

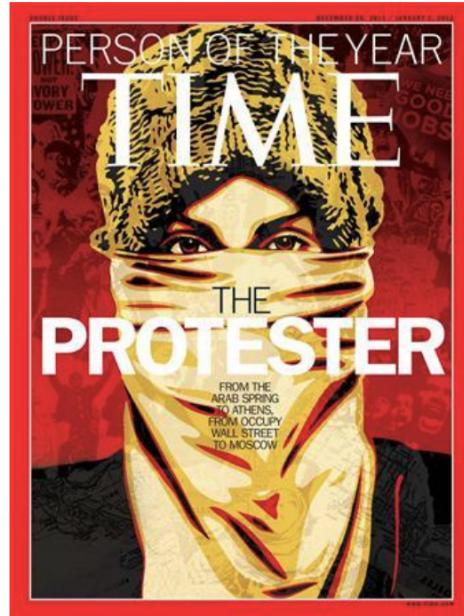
WhatsApp increases users' exposure to false rumors but has limited effects on belief accuracy: Evidence from a deactivation experiment in Brazil

Tiago Ventura, Rajeshwari Majumdar, Jonathan Nagler, and Joshua A. Tucker

Siegel Conference

02/02/2022

The Misinformation Turn



See From Liberation to turmoiL: Social media and democracy

Research on Social Media and Misinformation

Article | Published: 02 March 2020

Exposure to untrustworthy websites in the 2016 US election

Andrew M. Guens, Brendan Nyhan  & Jason Reifler

Nature Human Behaviour 4, 472–480 (2020) | [Cite this article](#)

6296 Accesses | 131 Citations | 602 Altmetric | [Metrics](#)

Abstract

Although commentators frequently warn about echo chambers, little is known about the volume or slant of political misinformation that people consume online, the effects of social media and fact checking on exposure, or the effects of political misinformation on behaviour. Here, we evaluate these questions for websites that publish factually dubious content, which is often described as fake news. Survey and web-traffic data from the 2016 US presidential campaign show that supporters of Donald Trump were most likely to visit these websites, which often spread through Facebook. However, these websites made up a small share of people's information diets on average and were largely consumed by a subset of Americans with strong preferences for pro attitudinal information. These results suggest that the widespread speculation about the prevalence of exposure to untrustworthy websites has been overstated.



RESEARCH ARTICLE

Fake news on Twitter during the 2016 U.S. presidential election

ANDREW M. GUENS, BRENDAN NYHAN  & JASON REIFLER

Nature Human Behaviour 4, 472–480 (2020) | [Cite this article](#)

6296 Accesses | 131 Citations | 602 Altmetric | [Metrics](#)

Finding facts about fake news

There was a proliferation of fake news during the 2016 election cycle. Grinberg et al. analyzed Twitter data by matching Twitter accounts to specific voters to determine who was exposed to fake news, who spread fake news, and how fake news interacted with factual news (see the Perspective by Rath). Fake news accounted for nearly 6% of all news consumption, but it was heavily concentrated—only 1% of users were exposed to 80% of fake news, and 0.1% of users were responsible for sharing 80% of fake news. Interestingly, fake news was most concentrated among conservative voters.

Science, this issue p. 374; see also p. 348

f | v | in | w | g | s |

Less than you think: Prevalence and predictors of fake news dissemination on Facebook

[Read more](#) | [Download PDF](#) | [View Article Online](#) | [Authors Info & Affiliations](#)

BORIS ADVARCE  · YILAN YILMAZ  · JONATHAN RATH  · [DOI: 10.1111/ცის.12550](#)

14,271 | 4 | 

Abstract

So-called “fake news” has renewed concerns about the prevalence and effects of misinformation in political campaigns. Given the potential for widespread dissemination of this material, we examine the individual-level characteristics associated with sharing false articles during the 2016 U.S. presidential campaign. To do so, we uniquely link an original survey with respondents’ sharing activity as recorded in Facebook profile data. First and foremost, we find that sharing this content was a relatively rare activity. Conservatives were more likely to share articles from fake news domains, which in 2016 were largely pro-Trump in orientation, than liberals or moderates. We also find a strong age effect, which persists after controlling for partisanship and ideology: On average, users over 65 shared nearly seven times as many articles from fake news domains as the youngest age group.

Article | Open Access | Published: 09 January 2023

Exposure to the Russian Internet Research Agency foreign influence campaign on Twitter in the 2016 US election and its relationship to attitudes and voting behavior

Gregory Eady , Tom Pashkalis , Jan Zilinsky, Richard Bonneau, Jonathan Nagler & Joshua A. Tucker

Nature Communications 14, Article number: 62 (2023) | [Cite this article](#)

32k Accesses | 1 Citations | 1421 Altmetric | [Metrics](#)

Abstract

There is widespread concern that foreign actors are using social media to interfere in elections worldwide. Yet data have been unavailable to investigate links between exposure to foreign influence campaigns and political behavior. Using longitudinal survey data from US respondents linked to their Twitter feeds, we quantify the relationship between exposure to the Russian foreign influence campaign and attitudes and voting behavior in the 2016 US election. We demonstrate, first, that exposure to Russian disinformation accounts was heavily concentrated: only 1% of users accounted for 70% of exposures. Second, exposure was concentrated among users who strongly identified as Republicans. Third, exposure to the Russian influence campaign was eclipsed by content from domestic news media and politicians. Finally, we find no evidence of a meaningful relationship between exposure to the Russian foreign influence campaign and changes in attitudes, polarization, or voting behavior. The results have implications for understanding the limits of election interference campaigns on social media.

What happens when you get off Facebook for four weeks? Stanford researchers found out.

There are a lot of consequences to giving up Facebook – and many of them are positive.

By Kurt Wagner | Feb 27, 2019, 5:44pm EST



The vast majority of this research focuses on developed countries, particularly the United States. As a consequence:

- Know very little of social media apps not heavily used in the United States
- Scholarly evidence becomes hard to generalize
- Weak policy recommendations from a global perspective
- At the same time: the consequences of misinformation are potentially larger outside of developed countries (weak institutions)

Misinformation and Politics in the Global South: the role of WhatsApp

*Disinformation Spreads on WhatsApp
Ahead of Brazilian Election*



Fake News Is Poisoning Brazilian Politics. WhatsApp Can Stop It.

Oct. 17, 2018



Come to the ‘war cry party’: How social media helped drive mayhem in Brazil

Researchers detected a surge in aggressive rhetoric from election denialists in far-right channels online ahead of Sunday's rioting



By [Elizabeth Dwoskin](#)

Updated January 9, 2023 at 9:50 a.m. EST | Published January 8, 2023 at 10:30 p.m. EST



Supporters of former president Jair Bolsonaro clash with police during a protest outside the Planalto Palace in Brasília on Sunday. (Eraldo Peres/AP)

<https://www.washingtonpost.com/technology/2023/01/08/brazil-bolsonaro-twitter-facebook/>

Even though WhatsApp has received sufficient attention from the media, yet no study has identified causal effects of WhatsApp usage on political outcomes.

Research and Findings

Research Problem: What are the causal effect of WhatsApp usage on beliefs for misinformation and its downstream effect, particularly political polarization?

Design: Deactivation Experiment on WhatsApp

- Incentivized participants to spent three weeks without acccessing any multimedia on WhatsApp
- Three weeks before Presidential Election in Brazil

Results:

- Substantive reduction in exposure to popular misinformation rumors.
- No improvements in belief accuracy, even though exposure was reduced.
- No changes in Polarization and Subjective Well-Being.

WhatsApp 101

WhatsApp

Usage in Brazil

WhatsApp is a worldwide popular end-to-end encrypted messaging app allowing both direct and ingroup communications with close to 2 billion around the world

WhatsApp 101

WhatsApp

Usage in Brazil

- 66% of the Brazilian eligible voters has a social media account, and 65% have an WhatsApp account (Datafolha 2018) – 150 million people in 2022.
- Most used app for all purposes: talk to family & friends, do business & pay bills, consume news, talk politics, among others (Reuters Institute, 2021).
- Used by 48% of population to read news, despite having no “news feed” (Reuters Institute, 2021)
- Across the world, Brazilians are the most concerned about misinformation. And among the most active social media users
- And WhatsApp is the main social media application where users report to see more misinformation.

Field Experiment: An WhatsApp Multi-Media Deactivation

Motivation

Deactivation experiments have been recently used to causally identify the effects of social media on users' behavior and attitudes ([Asimovic et al 2021](#) and [Alcott et al 2020](#)).

Deactivating WhatsApp users is theoretically and empirically unfeasible.

- Costs of deactivating on human subjects are too high.
- Findings from subjects enrolled in a complete deactivation were unlikely to be feasible (issues on external validity)

Our Design

⊕ **Our Solution:** cut channels through which users' are exposed to misinformation and polarizing content

(Machado et al., 2019; Resende et al., 2019; Garimella and Tyson, 2018; Garimella and Eckles, 2020; Batista Pereira et al., ND).

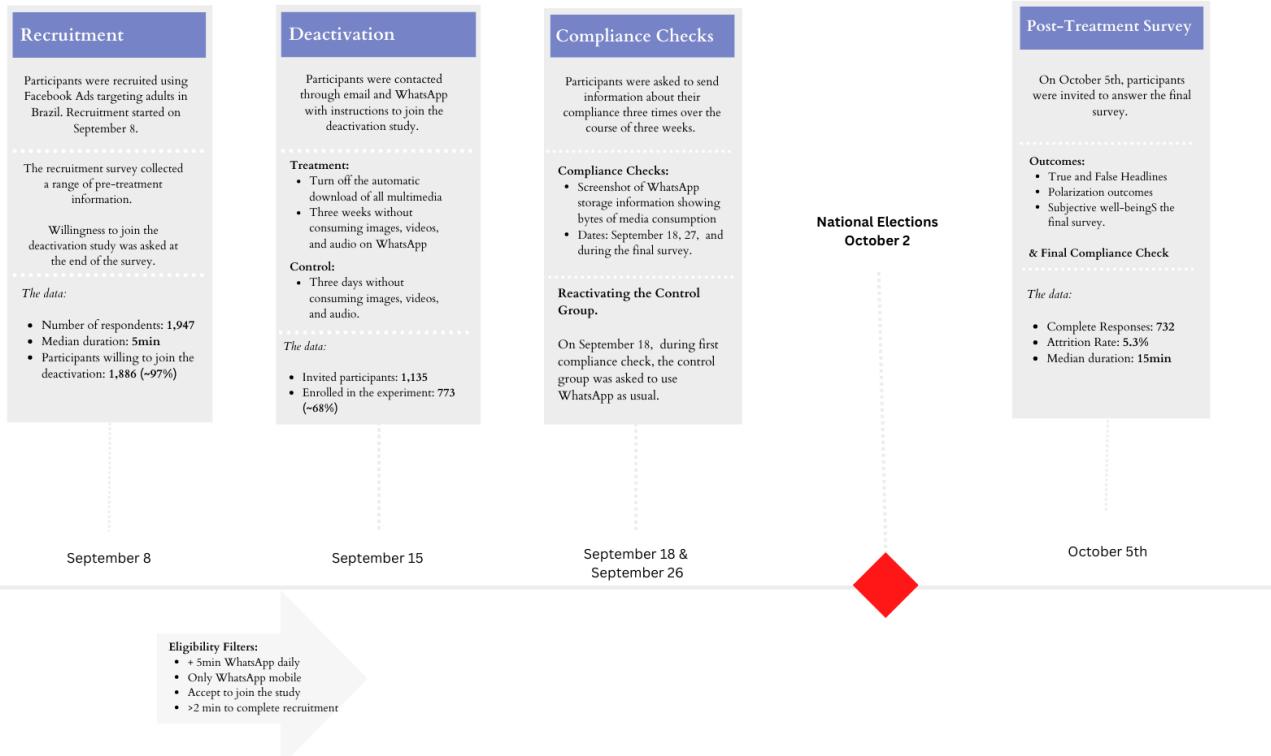
⊕ **Experiment:** Offer respondents a monetary incentive to

- Disable their automatic download of media on WhatsApp
- Do not purposefully click and watch any media on WhatsApp

⊕ **Treatment Period:** Three weeks:

- **Start:** Three weeks before general election in Brazil
- **End:** two days after the voting day

Overview of the Experiment



Recruitment

Participants were recruited using Facebook Ads targeting adults in Brazil. Recruitment started on September 8.

The recruitment survey collected a range of pre-treatment information.

Willingness to join the deactivation study was asked at the end of the survey.

The data:

- Number of respondents: 1,947
- Median duration: 5min
- Participants willing to join the deactivation: 1,886 (~97%)

Eligibility Filters:

- + 5min WhatsApp daily
- Only WhatsApp mobile
- Accept to join the study
- >2 min to complete recruitment

Deactivation

Participants were contacted through email and WhatsApp with instructions to join the deactivation study.

Treatment:

- Turn off the automatic download of all multimedia
- Three weeks without consuming images, videos, and audio on WhatsApp

Control:

- Three days without consuming images, videos, and audio.

The data:

- Invited participants: 1,135
- Enrolled in the experiment: 773 (~68%)

Compliance Checks

Participants were asked to send information about their compliance three times over the course of three weeks.

Compliance Checks:

- Screenshot of WhatsApp storage information showing bytes of media consumption
- Dates: September 18, 27, and during the final survey.

Reactivating the Control Group.

On September 18, during first compliance check, the control group was asked to use WhatsApp as usual.

Screenshots for Compliance

Download Features



WhatsApp Storage

MESSAGES	
Sent	2,522
Received	8,797
Bytes Sent	12.5 MB
Bytes Received	15.6 MB
CHAT MEDIA	
Bytes Sent	56 MB
Bytes Received	273.6 MB
STATUS MEDIA	
Bytes Sent	Zero KB
Bytes Received	7.5 MB
WHATSAPP CALLS	
Outgoing	32
Incoming	19

Post-Treatment

National Elections
October 2



Post-Treatment Survey

On October 5th, participants were invited to answer the final survey.

Outcomes:

- True and False Headlines
- Polarization outcomes
- Subjective well-beingS the final survey.

& Final Compliance Check

The data:

- Complete Responses: 732
- Attrition Rate: 5.3%
- Median duration: 15min

October 5th

Outcomes

Exposure and Belief Accuracy

- False Rumors published on fact-checking webpages during the month of the experiment + True News stories headlines from mainstream media.

Polarization

- Affective polarization (Feeling Thermometer)
- Social Polarization (Willingness to engage with outgroup voter)
- Issue Polarization (Abortion, gun control, etc..)
- Perceptions about ideological polarization ('Where do I observe the two main candidates?')

Subjective Well-being

- How did you feel for the past three weeks? (Happy, Anxious, etc...)

Examples of Misinformation Outcomes

False Item:

Only complete votes are counted by the electoral justice. If the voter only votes for the President, and votes blank for all the other races, the vote is considered a partial vote, and will be annulled

True Item:

After consecutive reductions, the current oil price in Brazil is below the global average value

Hypotheses

H1: Deactivated users will report lower levels of previous exposure to FALSE stories compared to their counterparts using the regular WhatsApp

H2a: Deactivated will display a higher ability to accurately identify FALSE information compared to their counterparts using the regular WhatsApp.

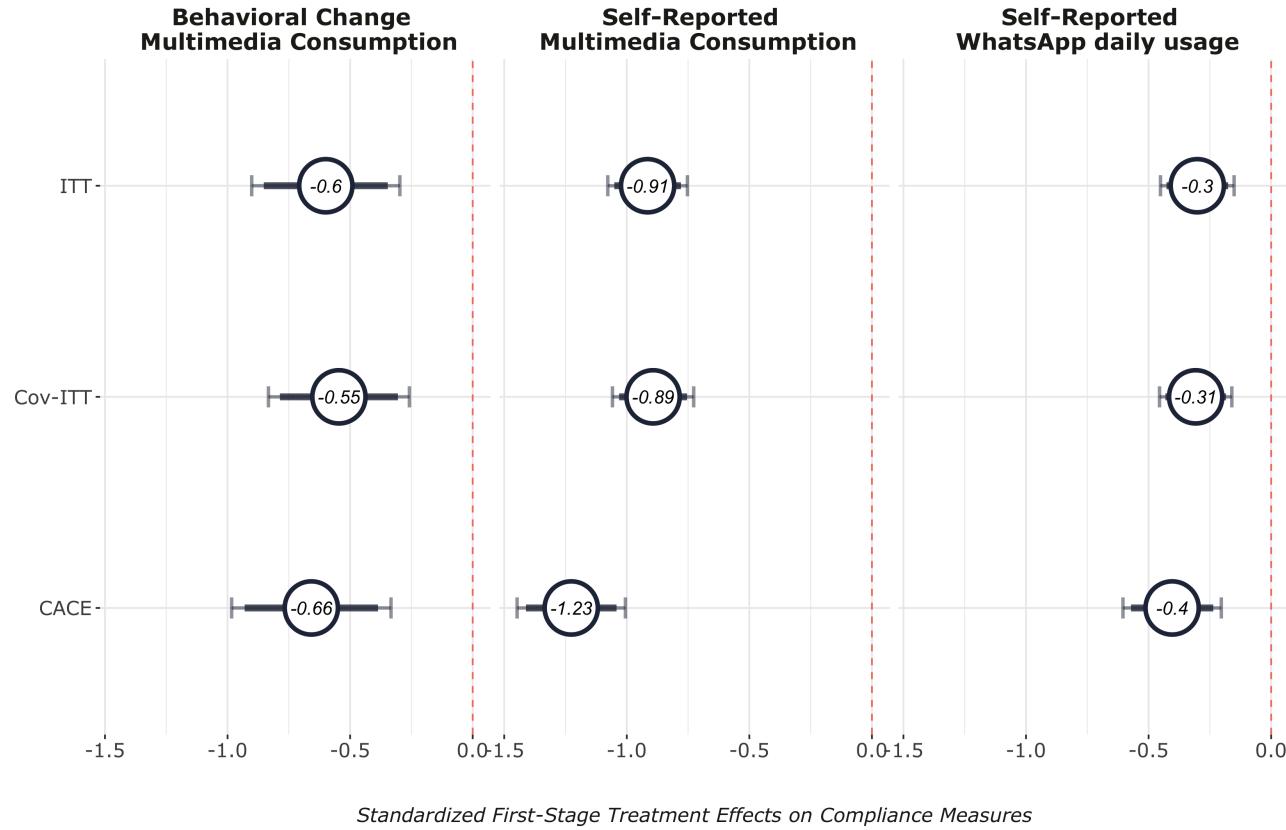
H2b Deactivated users will display lower levels of mainstream news knowledge compared to their counterparts using the regular WhatsApp.

H3: Deactivated will display lower levels of outgroup political polarization compared to their counterparts using the regular WhatsApp.

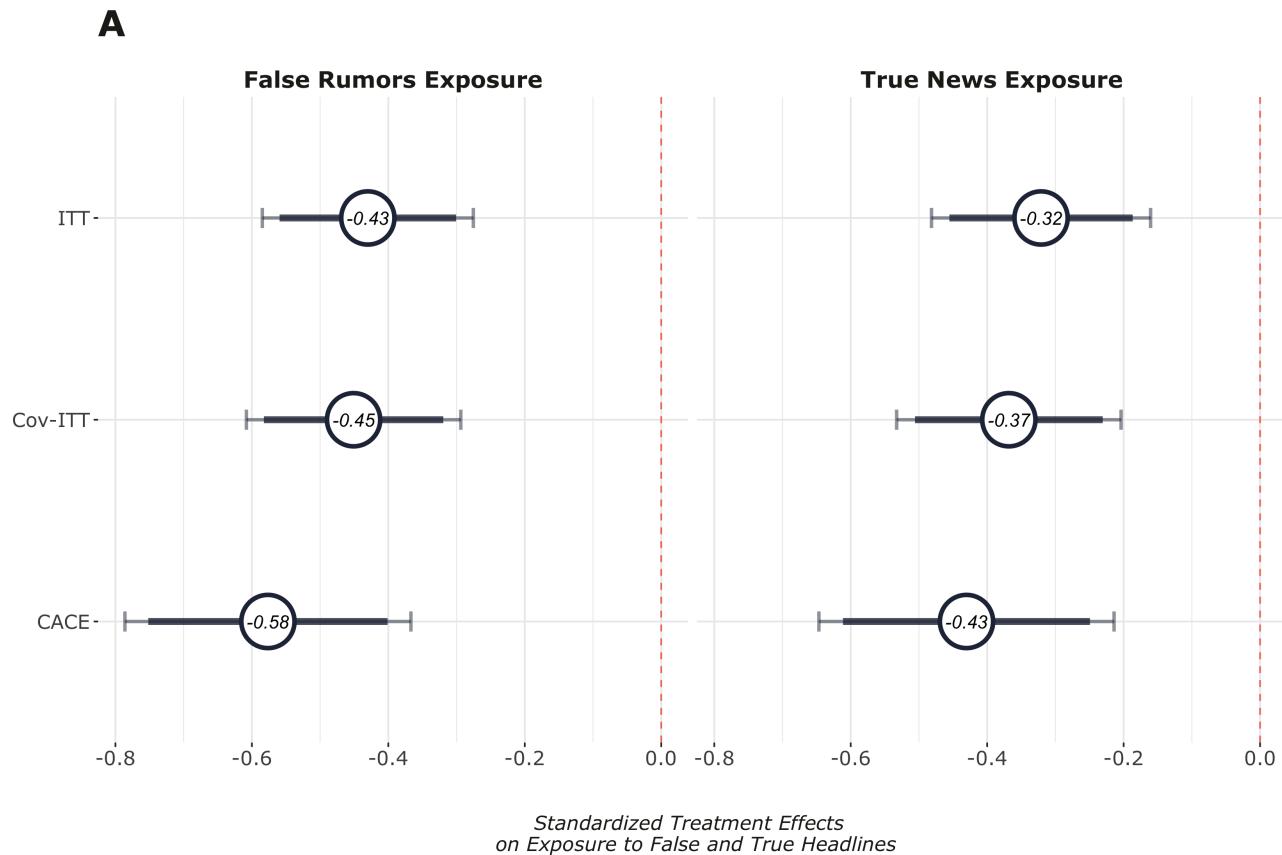
H4: Deactivated will display higher levels of the aggregated index of subjective well-being compared to their counterparts using the regular WhatsApp

Results

Effects on WhatsApp usage

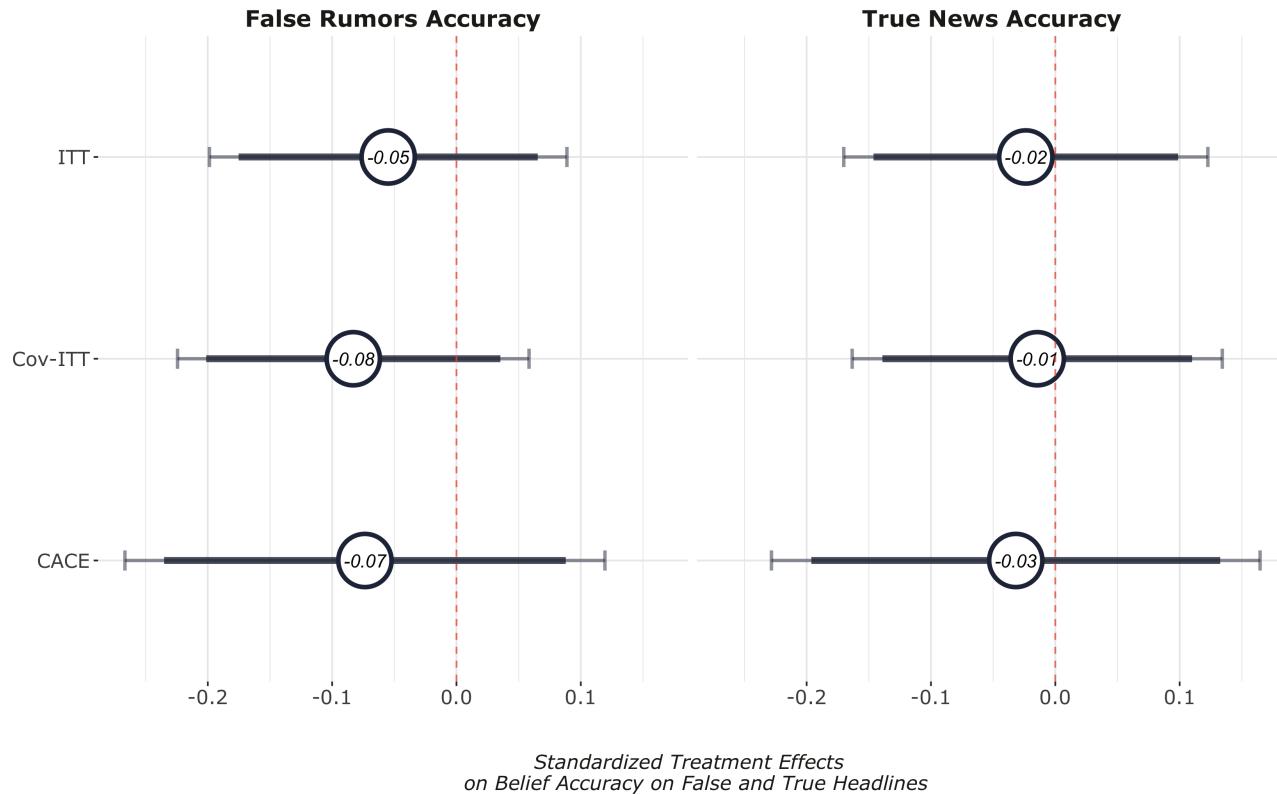


Effects on Exposure to Misinformation Rumors

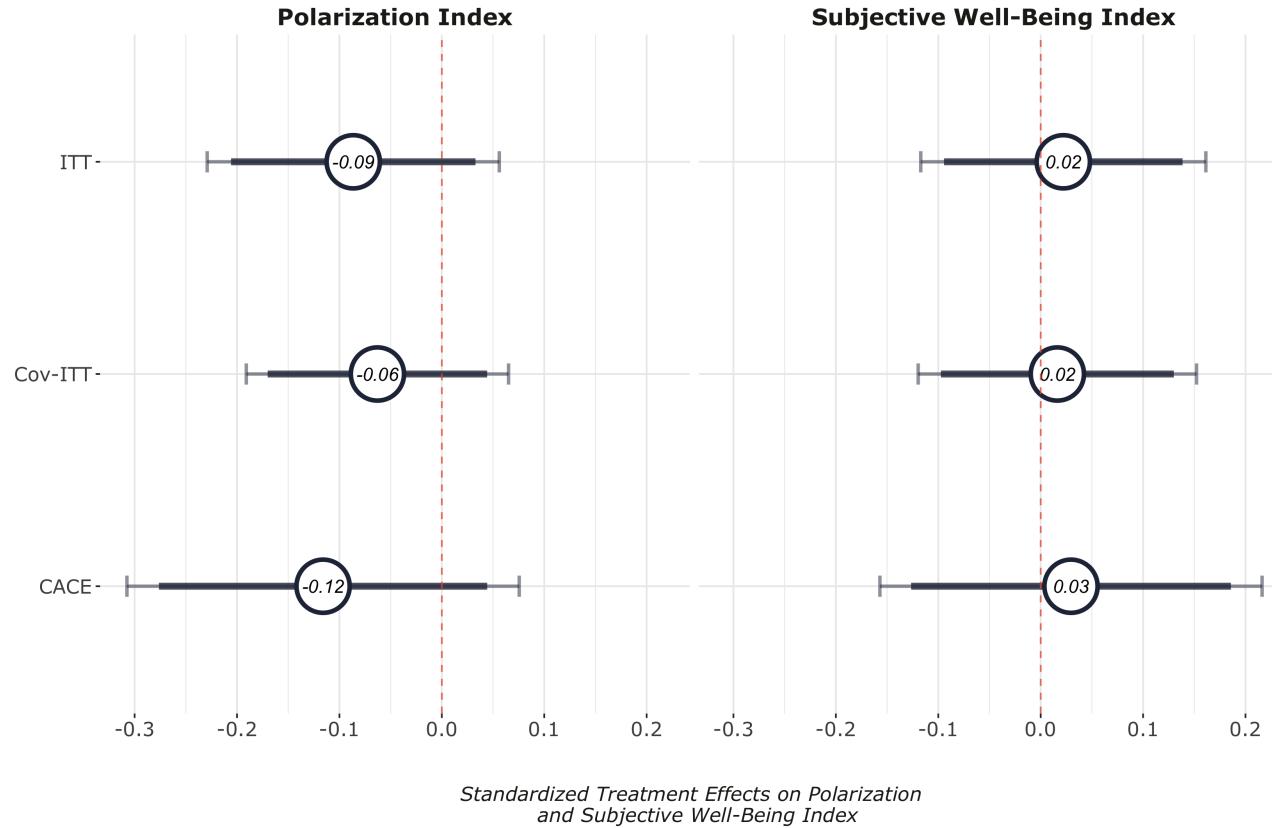


Effects on Belief Accuracy

B

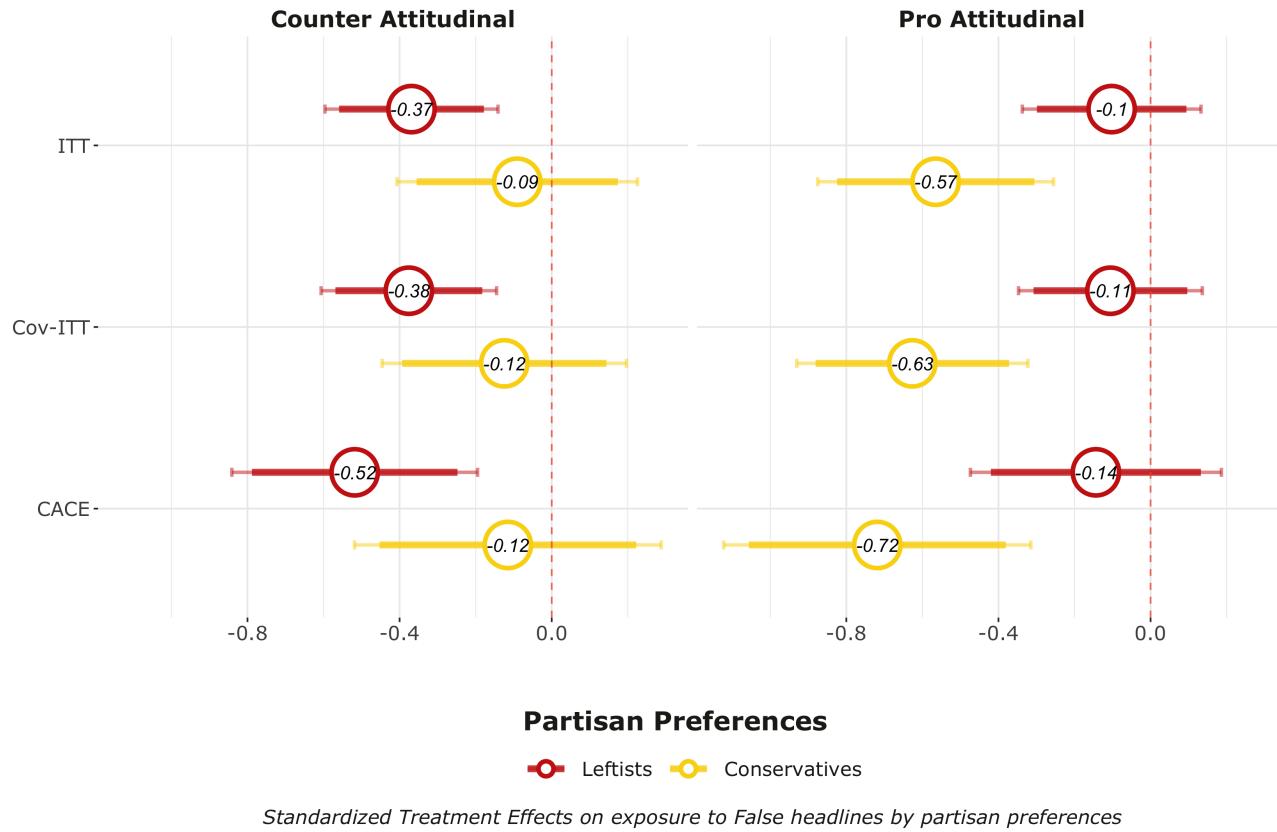


Effects on Polarization & Subjective Well-Being

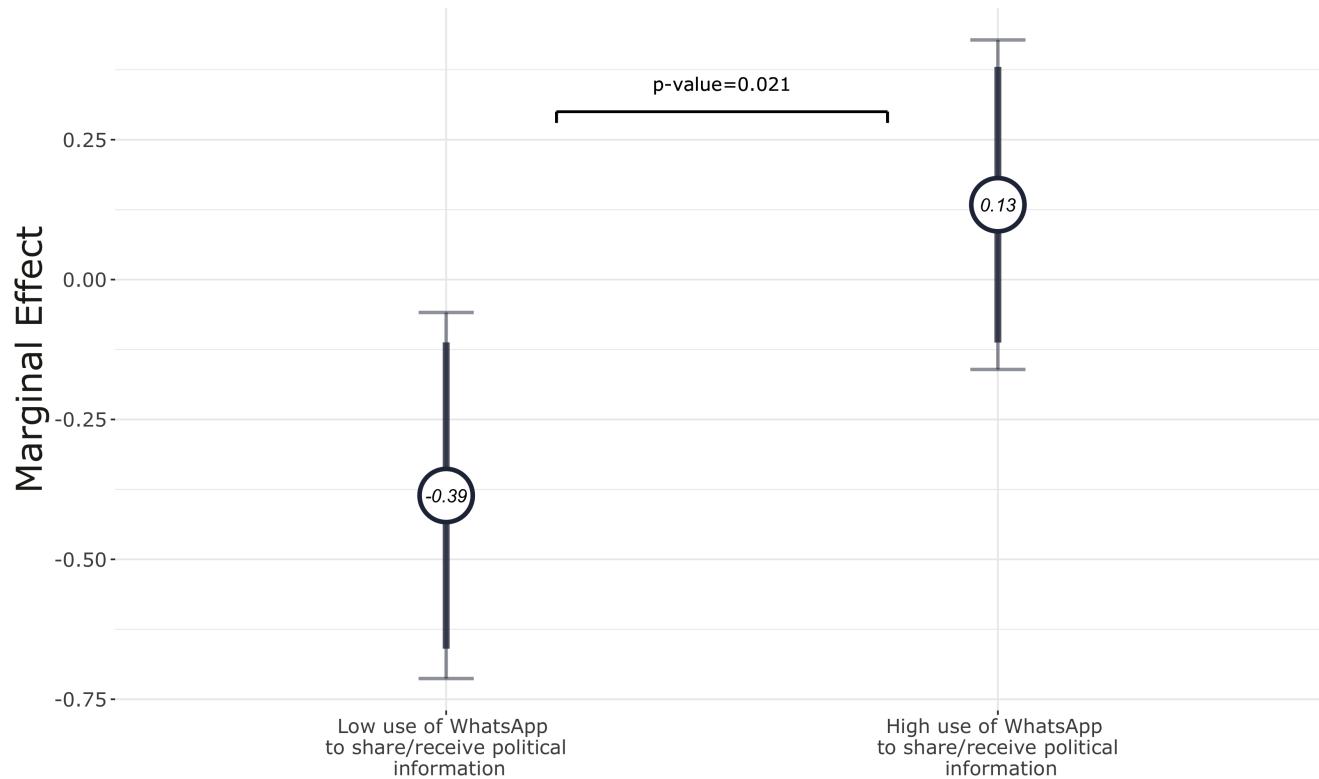


Additional Analyses

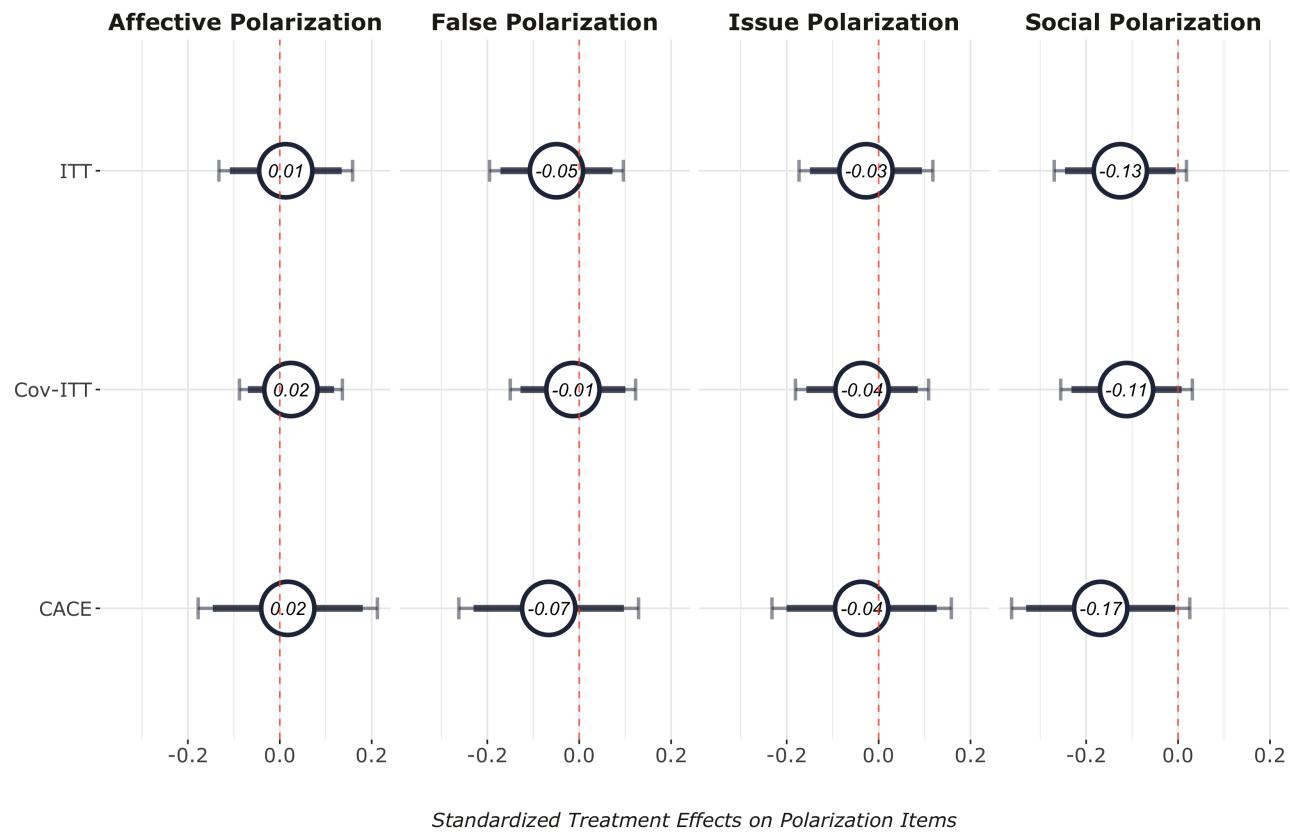
Exposure and Partisanship



Belief Accuracy Conditional on WhatsApp usage for Politics



Polarization Outcomes



Discussion

- ⇒ WhatsApp is an important vector through which voters receive misinformation
- ⇒ The null results provide support for a minimalist view of the causal effects of WhatsApp on political attitudes

BUT...

It would be a mistake to conclude that WhatsApp plays no role in politics.

- scope conditions: focus on direct effects of WhatsApp.
- Do not rule out the use of WhatsApp as a mobilization and organizational tool by malicious actors.
- Larger effect might exist exactly in hard to reach populations.
- Small effect size vs Small Sample.
- Electoral context + Motivated Reasoning

Thank you!

How to frame articles for general
audience journals? Nathan... ?