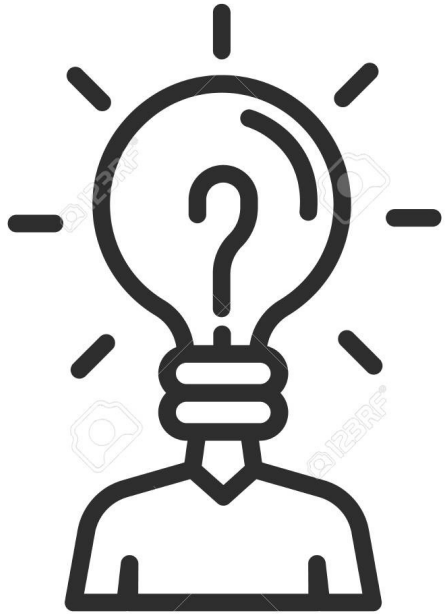
Quantifying Partisan news diet in TV audiences



Homa Hosseinmardi,
Computational Social Science Lab, University of Pennsylvania

CSSLab

- generalization from anecdotes
  - insufficient samples
- oversimplified causes
  - ignoring evidence for other possibilities

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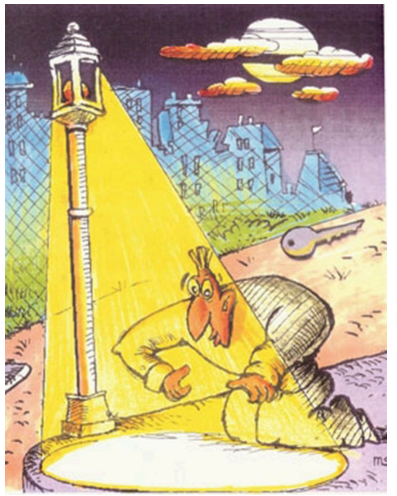
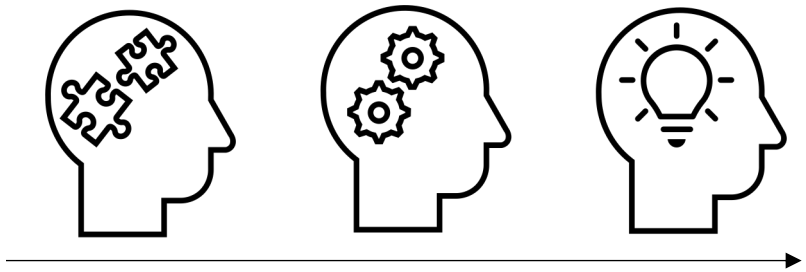
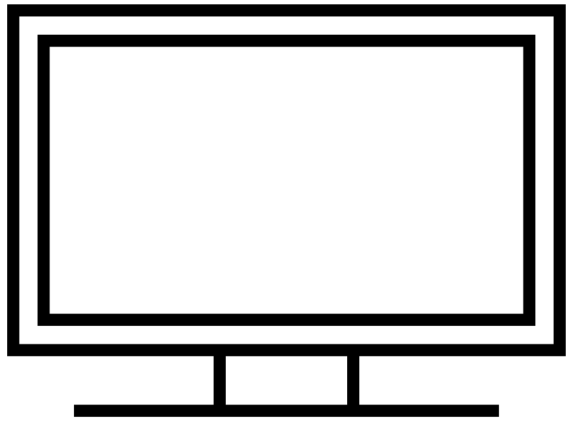
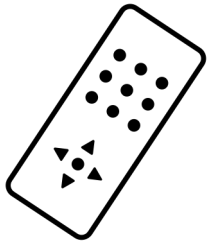


- data-driven studies
  - representative
  - large-scale
  - holistic



partisan news segregation in television





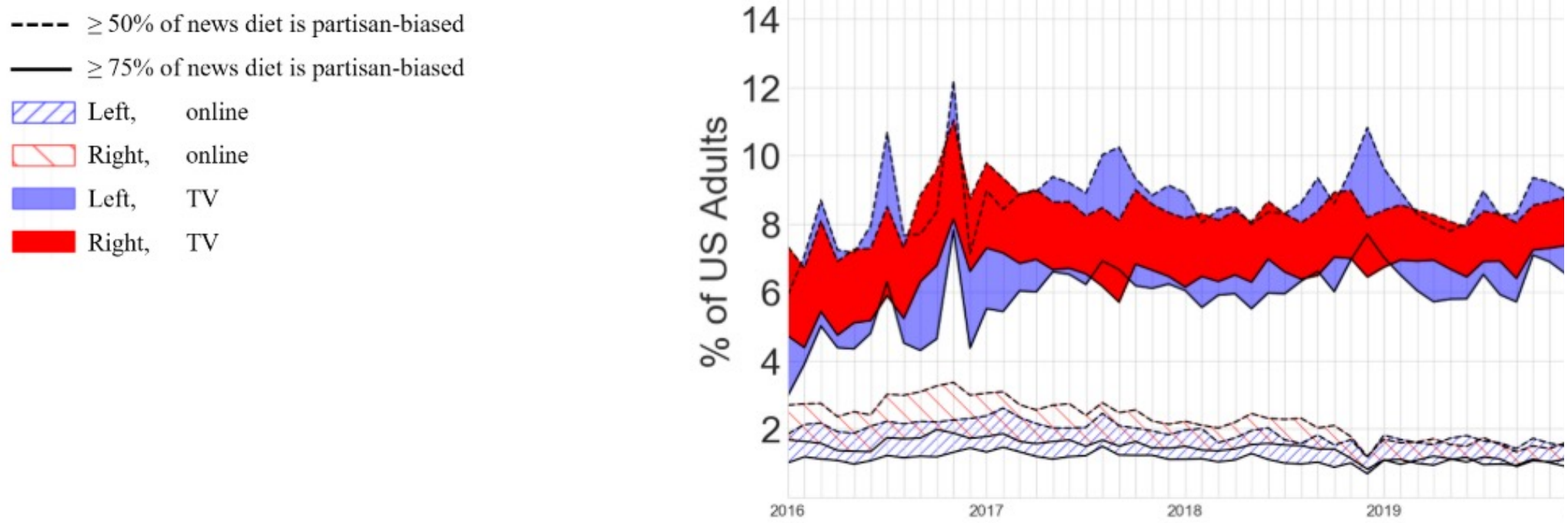
Science Advances, 2022.

partisan segregation in television and online news consumption

- empirical investigations of the online media environment
- television as the main source of news!

partisan segregation in desktop & TV news audiences

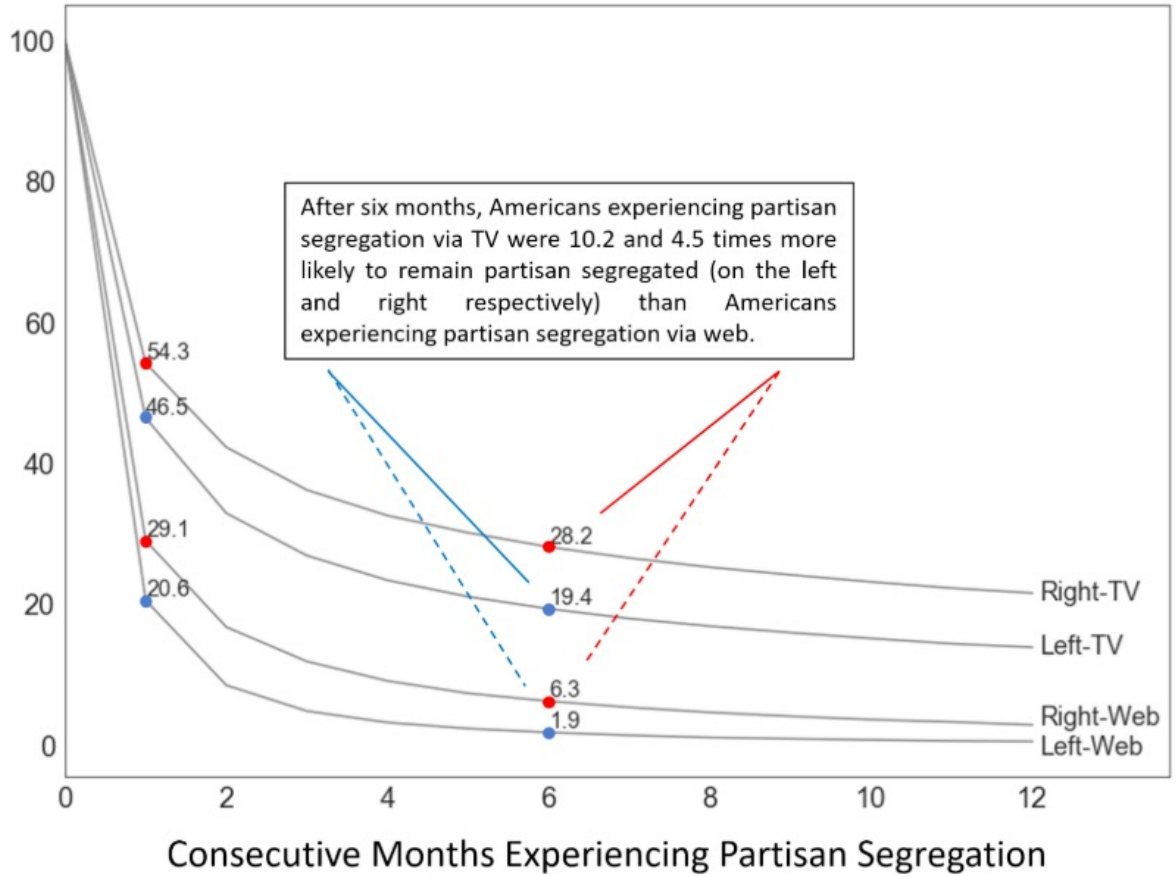
- desktop users (N ≈ 500,000)
- television users (N ≈ 350,000)
- January 2016 to Dec 2019



Science Advances, 2022.

persistence of partisan segregation over time

of Americans experiencing partisan segregation, the percent that remain segregated for X months

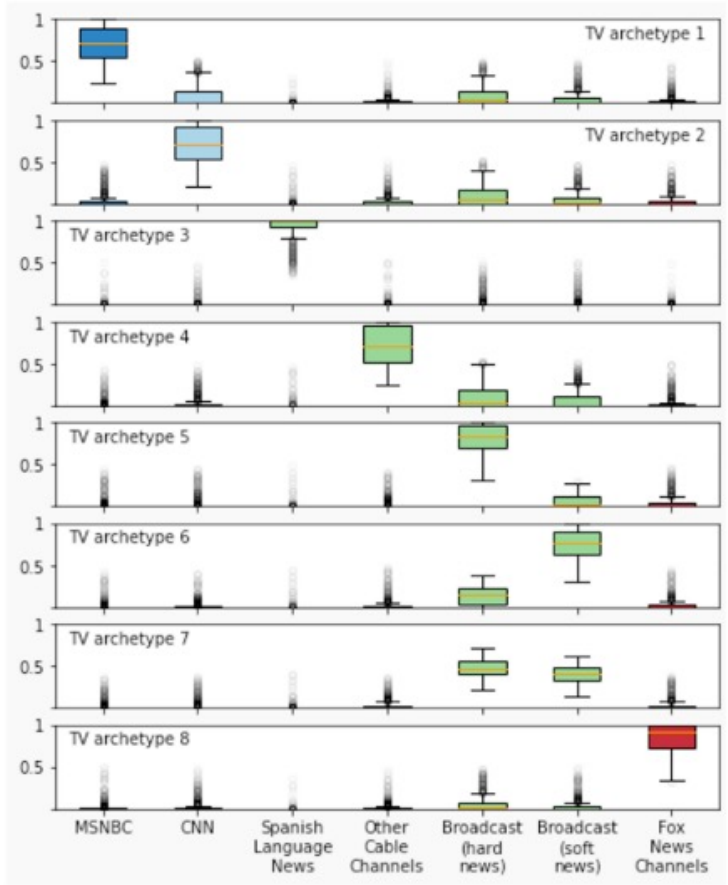


archetypal news consumption behavior

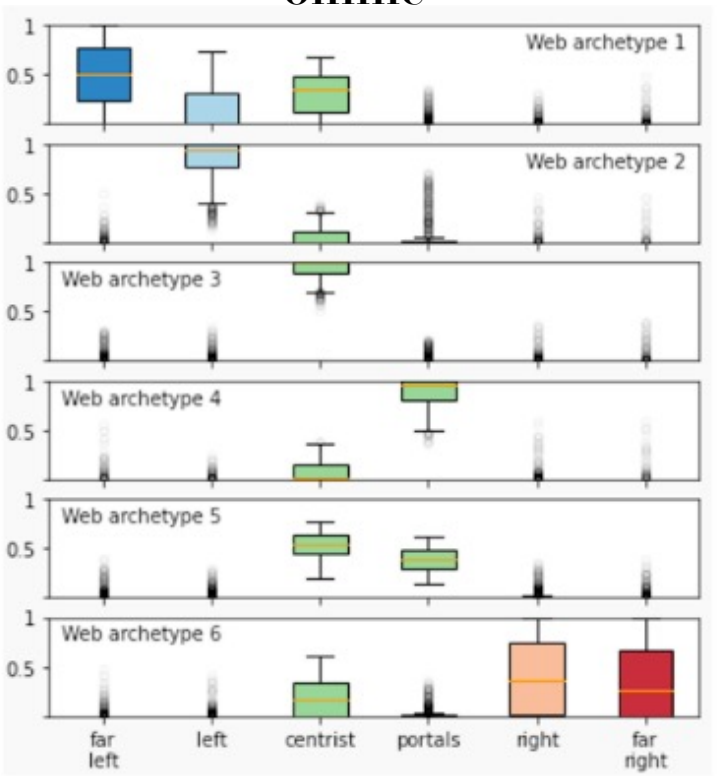
21% American adults hew closest to one of the three most partisan TV archetypes accounting for 64% of all news minutes consumed.

only 6% of web users adhere to the most partisan web archetypes comprising 29% of all online news minutes consumed.

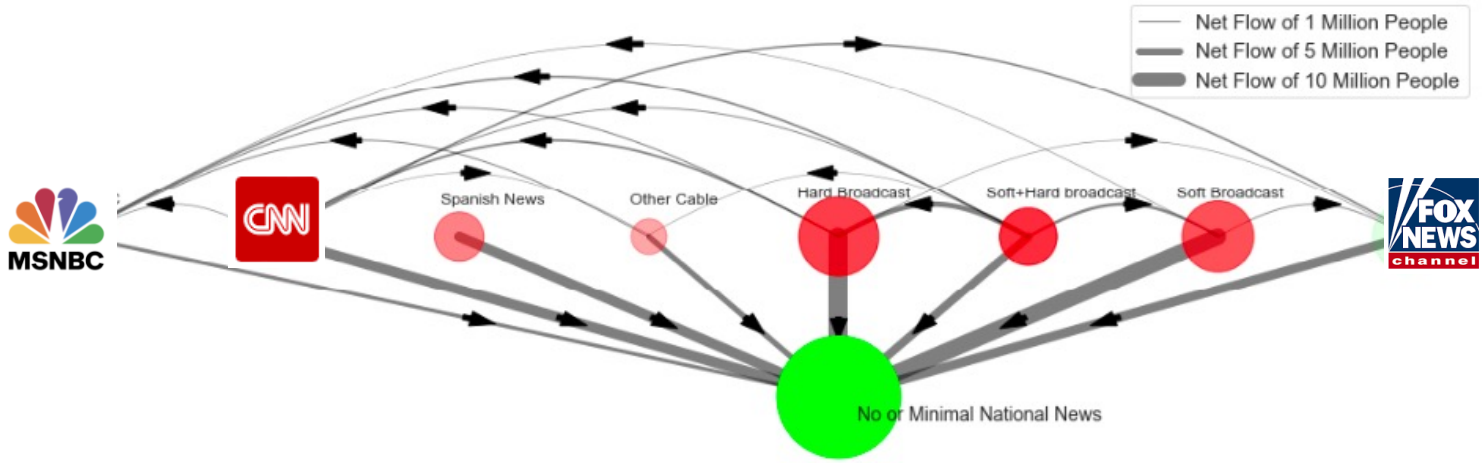
tv



online



partisan news segregation in television



Americans' shared reality

- how content is changing over time

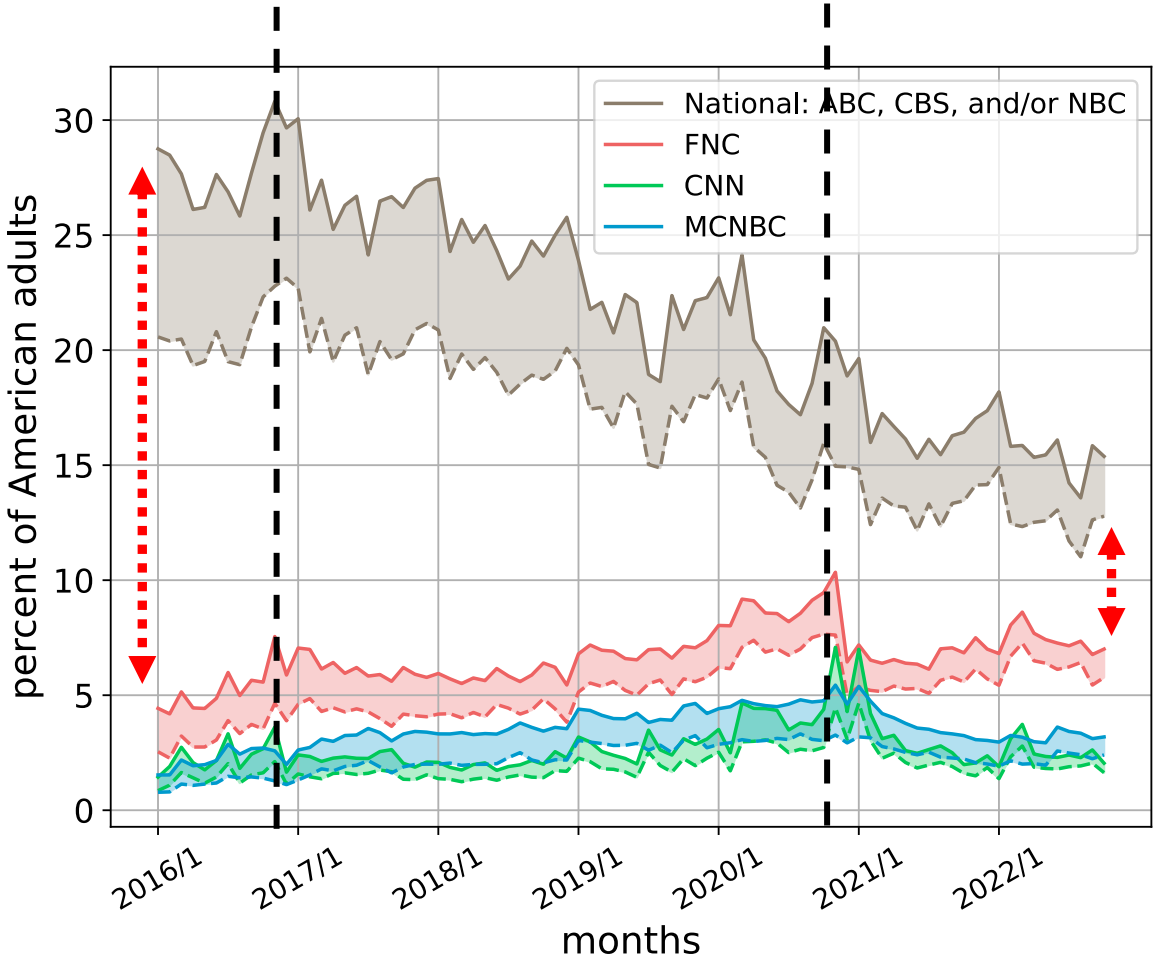
TV stations
- cable networks: FNC, CNN, MSNBC
- National networks: ABC, CBS, NBC

date:
- January 2012-Aug 2022

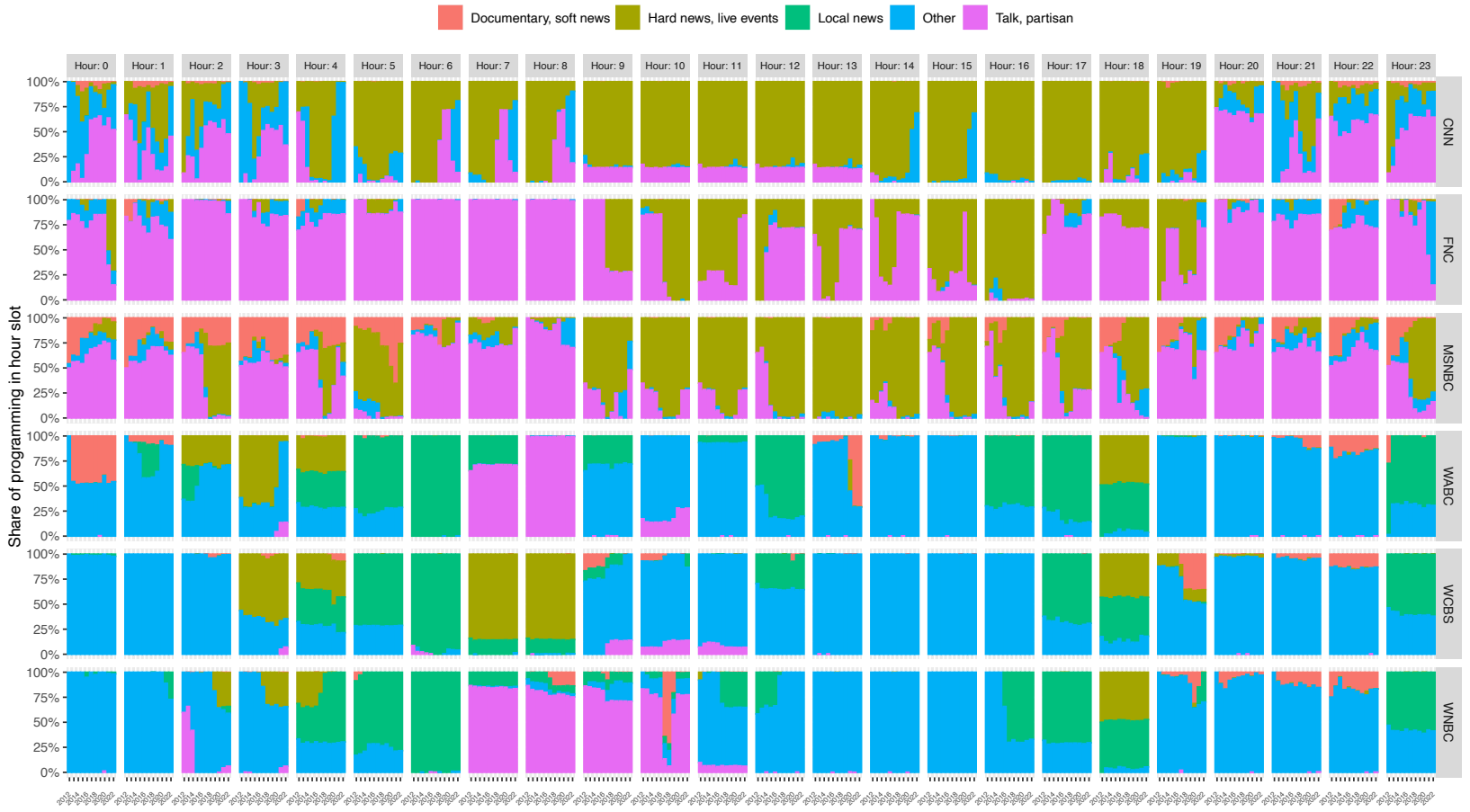
work in progress.

drop in the shared reality

people are LEAVING TV. but they are not leaving polarizing cable news



news categorization

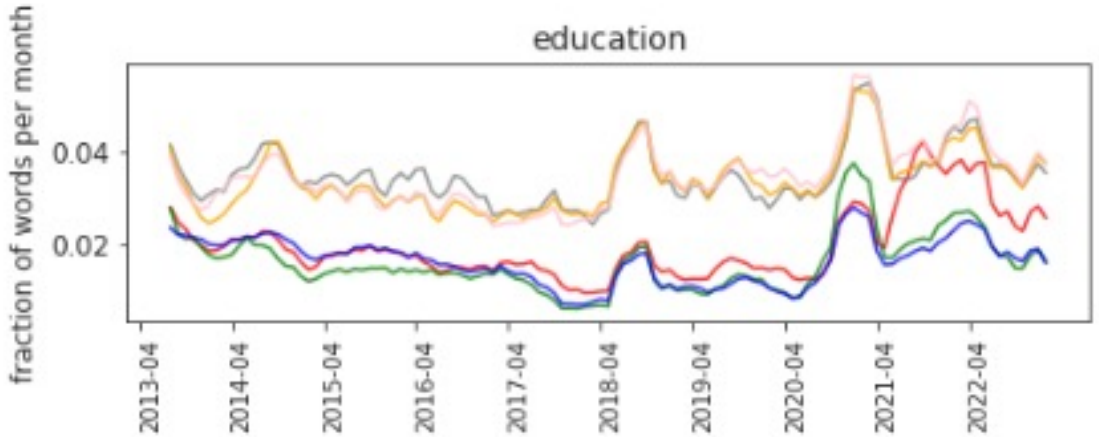


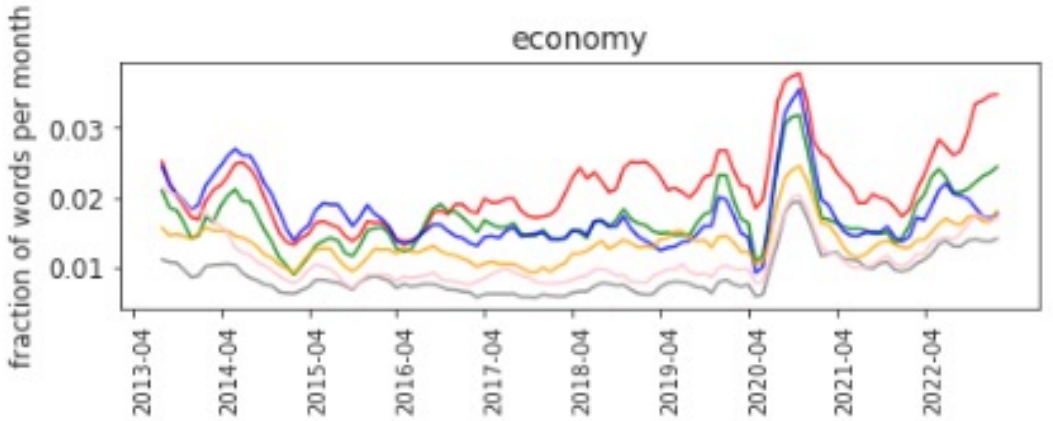
news classification

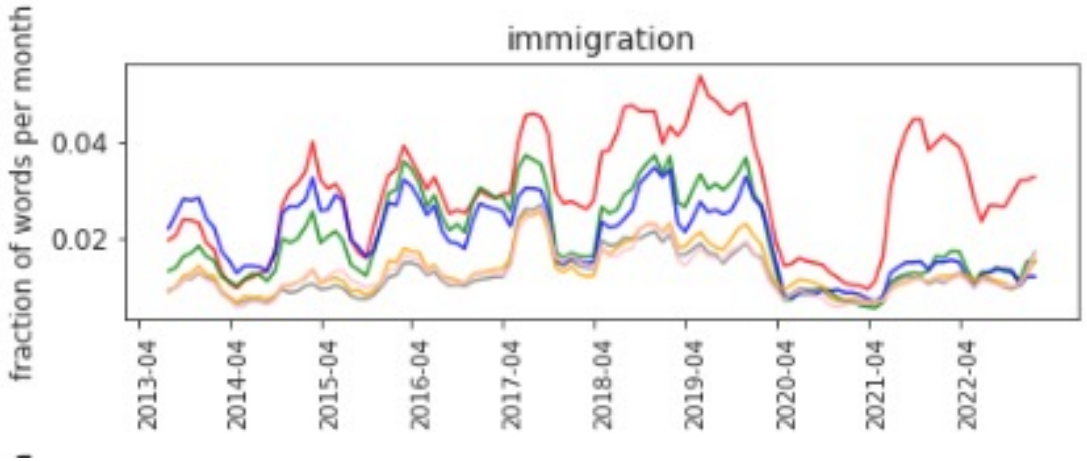
- multi-label
- various level of class imbalance
- 30 class labels
- 20 million segments

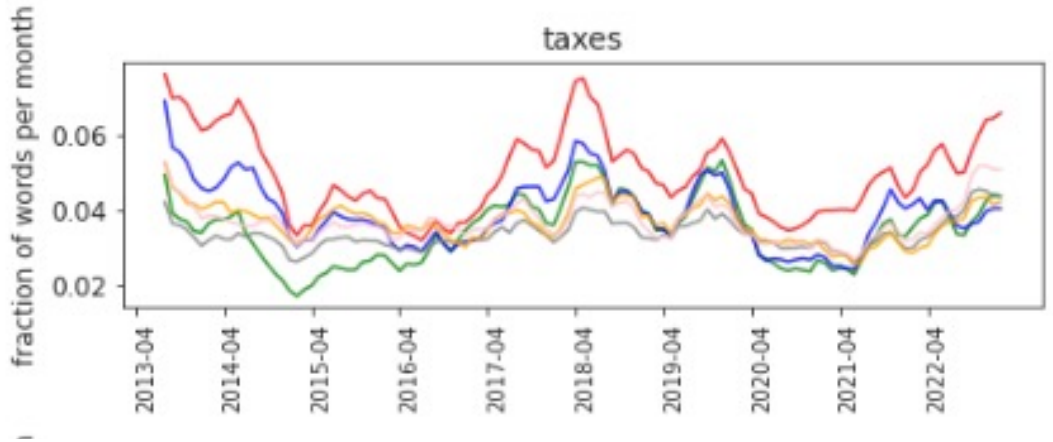
- weakly-supervised
  - keyword-based
  - few-shot learning
  - pretrained mask-language-models

topic over time









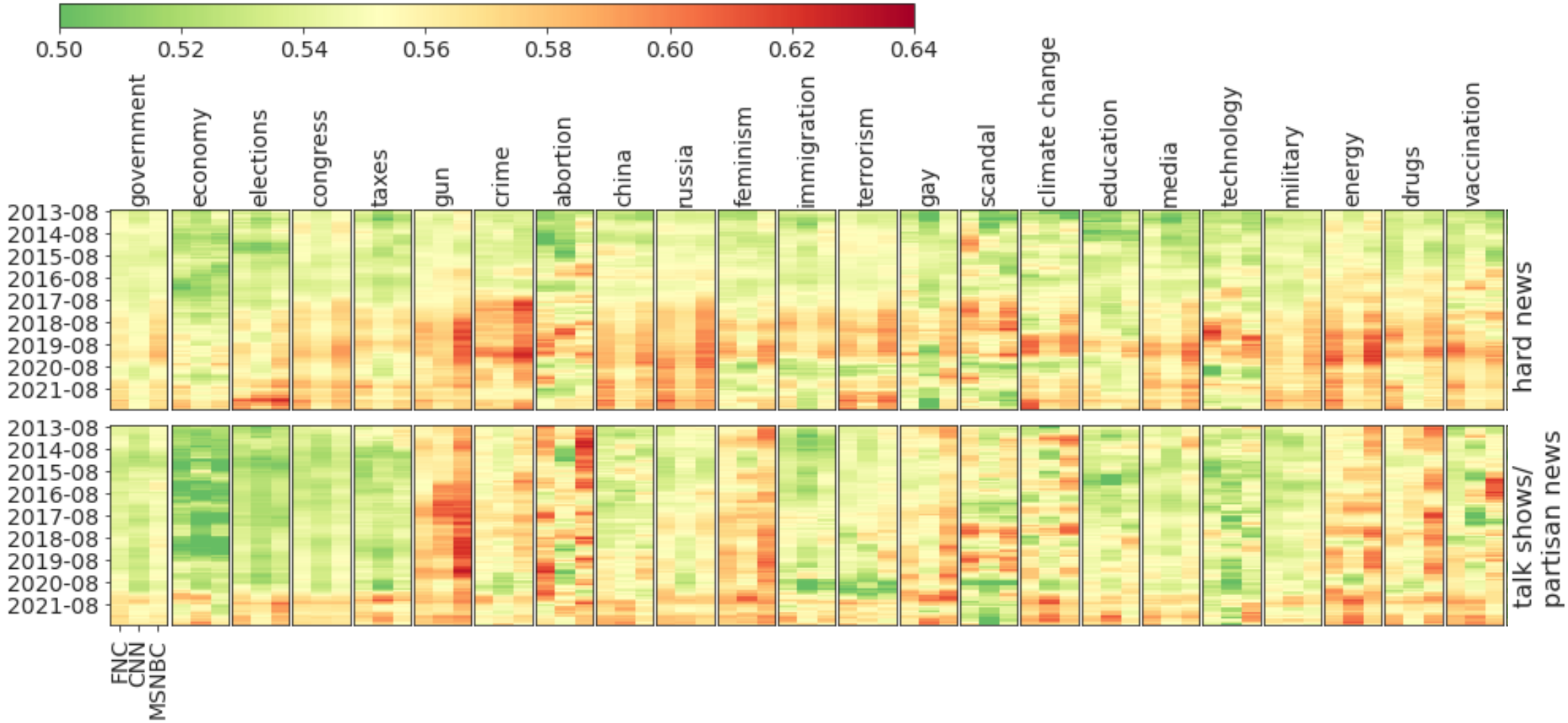
measuring partisanship

- the posterior probability that an observer with a neutral prior expects to assign to a speaker's true party after hearing the speaker utter a single phrase.

- $\pi(x) = \frac{1}{2} q^P(x)\rho(x) + \frac{1}{2} q^N(x)(1 - \rho(x))$
- $q^P(x_i) \in (0,1)^J$ is the phrase probability
- $\rho(x)$: the empirical term frequencies for a station

"Measuring polarization in high-dimensional data: Method and application to congressional speech," Gentzkow et. al, 2016.

polarization dynamic



Gentzkow et. al, "Measuring polarization in high-dimensional data: Method and application to congressional speech," 2016.

Thank you!

- Questions!