Does Fake News Work?  
Fake News and Ideological Bias in News Consumption  
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Motivation
How does fake news influence people?
We use a unique dataset of household browsing history to measure ideological bias in news consumption before and after seeing fake news.

Background
- Social media platforms, especially Facebook, drove significant traffic to fake news sites in 2016 [1, 2].
- Fake news had wide reach with up to 23% of visits to the top 20% of most conservative households with ideology index above 0.22.
- Mixed evidence for visiting fake news having any effect on future news consumption for liberal households.

Methods & Data
- comScore data – 2016 internet browsing history for 81,417 US households [6].
- 136 million timestamped visit logs at the domain-level (that we aggregated to the household-month level).
- Partisanship, Propaganda, and Disinformation: Online Media and the 2016 U.S. Presidential Election – Berkman-Klein Center for Internet & Society report [7].
- Categorized 964 online news sources based on relative proportion of tweets citing the source by Clinton vs. Trump retweeters: -1.0 (Source is favored by Clinton retweeters) to 1.0 (Source is favored by Trump retweeters).
- Household ideology index = weighted average of Berkman score for each visited news source by total duration spent on each news source during the month (similar to methodology used by others [2, 3]).

False, Misleading, Clickbait-y, and/or Satirical “News” Sources – Melissa Zimdars et al. [8].

447 fake news sites = “sources that entirely fabricate information, disseminate deceptive content, or grossly distort actual news reports”

47 of the 146 sites overlap with Berkman scores*. 87% of all visits to fake news sites.

60 sites have Berkman scores > 0.9 “Far right fake news” and 33% of all visits to fake news sites.

Does seeing fake news affect future news consumption?

Identification strategy:

\[ Y_{it} = \alpha + \beta X_{it-1} + \gamma Z_{it} + \epsilon_{it} \]

Where:
- \( Y_{it} \) = Ideology index
- \( D_{it-1} \) = Treatment (fake news or far right fake news)
- \( X_{it} \) = Covariates (e.g., last month’s ideology index)
- \( Z_{it} \) = Month FE

Visiting fake news results in more conservative future news consumption for Far Right households (top 20% most conservative households with ideology index above 0.22).

Visiting fake news has a similar but reduced effect on Center Right households (21% of households with ideology index between 0 and 0.22).

Mixed evidence for visiting fake news having any effect on future news consumption for liberal households.

Discussion
Our findings support our hypothesis that exposure to fake news had heterogenous effects:
- Far Right households increased their ideology index by 0.210 in LDV models, equivalent to going from the 80th percentile in ideology index to 89th percentile.
- Center Right households had a smaller but still statistically significant increase of 0.035 in ideology index in LDV models, equivalent to going from 69th percentile in ideology index to 64th percentile.
- No consistently significant effect for liberal households.

Thus, exposure to fake news has a reinforcement effect on news consumption and may drive polarization by pushing the most conservative viewers further right.

Our results suggest that fake news may only influence individuals who are politically predisposed to accept its primarily right-wing content, which is in line with other work by Zaller [9] and Jerit and Barabas [10].

We found that exposure to fake news through Facebook had no additive effects, suggesting that social media platforms do not amplify the effect [11].

However, since this study can only observe browser activity at the domain level, it is likely underestimating how much fake news people saw within Facebook, if they did not click through to an external website.

Robustness Checks & Next Steps
We checked our results for robustness: (1) Modified treatment to be cumulative # of visits to fake news sites; (2) Modified treatment to be state-based dummy for ever visited a fake news site; (3) Tested leads as treatment variables; (4) Tested placebo outcome variable: visits to Amazon.com; (5) Ran random effects models; (6) Replicated using an alternate measure for ideology index [11].

Future work
- Add comScore data from 2015 and 2017 to check if results are consistent over time.
- Check if Breitbart has similar effects as fake news.
- Differentiate multiple vs. single fake news site visit effect.

References
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