EMERGENT STRUCTURES OF ATTENTION ON SOCIAL MEDIA ARE DRIVEN BY AMPLIFICATION AND TRIAD TRANSITIVITY

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BIG IDEAS (TL;DR)

Attention brokers are influential users who frequently amplify content.

They create new ties in their network by exposing their followers to novel content.

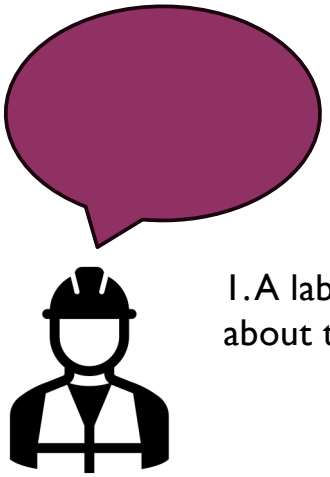
This has implications for our understanding of attention as an **emergent phenomenon**.

AN ILLUSTRATED EXAMPLE

- Introducing Jorts the Cat:
  - Subject of a viral /r/amitheasshole post
  - Became a Twitter presence (in the cat's persona)
  - Vocal supporter of labor activism (again, in the cat's persona)
- Jorts is one of our two attention broker case studies!

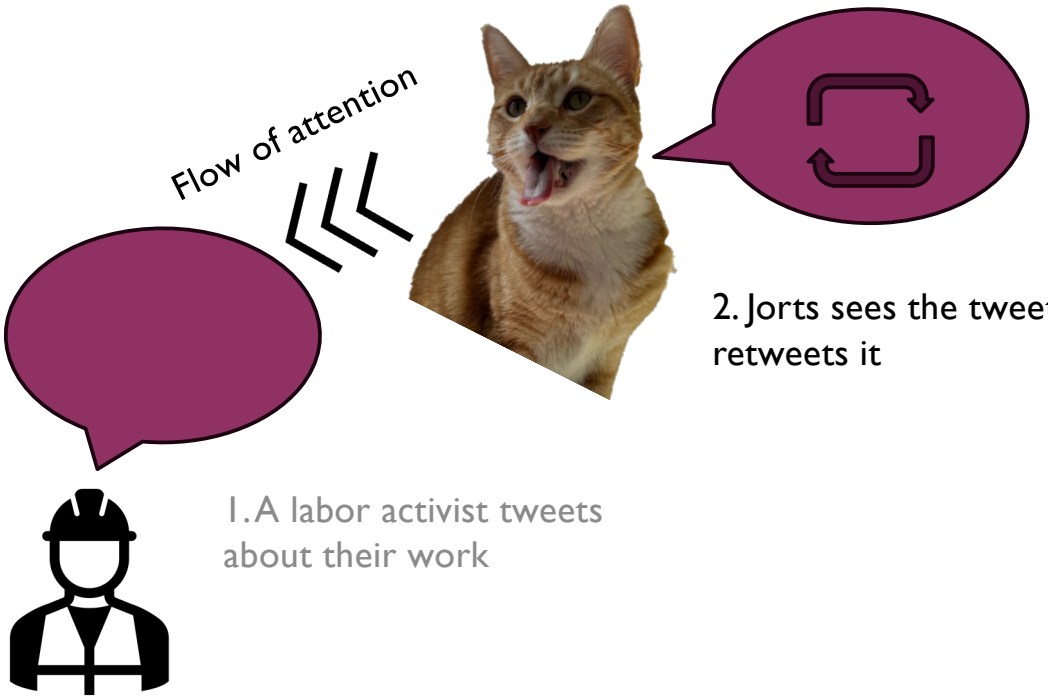
Image via jortsthecat.bsky.social (link)

AN ILLUSTRATED EXAMPLE



1. A labor activist tweets about their work

AN ILLUSTRATED EXAMPLE



2. Jorts sees the tweet and retweets it

1. A labor activist tweets about their work

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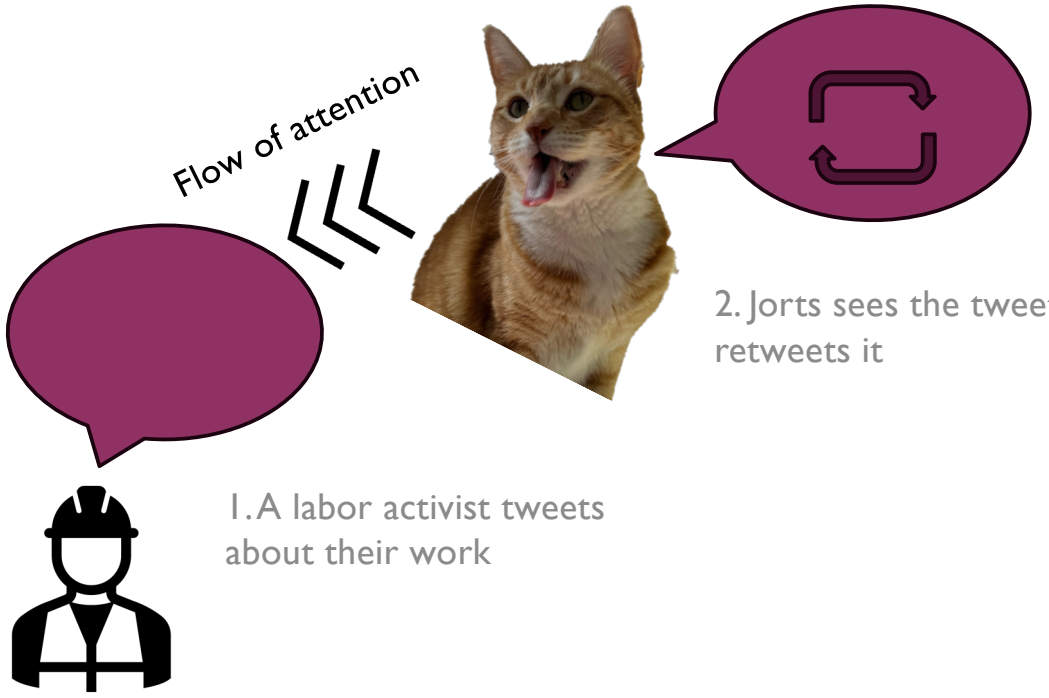
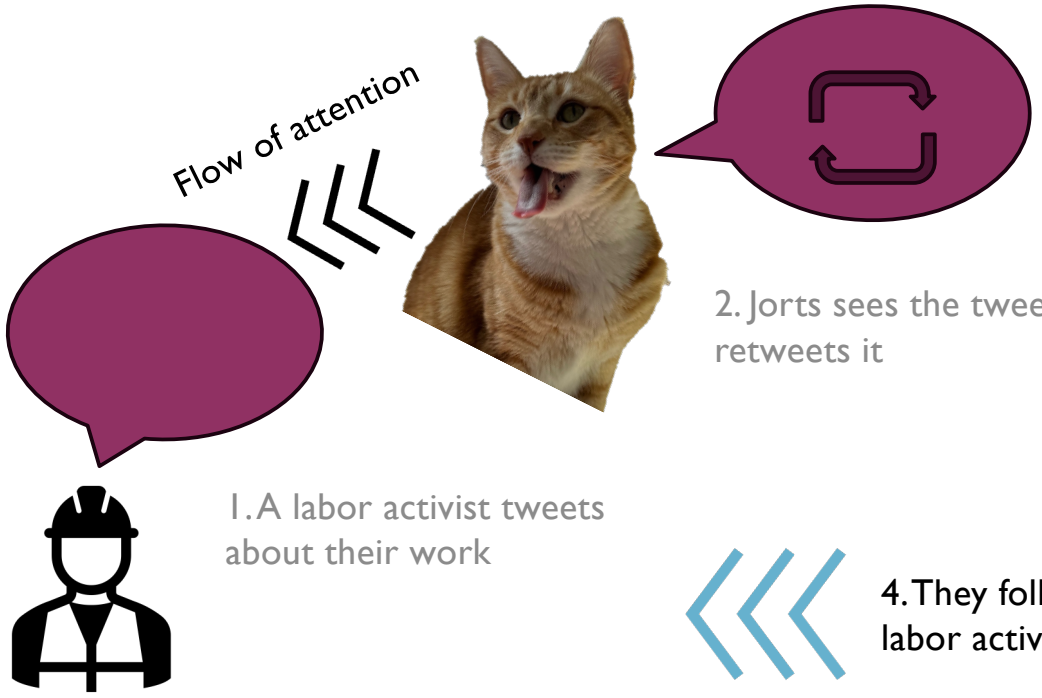


1. A labor activist tweets about their work

2. Jorts sees the tweet and retweets it

3. One of Jorts' followers sees the tweet and thinks it's great

AN ILLUSTRATED EXAMPLE

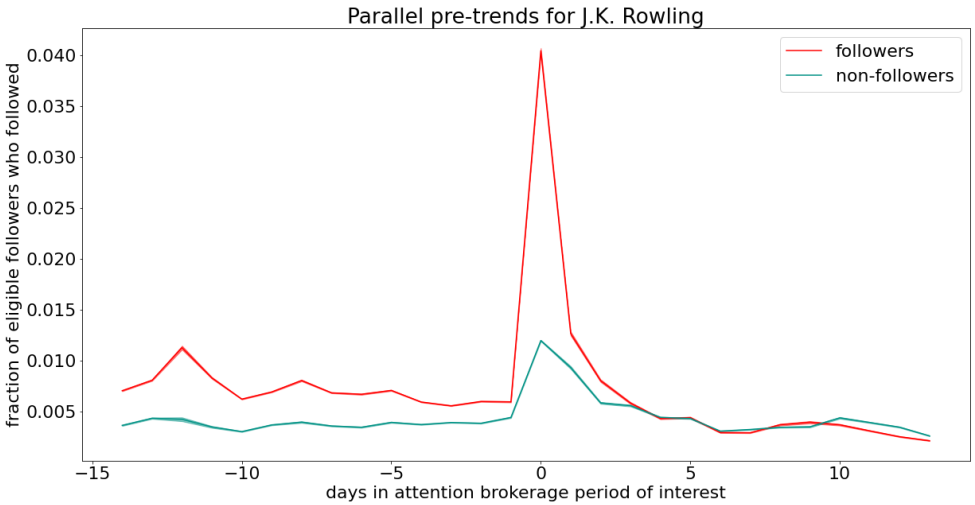


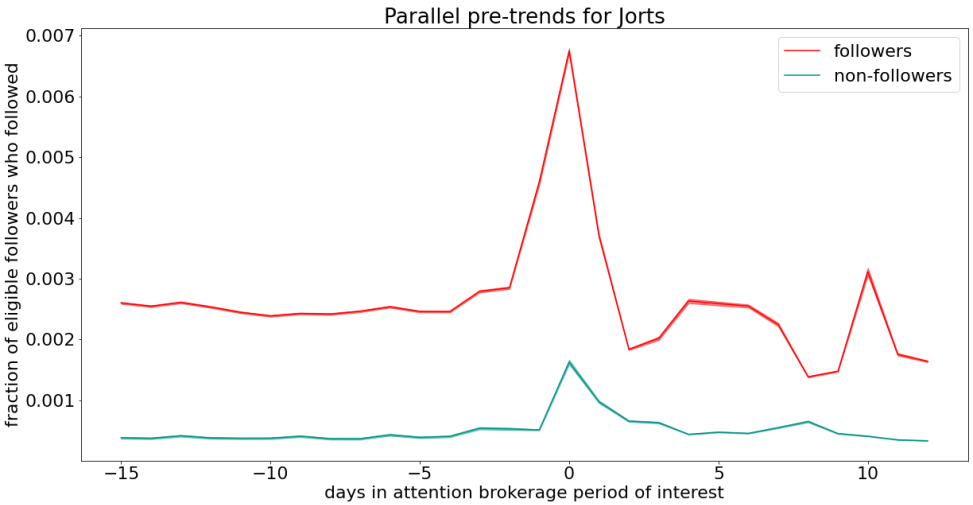
HIGH-LEVEL METHODS OVERVIEW

- Two attention broker case studies, Jorts and J.K. Rowling
- We collected their retweets over a few months (Jorts) and a few years (Rowling)
- For each retweet, we did the following*:
  - Figured out who followed the retweeted account in the 2 weeks before & after the retweet
  - Figured out whether each follower was following Jorts **before** they followed the retweeted account
- We used causal inference (two-stage differences-in-differences) to figure out whether users following an attention broker when the attention broker retweeted an account followed the retweeted account at a higher rate than non-followers.

* (there's a cool hack we used with the Twitter V1 API (RIP) to put arbitrarily exact time bounds on when a following event occurred)

INITIAL AVERAGE TRENDS





ACCOUNT CATEGORIES

Rowling:

Interest Actor (y/n): An account that talks about politics, and is influential in discussion of politics**, but is not a traditional political elite.** (Moses, 2023)

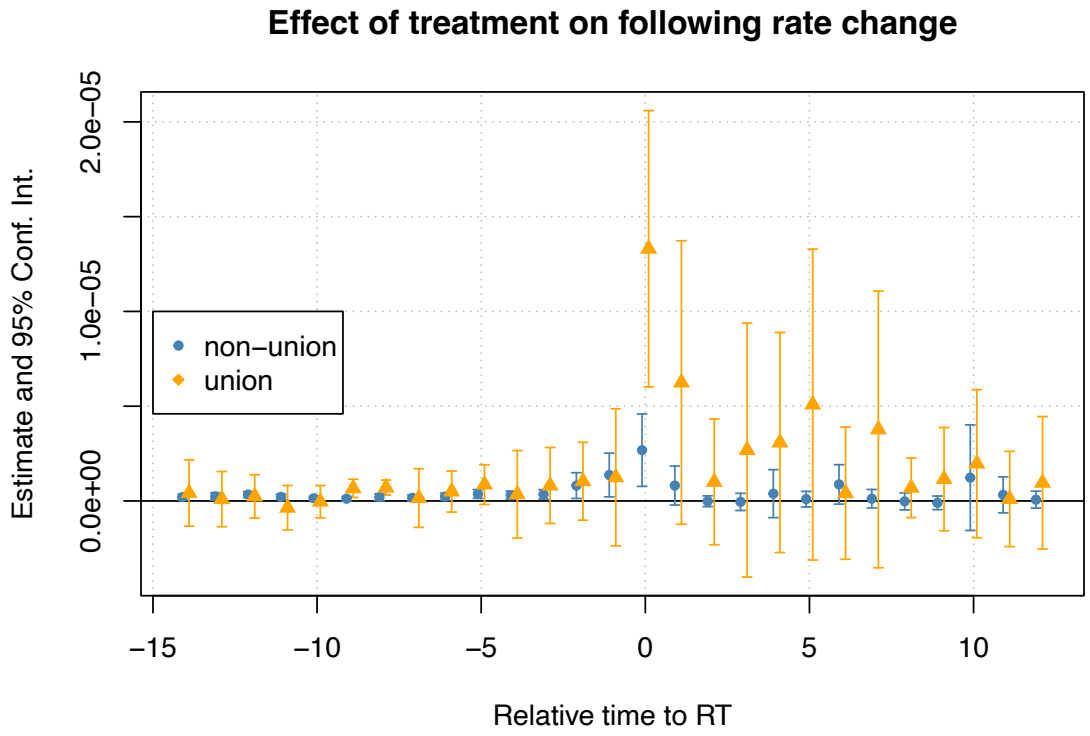
TERF (y/n): Trans-Exclusionary Radical Feminist (attacks trans women by upholding hegemonic, cissexist ideas about womanhood)

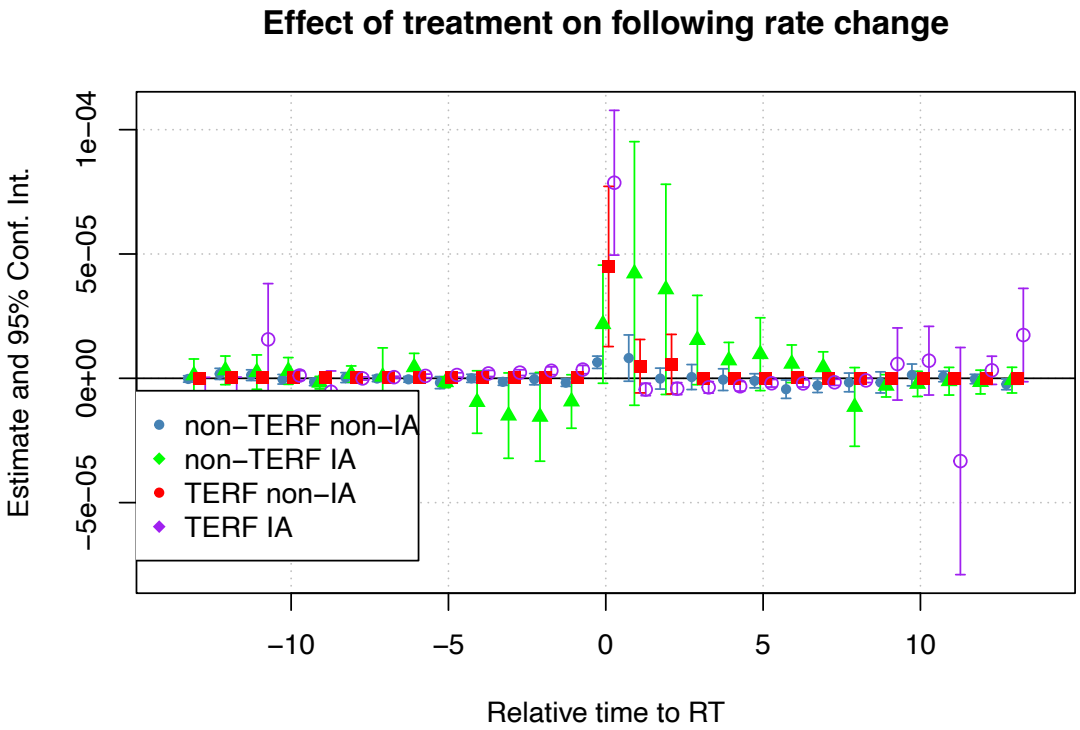
Jorts:

Union (y/n): Frequently (more than half the time) discusses labor activism and/or union organizing.

RESULTS: JORTS

- Accounts are broken out by type
- The effect of following Jorts is significant on day 0 (and much larger for union-related accounts)
- After day 0, the effect size is not obviously significant.



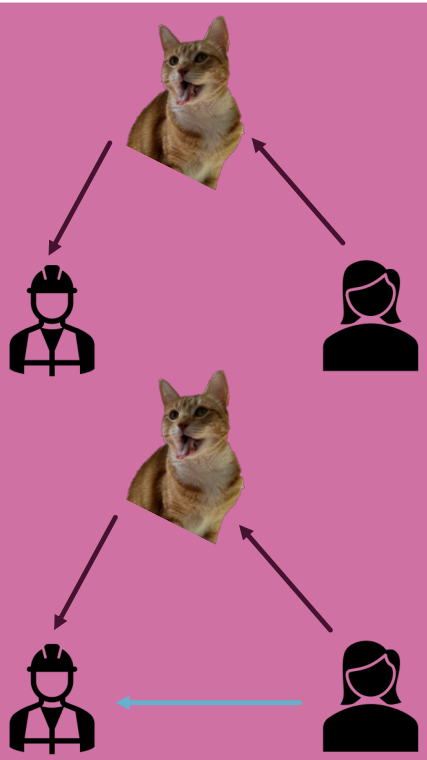


RESULTS: ROWLING

- Accounts are broken out by type
- The effect of following Rowling is significant on day 0 for all types
- After day 0, the effect size is not obviously significant.


Why
Does This
Matter?

NETWORK SCIENCE HAS ENTERED THE CHAT



We started out with this structure (an **open triad**), which is often thought of as unstable.

It evolved into a **transitive triad.** These are found in social networks more frequently than would happen by chance!

We provide empirical proof of a causal mechanism that explains how open triads become transitive.

This is an emergent process, meaning that the behavior we see arises from the social network interacting as a whole system.

IMPLICATIONS FOR PEOPLE WHO DON'T CARE ABOUT TRANSITIVITY

- Attention brokerage can occur in any sociotechnical system where amplification with attribution is possible
- Restructuring attention on social media tends to be "sticky" – so this can result in long-lasting change (and feedback loops!)
- Shifting attention can have very real ramifications offline
  - Libs of TikTok & threats to gender-affirming care clinics
  - Curation bubbles (Green et al., 2025) can arise over time
- Emergent phenomena matter when we're thinking about questions of power in sociotechnical systems!

THANK YOU!!!

Super excited for your questions!!!

Let's stay in touch:

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WORKS CITED

GREEN, J., MCCABE, S., SHUGARS, S., CHWE, H., HORGAN, L., CAO, S., & LAZER, D. (2025). Curation Bubbles. *American Political Science Review*, 1–19. doi:10.1017/S0003055424000984

Moses, L. 2023. Conceptualizing and identifying "Interest Actors". Open Science Framework. https://osf.io/zyva9, preprint: not peer reviewed.

Rambachan, A., & Roth, J. (2023). A more credible approach to parallel trends. *Review of Economic Studies*, *90*(5), 2555-2591.

BACKUP: DID2S MATH

$$Y_{it} = \mu_i + \mu_t + \sum_{k=-14}^{-1} \tau^k D_{it}^k + \sum_{k=0}^{14} \tau^k D_{it}^k + \epsilon_{it}$$

Following Rate

Account-level fixed effects

Temporal fixed effects

Effects of attention brokerage on day *k*

Treatment lead/lag variable

Error term

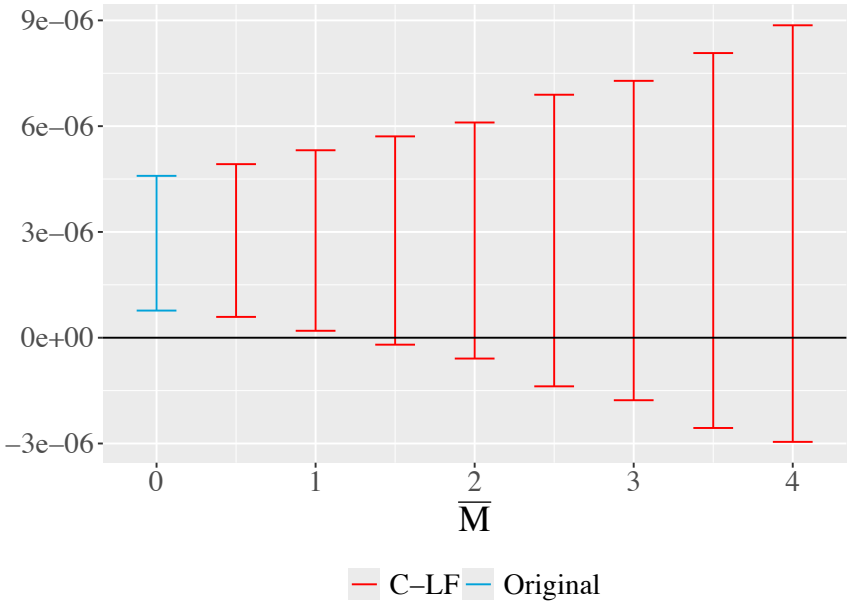
ROBUSTNESS CHECKS

We use the HonestDiD package from Rambchan and Roth (2023) to check how robust our results are to violations of the parallel trends assumption.

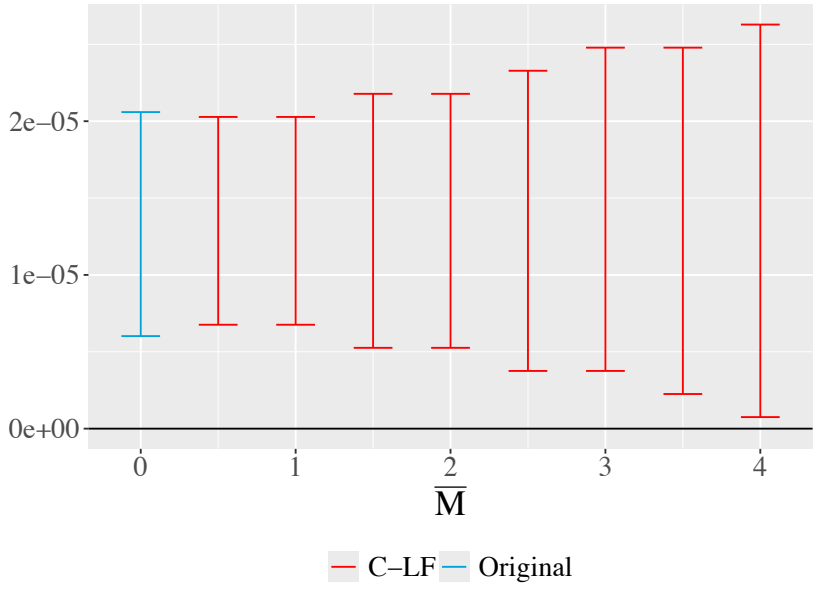
Rambchan and Roth's method allows us to quantify how many times larger the post-intervention violation of the parallel trends assumption must be, compared to the magnitude of any preintervention violations, for our results to become invalid.

ROBUSTNESS CHECKS: JORTS

Non-Union

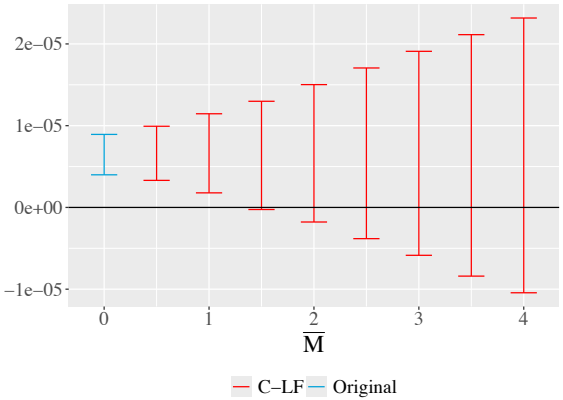


Union

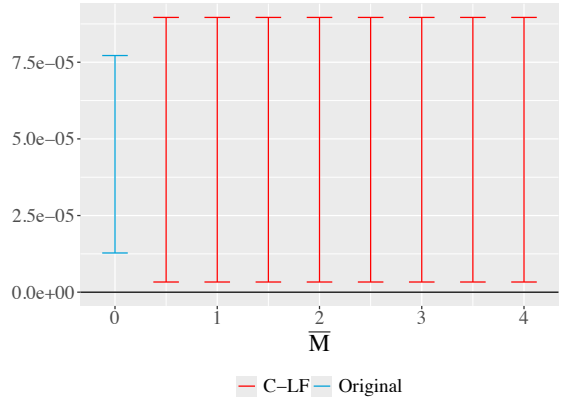


ROBUSTNESS CHECKS: ROWLING

Non-TERF
Non-IA



Non-IA
TERF



TERF
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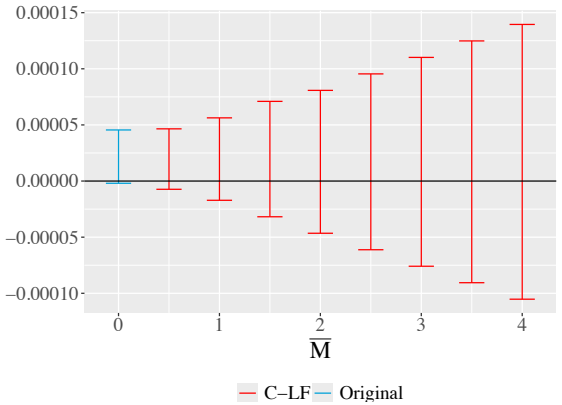

IA
TERF