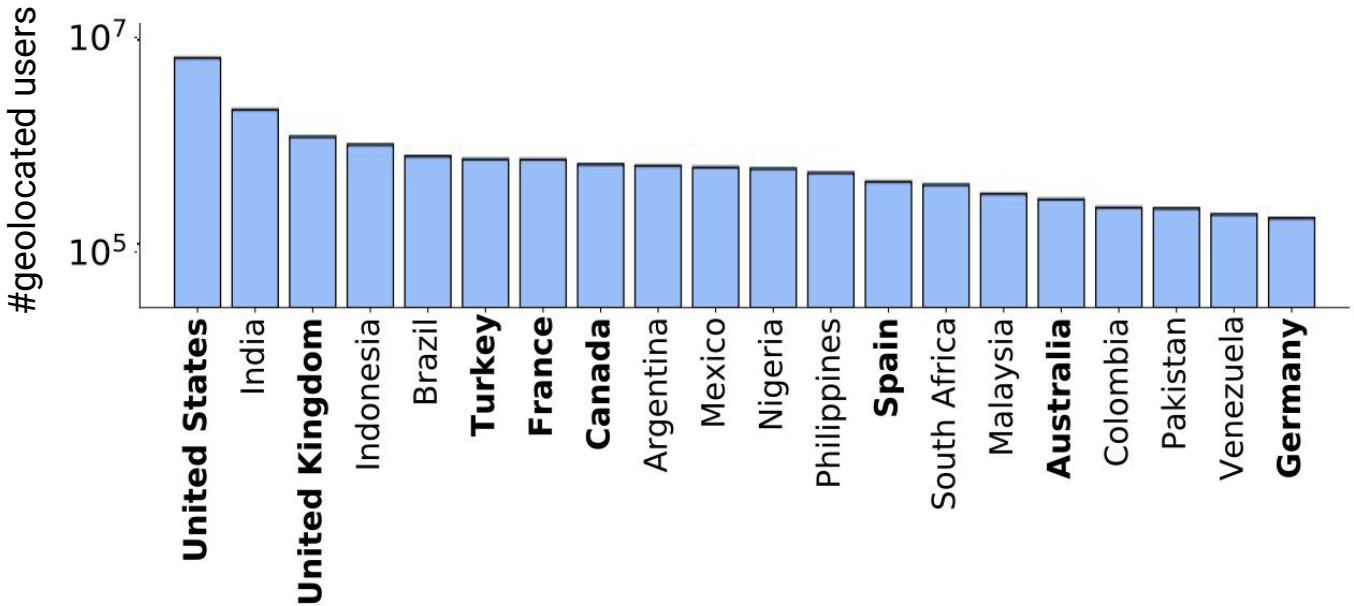
COVID2020 dataset

- An almost complete Twitter stream by tracking a large set of COVID-19 keywords
- 1 billion COVID-19 tweets; 62M Twitter users from 2020-03 to 2020-11



Step 1: Identifying geolocated Twitter users

- (1) Geotagged tweets; (2) Self-reported locations
- 93% accuracy in the validation set
- Ambiguous users are removed, 21M users with one unique location



Step 2: Estimating user political leaning

- Political party, political position, and party members from Wikipedia
- Label propagation on the within-country retweet network involving local politicians
- 93% agreement in the validation set
- 8 countries with 40+% politicians active on Twitter

	#politicians	#w/ Twitter accounts	%coverage	size of retweet network	%coverage of geo. users
United States	609	593	97.4%	946,436	14.3%
United Kingdom	1,456	636	43.7%	98,061	8.7%
Canada	454	192	42.3%	40,103	6.7%
Australia	235	176	74.9%	23,838	8.7%
Spain	635	530	83.5%	46,122	11.4%
France	943	550	58.3%	40,576	6.1%
Germany	752	574	76.3%	14,508	8.1%
Turkey	681	476	69.9%	27,809	4.1%

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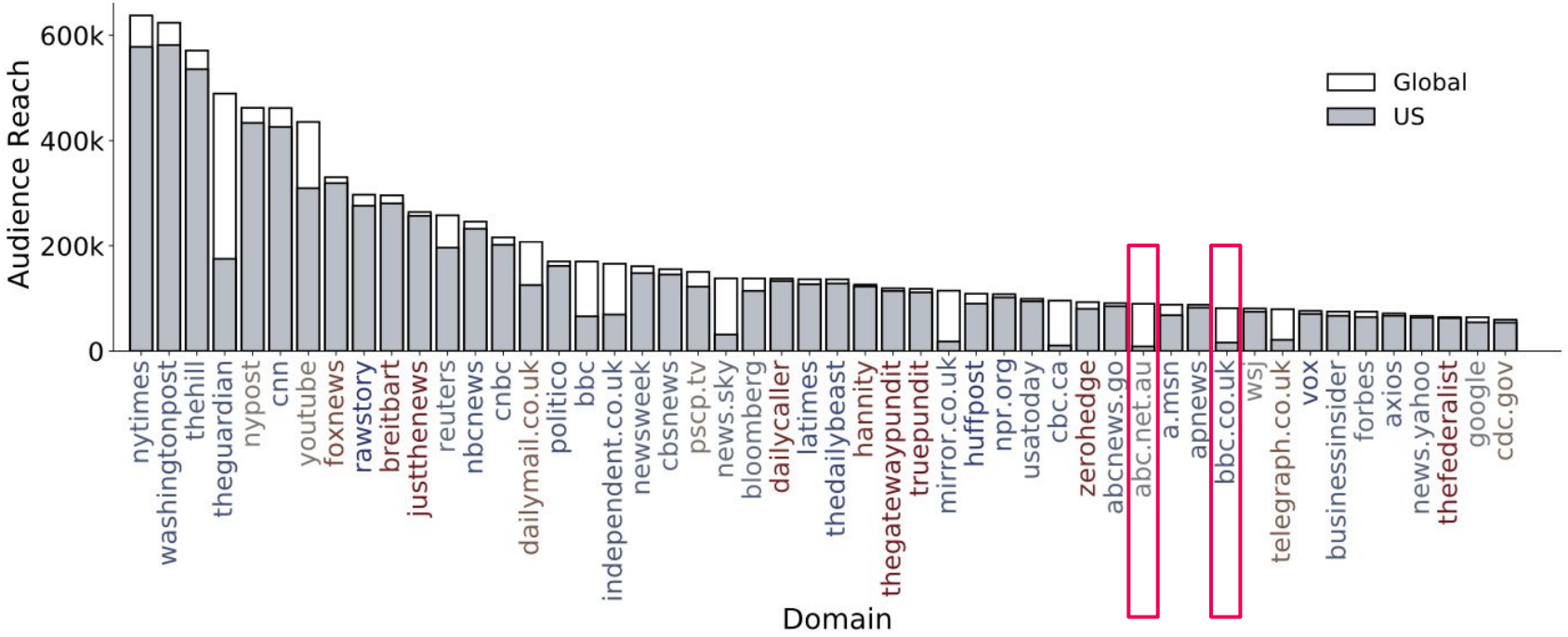
Global media readership: Audience reach

- URL sharing as a proxy of news consumption
- Audience reach: # unique Twitter users sharing URLs from a domain



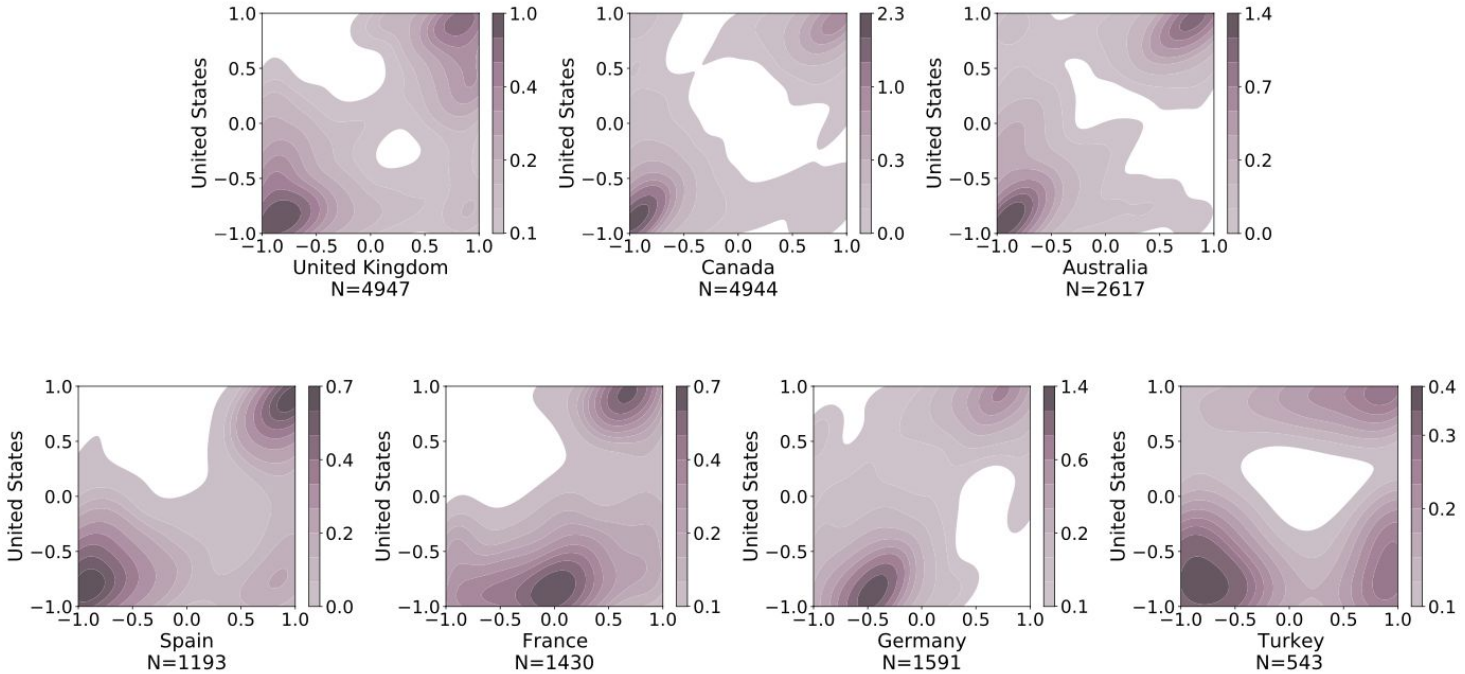
Global media readership: Cross-country retweet

- Bridging users: user from country A → user from country B

	United States	United Kingdom	Canada	Australia	Spain	France	Germany	Turkey
United States	940,154	2,797	3,924	2,086	755	1,076	1,306	370
United Kingdom	2,150	95,558	561	503	451	544	429	125
Canada	1,020	252	38,954	147	61	109	91	26
Australia	531	236	160	23,186	40	76	82	33
Spain	438	202	90	105	45,561	170	148	10
France	354	118	240	46	128	40,026	139	31
Germany	285	106	68	44	73	90	14,157	67
Turkey	173	68	44	55	0	115	154	27,504

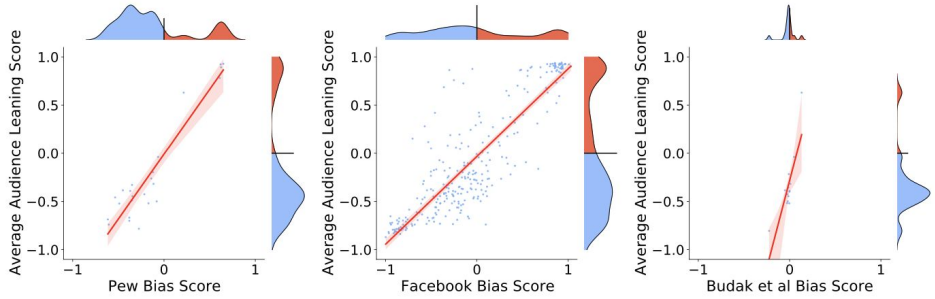
Global media readership: Cross-country retweet

- Bridging users: user from country A → user from country B
- Cross-country retweets do not cross the partisan line



Shape of media readership: Average audience leaning

- Average of leaning scores for all users who had retweeted a media
- Strongly correlated with existing media bias ratings



(a) Pew Research Center [12], n=24 (86%), $r = 0.94^{***}$

(b) Bakshy et al. [6], n=281 (65%), $r = 0.88^{***}$

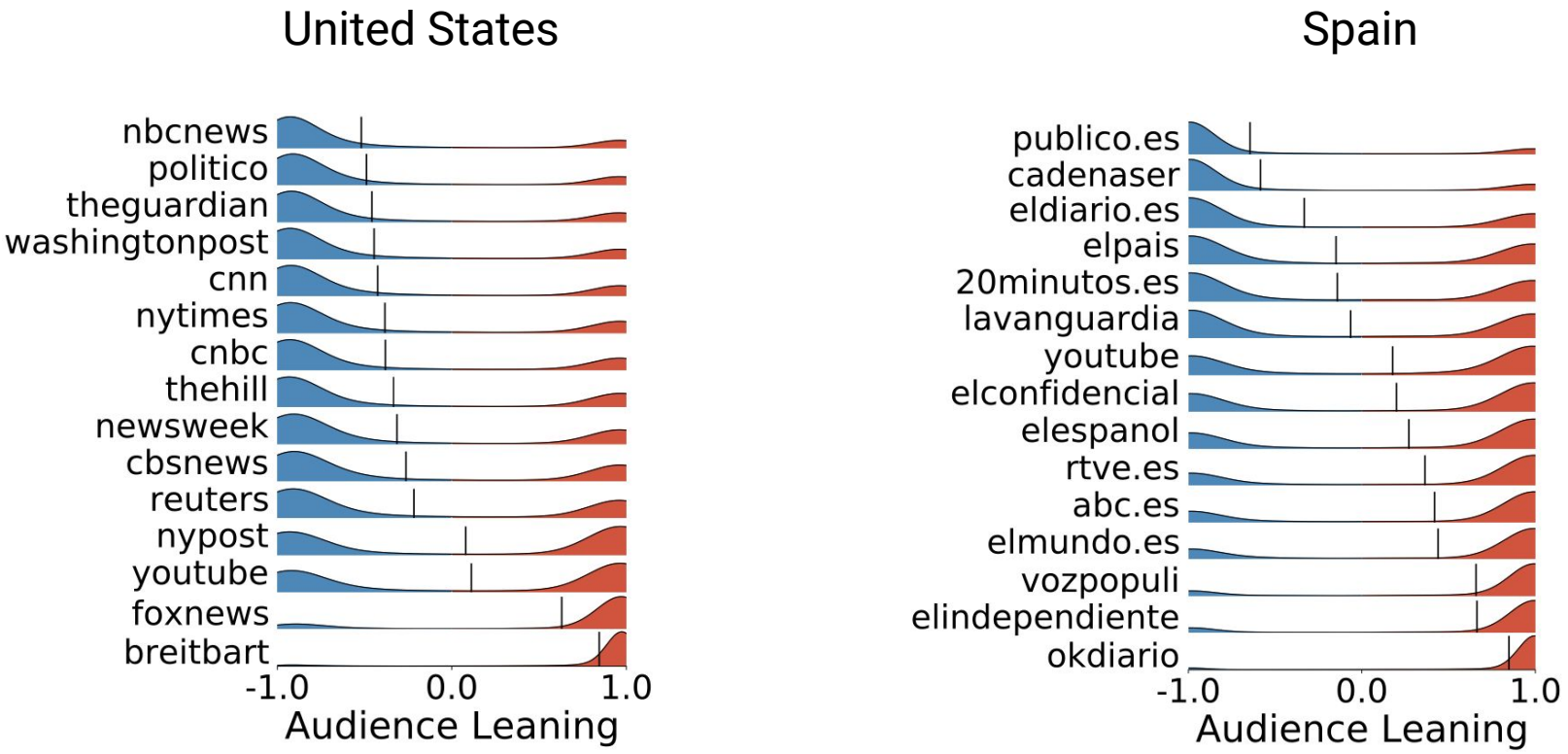
(c) Budak et al. [9], n=14 (93%), $r = 0.83^{***}$

(d) AllSides [2], n=237 (81%), $\rho = 0.75^{***}$

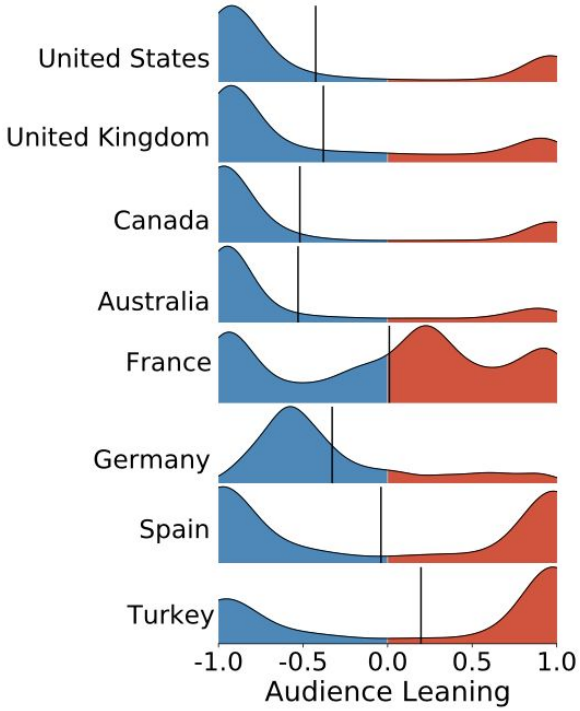
(e) Robertson et al. [56], n=3132 (16%), $r = 0.63^{***}$

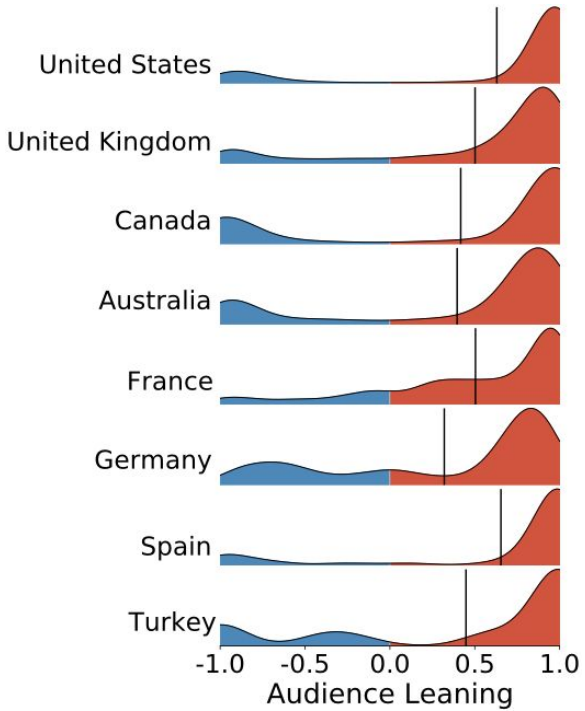
(f) Robertson et al. [56], n=262 (68%), $\rho = 0.46^{***}$

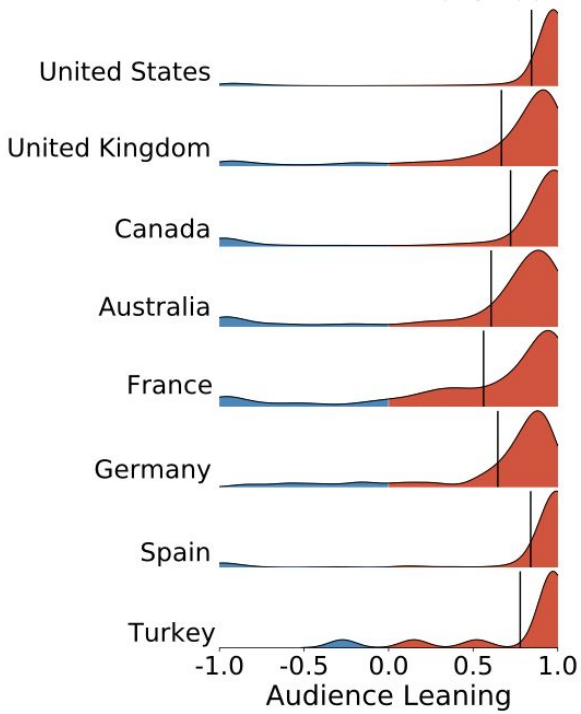
Shape of media readership: A country-centric view



Shape of media readership: A media-centric view

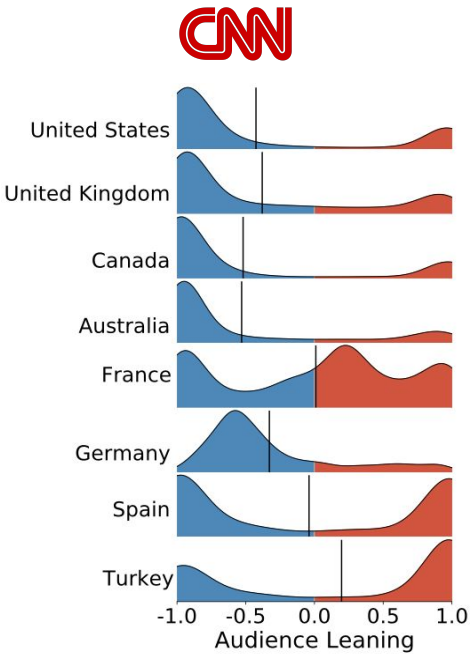






Summary

Question	The shape of media readership in a global view
Data and method	1. A new COVID-19 Twitter dataset 2. Highly accurate geolocation parsing 3. Highly accurate user political leaning estimation
Contributions	1. A new set of media bias scores by audience leaning 2. Visuals of media readership in different countries



Code, data, new media bias ratings: https://github.com/computationalmedia/media_landscape