Echo Chambers: Twitter Versus Online News Exposure*

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Introduction

- Surveys estimate 70% (in UK) get news from online sources (about same as TV)
- Clickstream data seen as improvement in examining information seeking (Majo-Vazquez et al. 2017), selectivity (Flaxman et al. 2016, Gentzkow Shapiro 2011, Peterson et al. 2018), news information exposure (Hindman 2011; Guess 2016, Araujo et al. 2017)
- e.g. Majo-Vazques et al.finds visits to google news declined after introduction of link tax in Spain

Selective Exposure - Studies Using Clickstream

Study	Data
Petersen et. al 2018	survey/click/text
Guess 2016	survey/click
Flaxman et al. 2016	survey/click/est. slant
Gentzkow and Shapiro 2011	click/est. slant

Measuring Selectivity – Isolation Index

- Partisan overlap on domains – greater isolation [All Rs accessing Fox and no Ds accessing Fox]
- Slant of domain (e.g. Fox, HuffPost) measured by audience share [e.g. Gentzkow and Shapiro, Flaxman et al.]
- Peterson et al. 2018 calculate isolation index for news content (by domain and topic)

Petersen et al. 2018

"..[W]hen we incorporate partisan slant [of news content] into the analysis, the partisan divide in news exposure expands."

Objectives:

- Evaluating Selectivity Outside US [contrasting media system, cross-cutting partisan cues]
- Move from domain level to article level - Selective or crosscutting exposure (or avoidance)
- Assess usability of data for news exposure (small online sample, device coverage)

Brexit:3 Wave Survey with Clickstream

Wave 2016 (ICM Unlimited)	Respondents
Feb	607
Apr	588
Jun	447
ttl survey w/ clickstream data	959
ttl survey who accessed online news	673

Survey reports of online news seeking:

Of those in the survey who reported frequent online use for EURef news 31% no news/info clicks compared to 24% no clicks for no freq online EURef

Clickstream w/survey estimates

Online news seeking

673 users with 39,368 (from 56,289) clicks on 332 news/info domains; 286 no news clicks

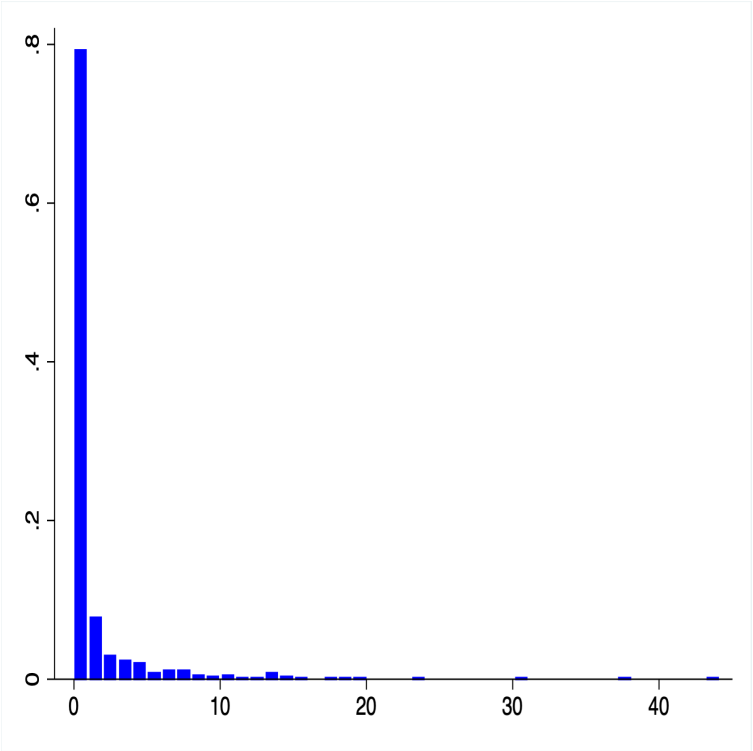

Figure 1: Avg Daily Clicks in entire sample of survey respondents

Clickstream w/survey estimates

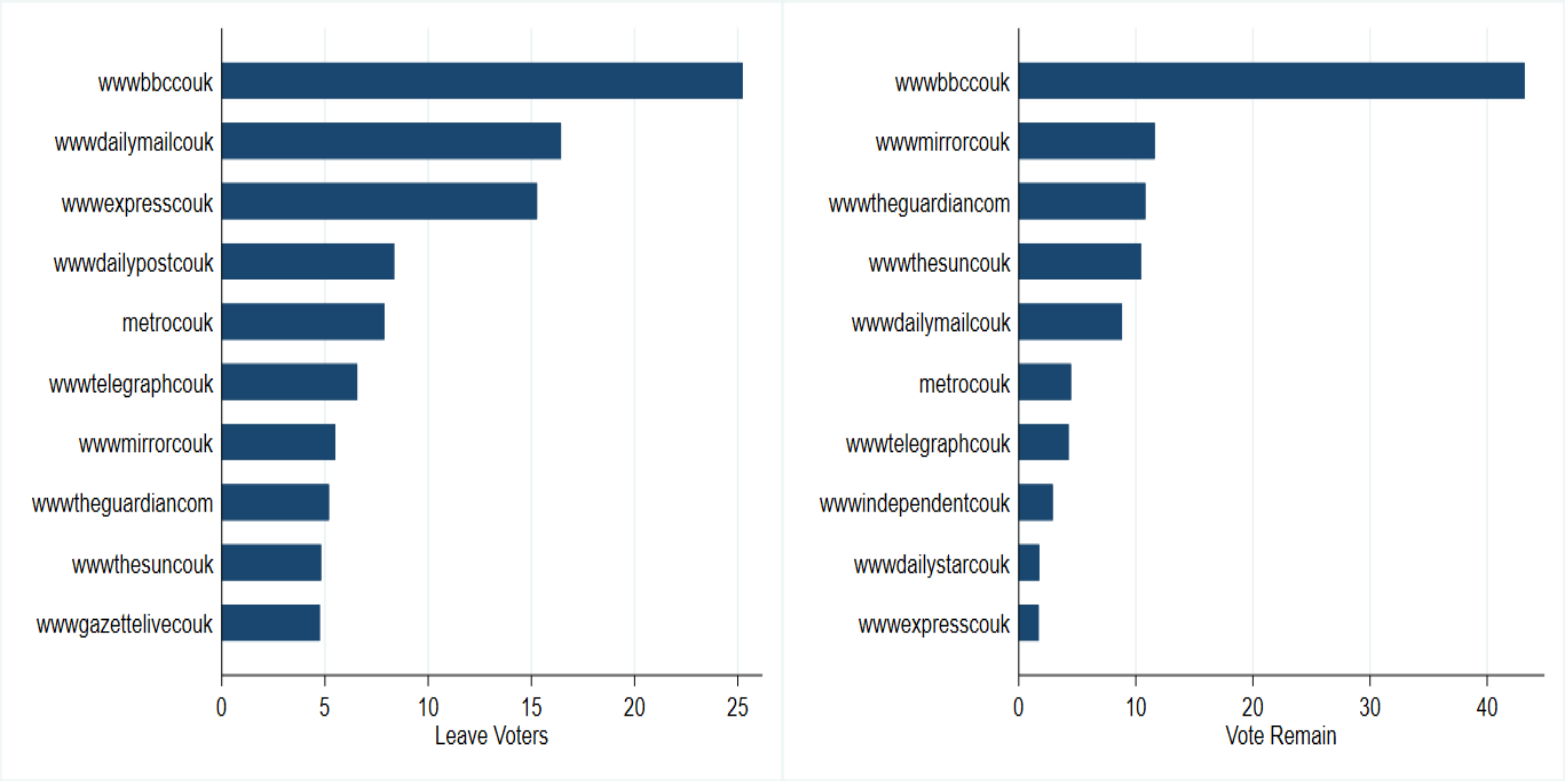

Figure 2: Share of Most Viewed Domains for Leave and Remain Voters

Survey Estimates of EURef Preferences

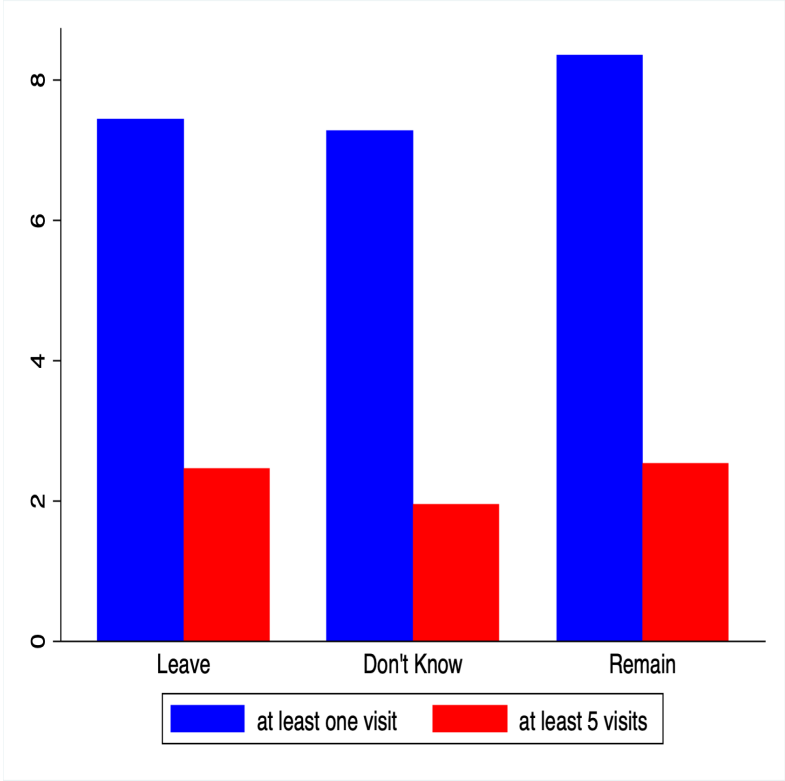

Figure 3: Avg. Number of News Domains Accessed

Selectivity - Topic

- From user 39,368 clicks, 25,468 unique stories;
- 1,720 Brexit themed stories(based on key word e.g. EU Ref, Brexit) and Brexit themed stories appear 3,679 times in the user-click data
- 296 respondents clicked on Brexit themed stories
- LDA model for 50 topics using Gensim (average topic probabilities for each article)

Online Behavior	Respondents(pct)	Reported in Survey(pct
Online news "avoiders"	29%	25%
Online Brexit news "avoiders"	40%	20%
Online Brexit news access	31%	

Measuring Topic Selectivity

- Unlike Peterson et. al 2018 who used an isolation index for each topic, we calculate a selectivity measure at the level of the user.
- If no topic selectivity, each topic has equal probability of being accessed by user (.02)
- Use topic probability across clicked stories for a user:

$$y_{[i]} = \sum_{n=1}^{N} x_{j[i]}^{total} - 0.02 * N_{[i]}$$

for user i and topic j

Distribution of selectivity score:

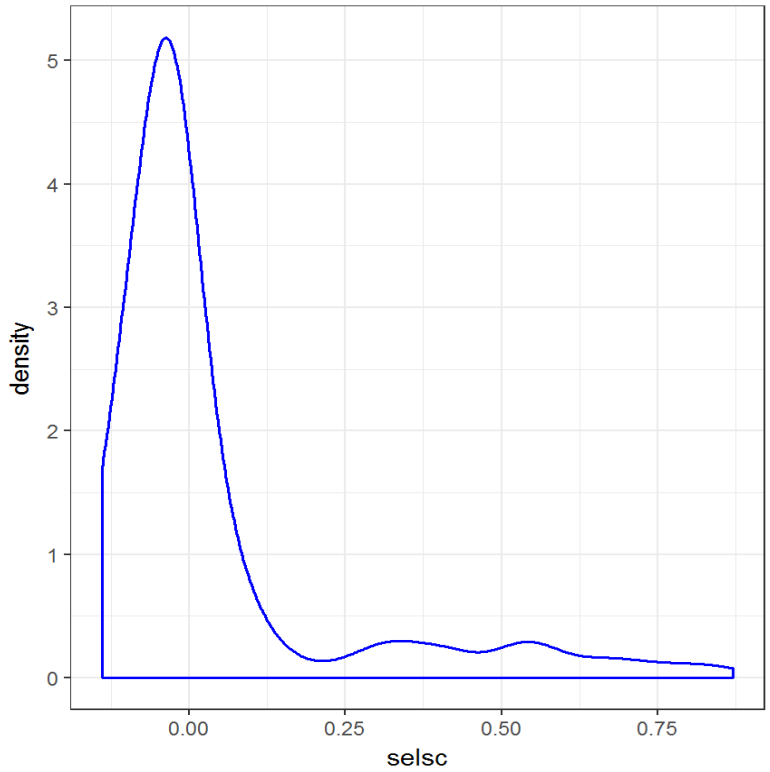

Figure 4: Selectivity (lo score = balanced across topics

Selectivity by Leave/Remain Vote

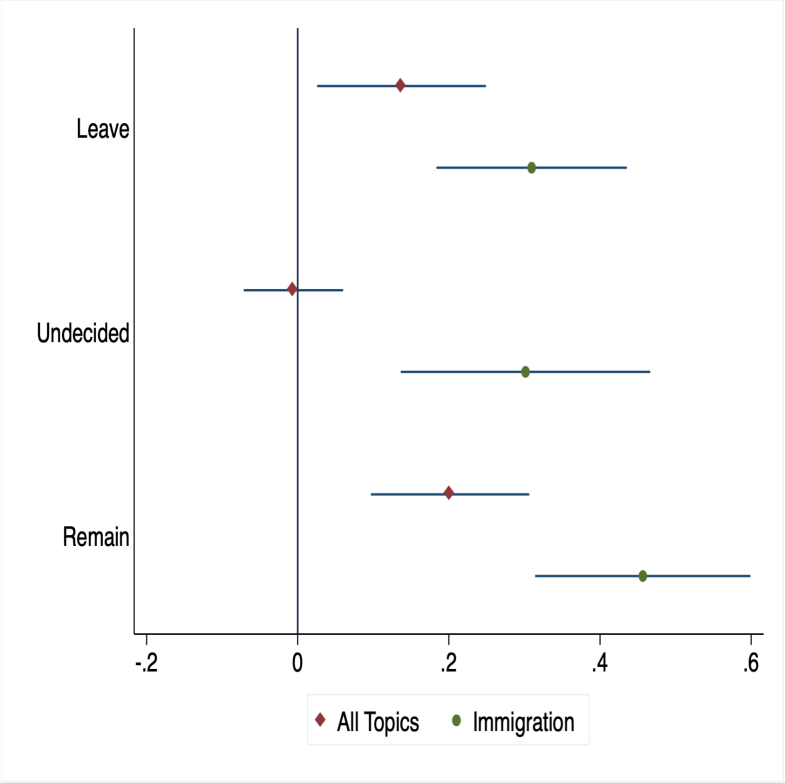

Figure 5: Selectivity

lo score = balanced across topics w/nclicks r=.1

Conclusions

- Very little (est. It 3%) online activity devoted to news and info
- Clickstream does not capture all news exposure
- Limited agreement with self reports
- High degree over overlap at the domain level even with partisan press – consistent with findings from US
- Selectivity across topics?

The End

Last Slide!