Fantastic Beasts and Whether They Matter:

How Pro-Government "Trolls" Influence Political Conversations in Russia

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COMPASS, UCLA 2018

Fake agents

- Kuran (1989), Lohmann (1994): the role of public signals in political behavior
  - The key factor of the decision to act: the ability to learn the distribution of preferences
- "Fake agents" generate informational noise and can complicate political learning

"DISSIDENTS DECIDED TO ORGANIZE A MEETING AT PUSHKIN SQUARE. WHAT SHOULD HAVE WE DONE? WE MOBILIZED "VOLUNTEERS AMONG COMMUNISTS" AND ORGANIZED OUR OWN MEETING TO OCCUPY THE SAME PLACE."

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VLADIMIR PUTIN, 2000

Fake agents on social media

What we DO know

- **Extremely widespread phenomenon.** Venezuela (Munger et al, 2015), South Korea (Keller et al, 2017), China (King et al. 2016, Miller, 2017), Russia (Sanovich et al 2017)
- **Different political contexts:** from elections to protests

Political astroturfing on social media

What we DO NOT know

- Governments spend huge amount of money to employ "fake commentators", but
  - The impact of political astroturfing is unclear
  - Do regular Internet users pay attention to what pro-government agents write? Can pro-government agents engage others with the loyalist agenda? Can they divert ordinary users from criticizing the government?

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  - Present a novel dataset of trolls' activities on *LiveJournal*
  - A framework for analyzing politically charged conversations on social media
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  - A method of estimating the effect of interventions on critically charged online discussions
  - Do trolls change online conversations?

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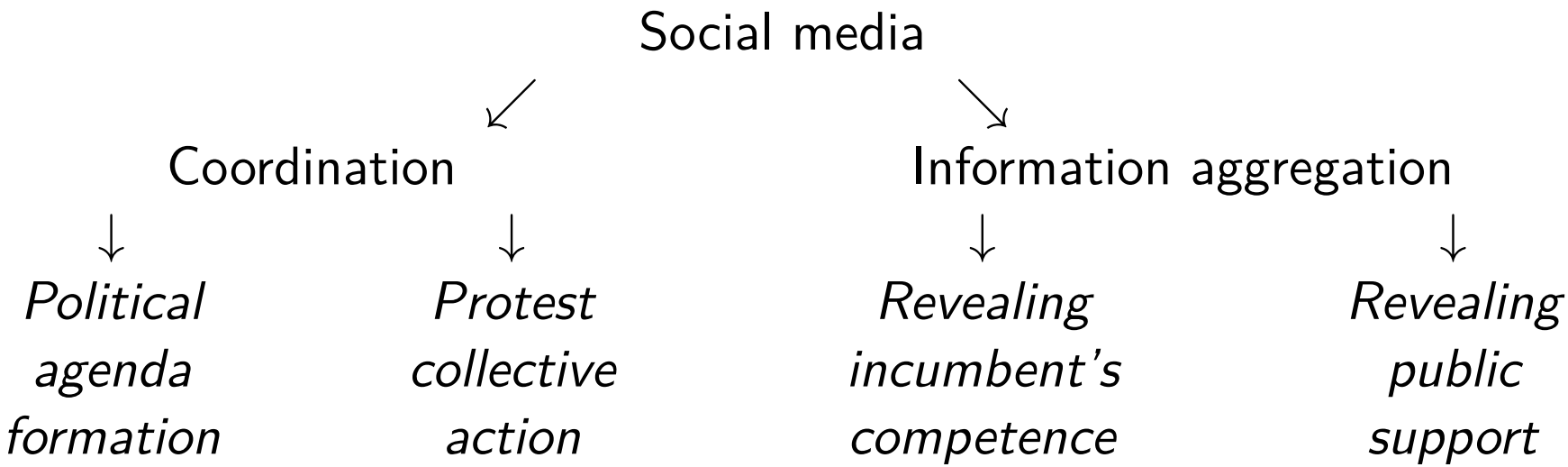
  - Do trolls change online conversations? **Yes. sometimes...**

Social media and contentious politics



Government responses

	$\longrightarrow$	*Legal restrictions*
Censorship	$\longrightarrow$	*Intimidation*
	$\longrightarrow$	*Black lists and content filtering*
Propaganda	$\longrightarrow$	*Exposure to biased news reports*
	$\longrightarrow$	*Exposure to fake regime supporters*
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Example

- a post "*Fasting Will Be Less Pleasant*" by Deacon Andrei Kuraev
  - food ban negatively affects Orthodox Russians Great Lent before Easter
  - a follow-up discussion of negative effects of sanctions
  - Глусмапгода "problem would be solved in a couple of years, because Crimea is a perfect place to grow olives"
  - Глусмапгода is a troll accont
- Two scenarios of interest:
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  - a shift toward discussion of positive aspects of Crimea annexation

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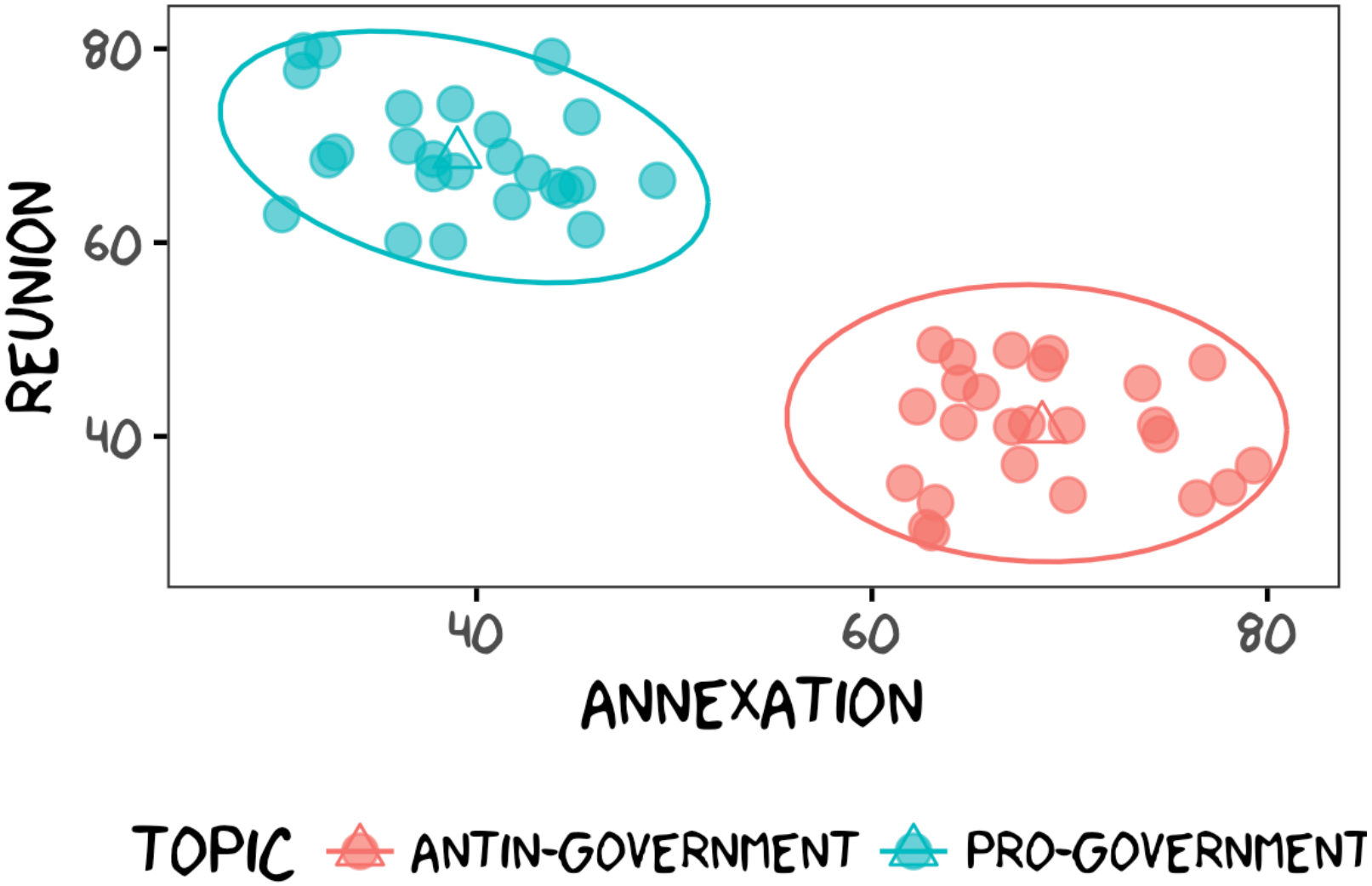
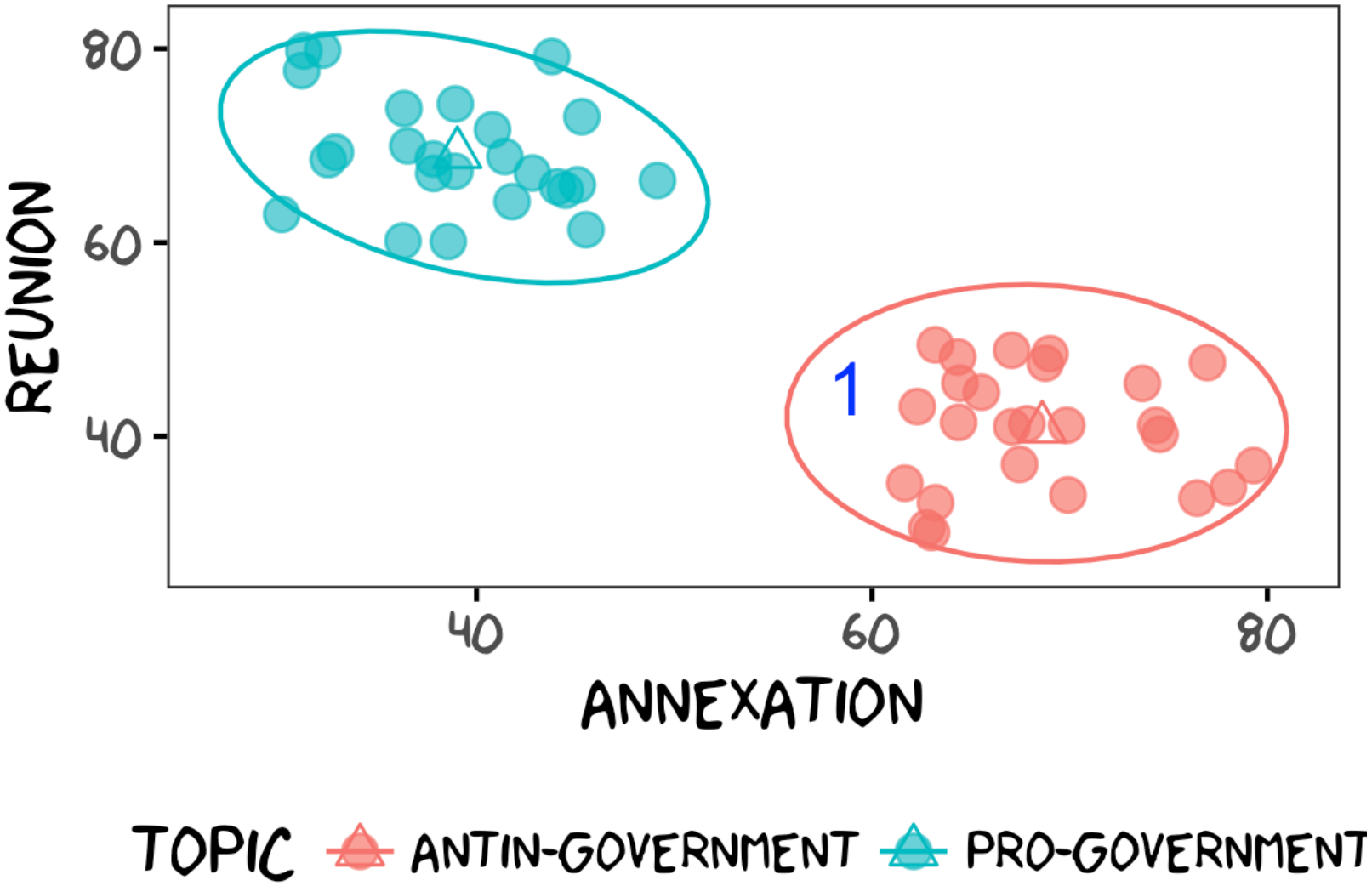
  - shift toward discussion of positive aspects of Crimea annexation **promotion**

How to track the shift in online conversations



How to track evolution of online conversations



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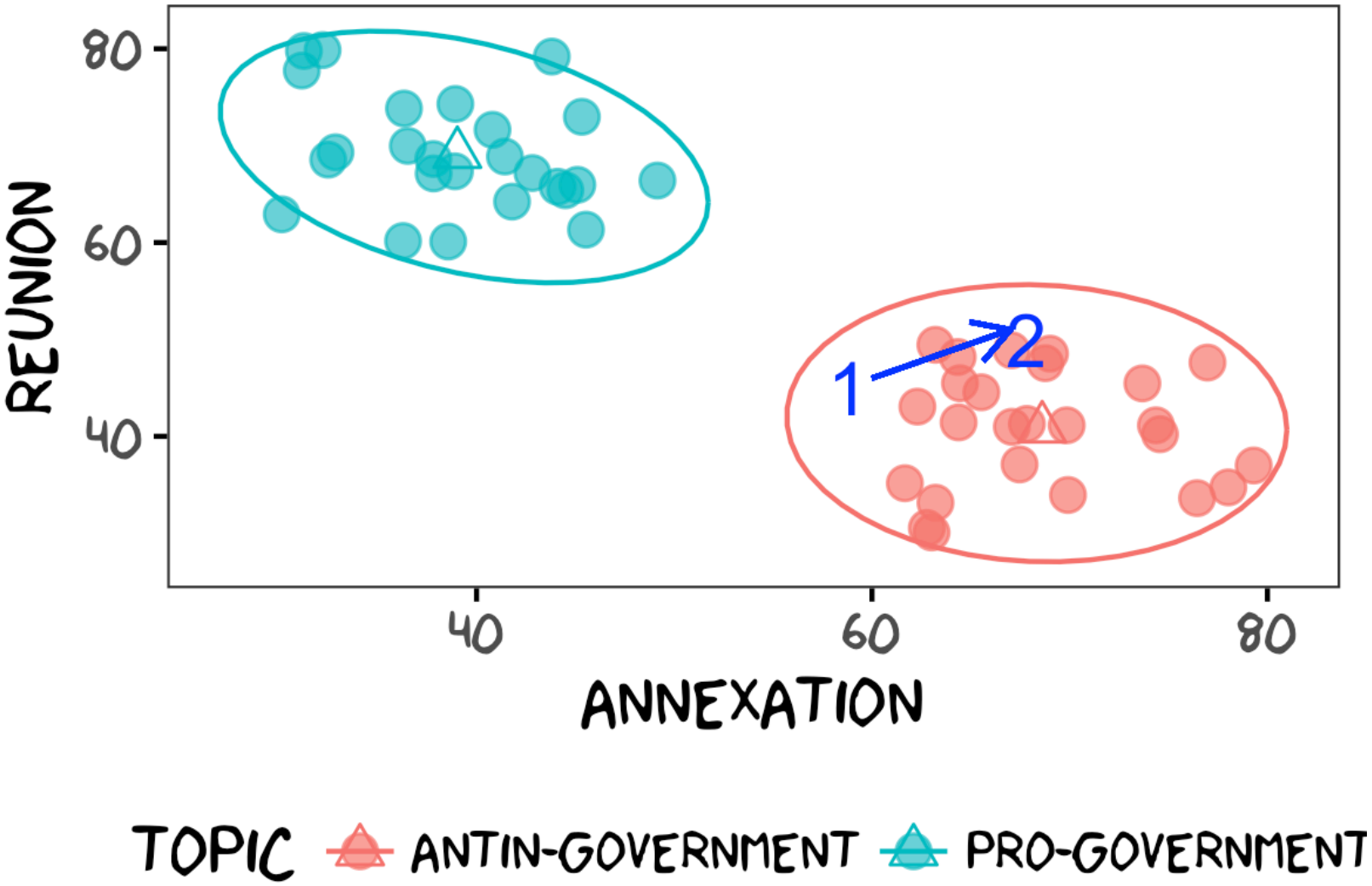

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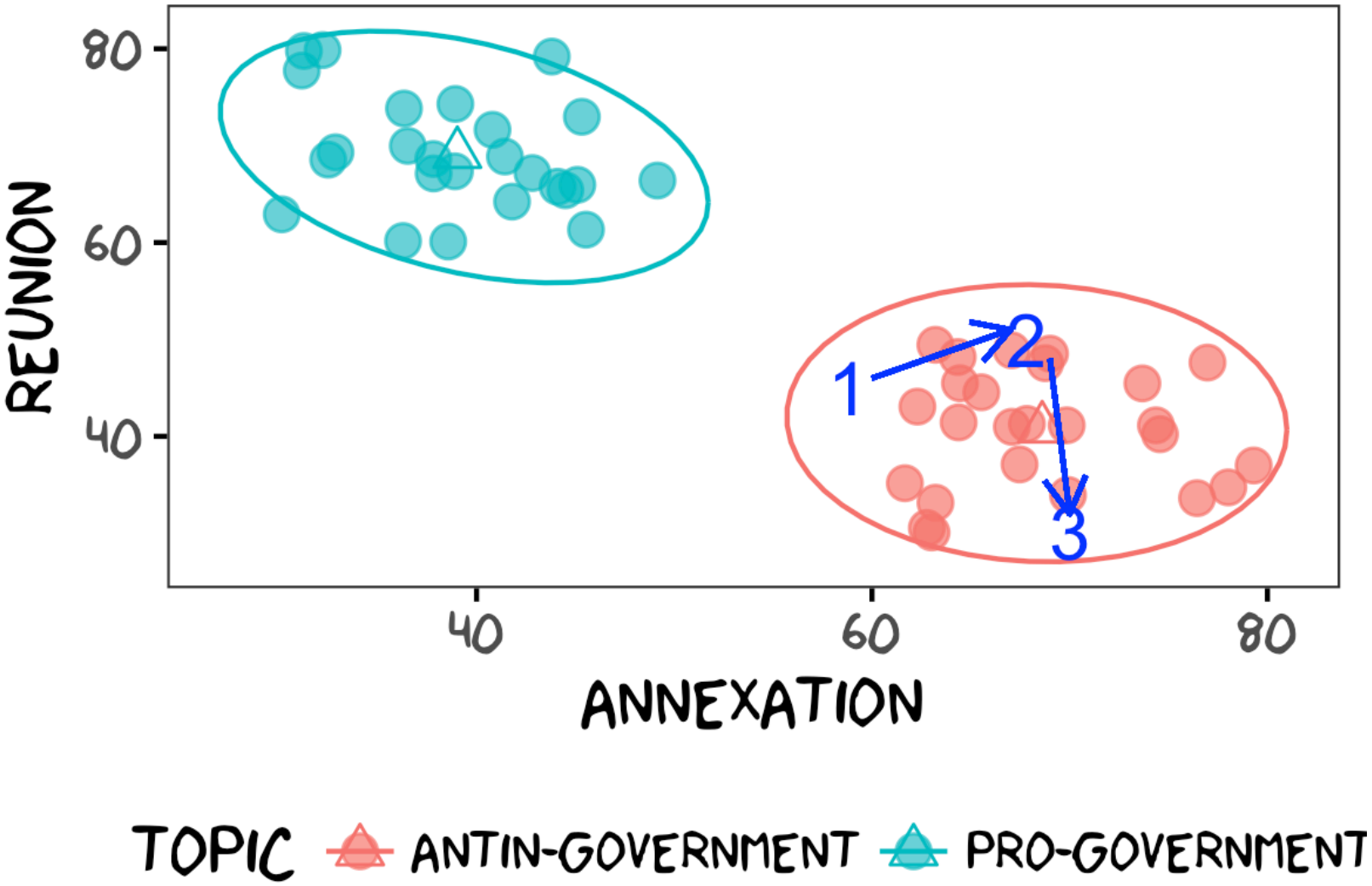

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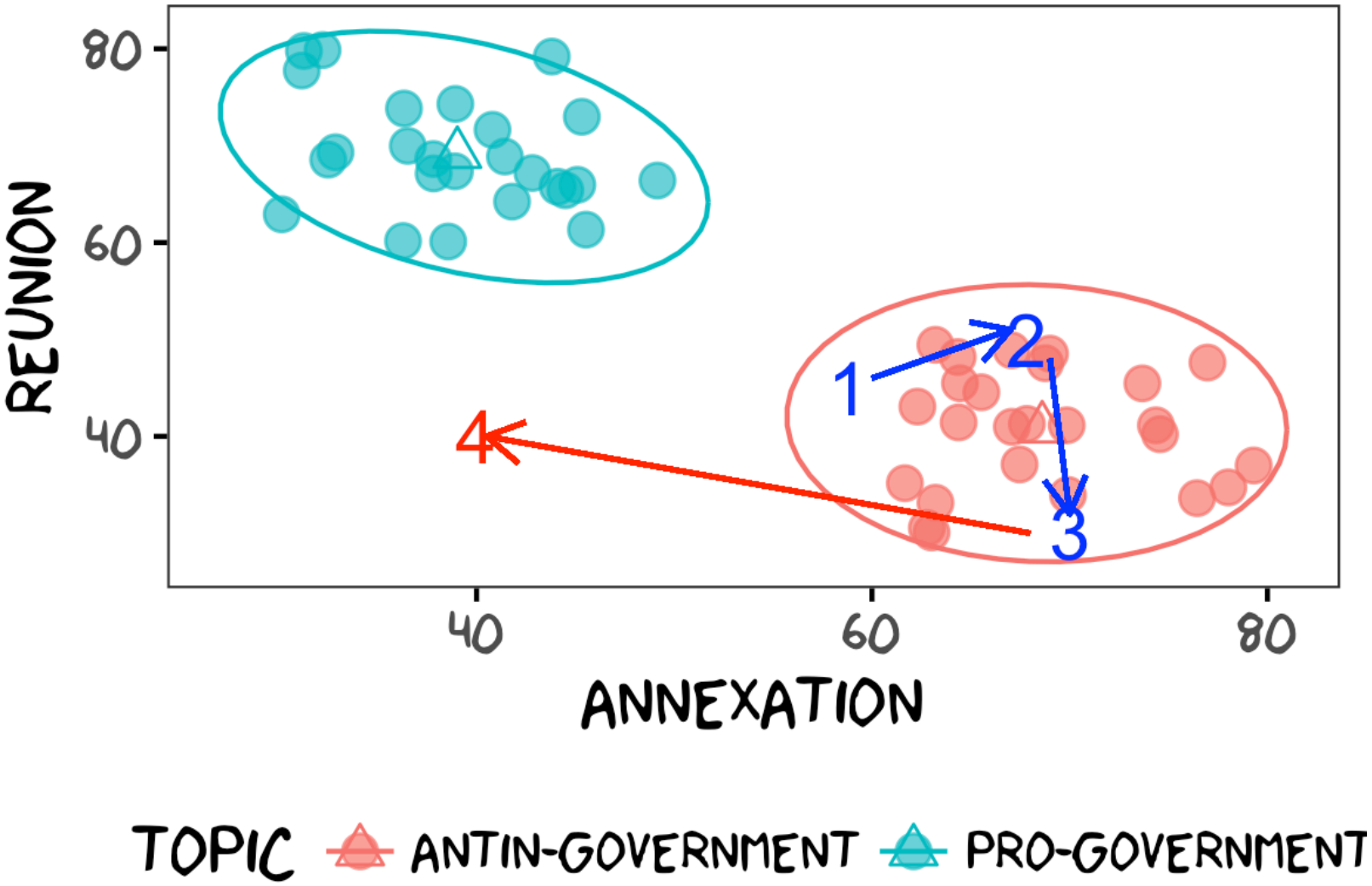

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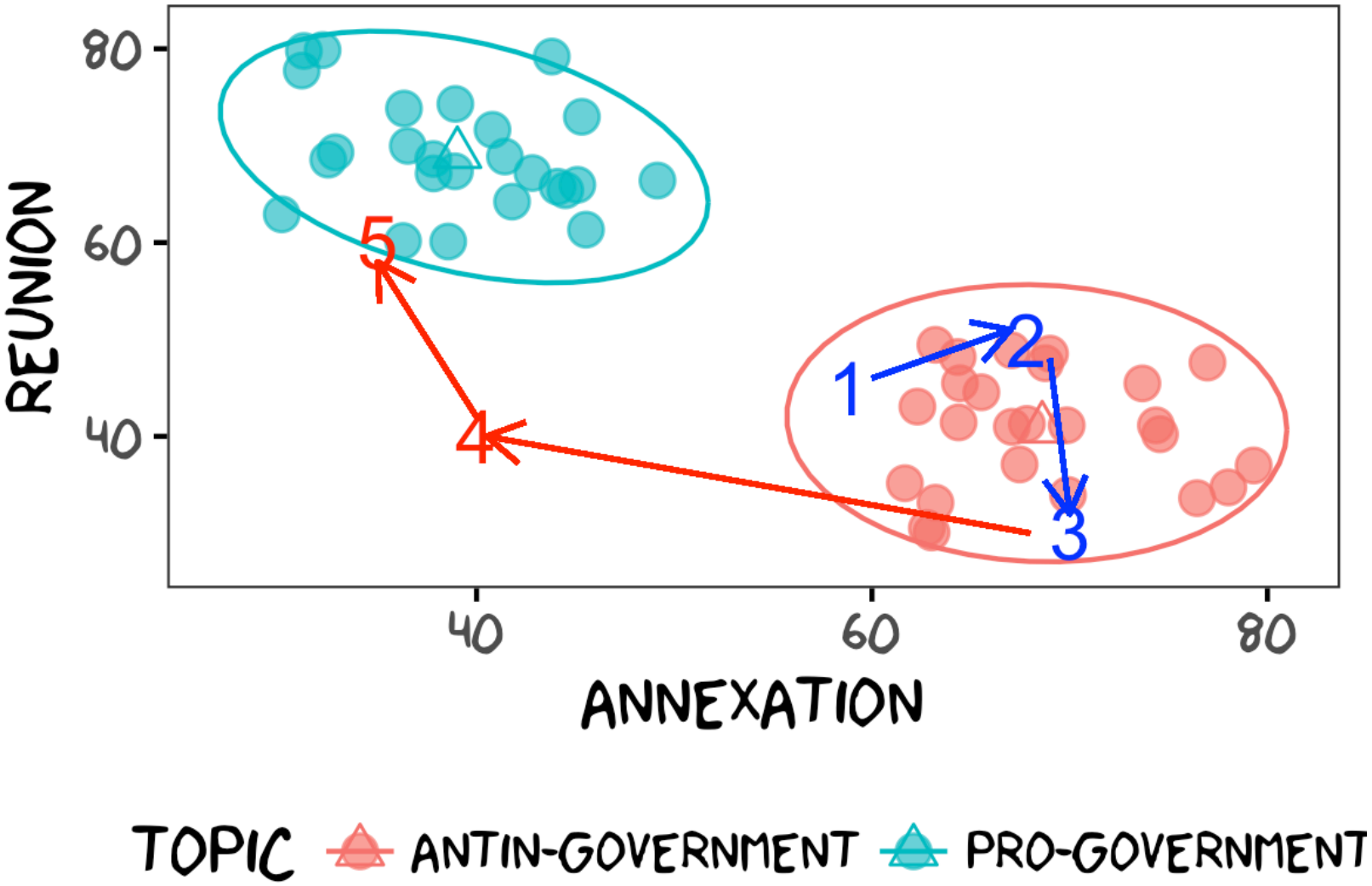

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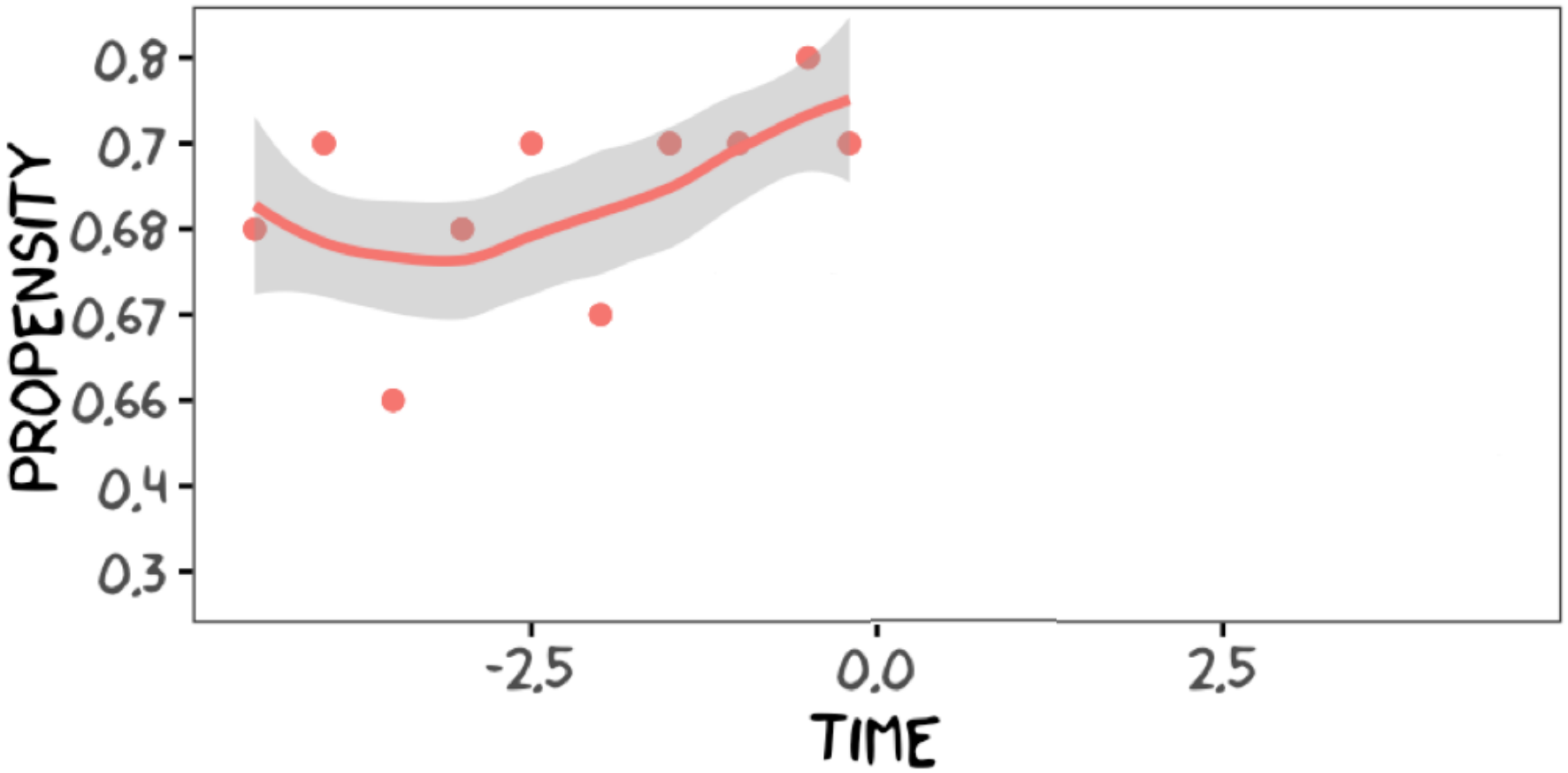

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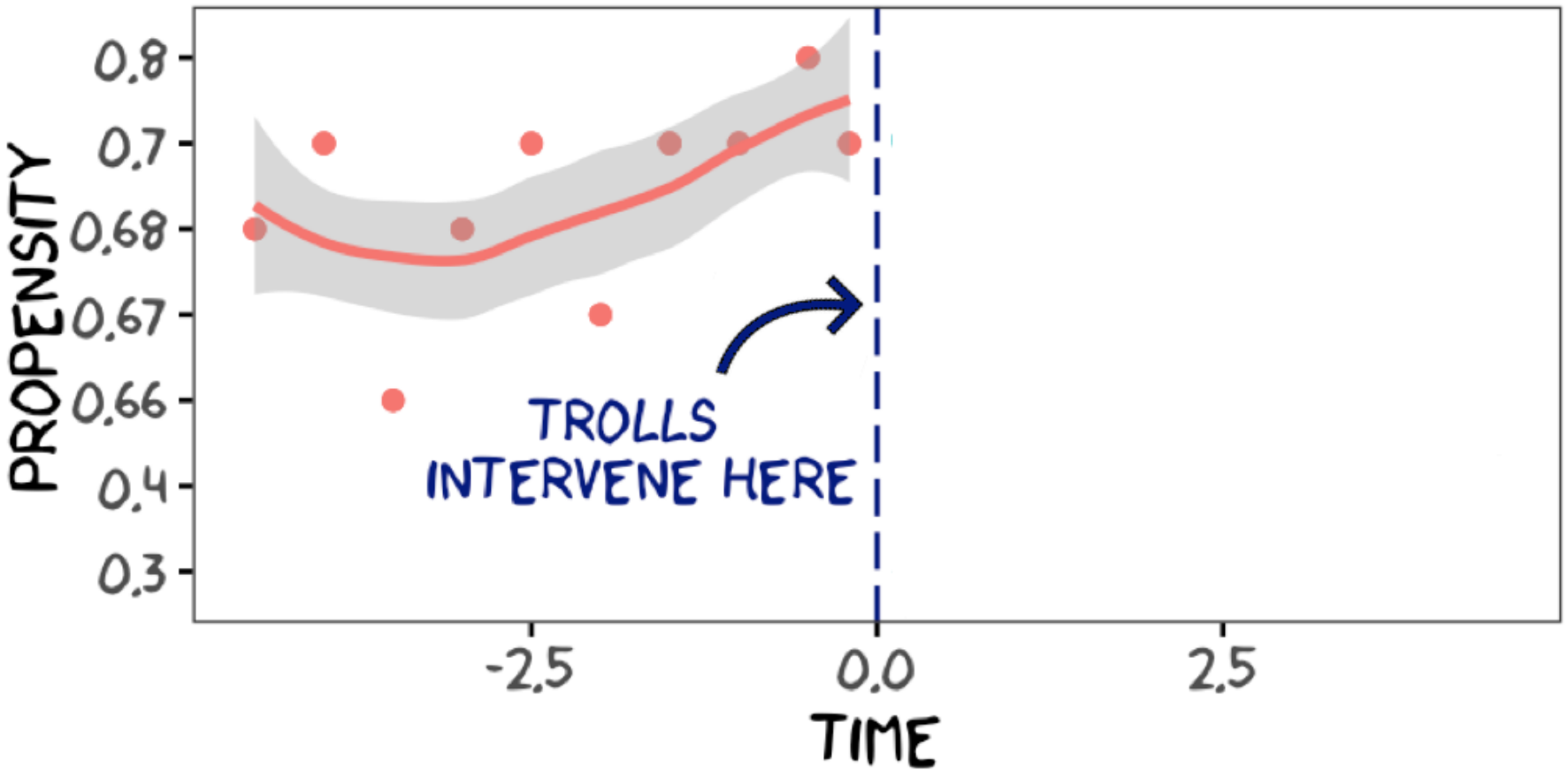

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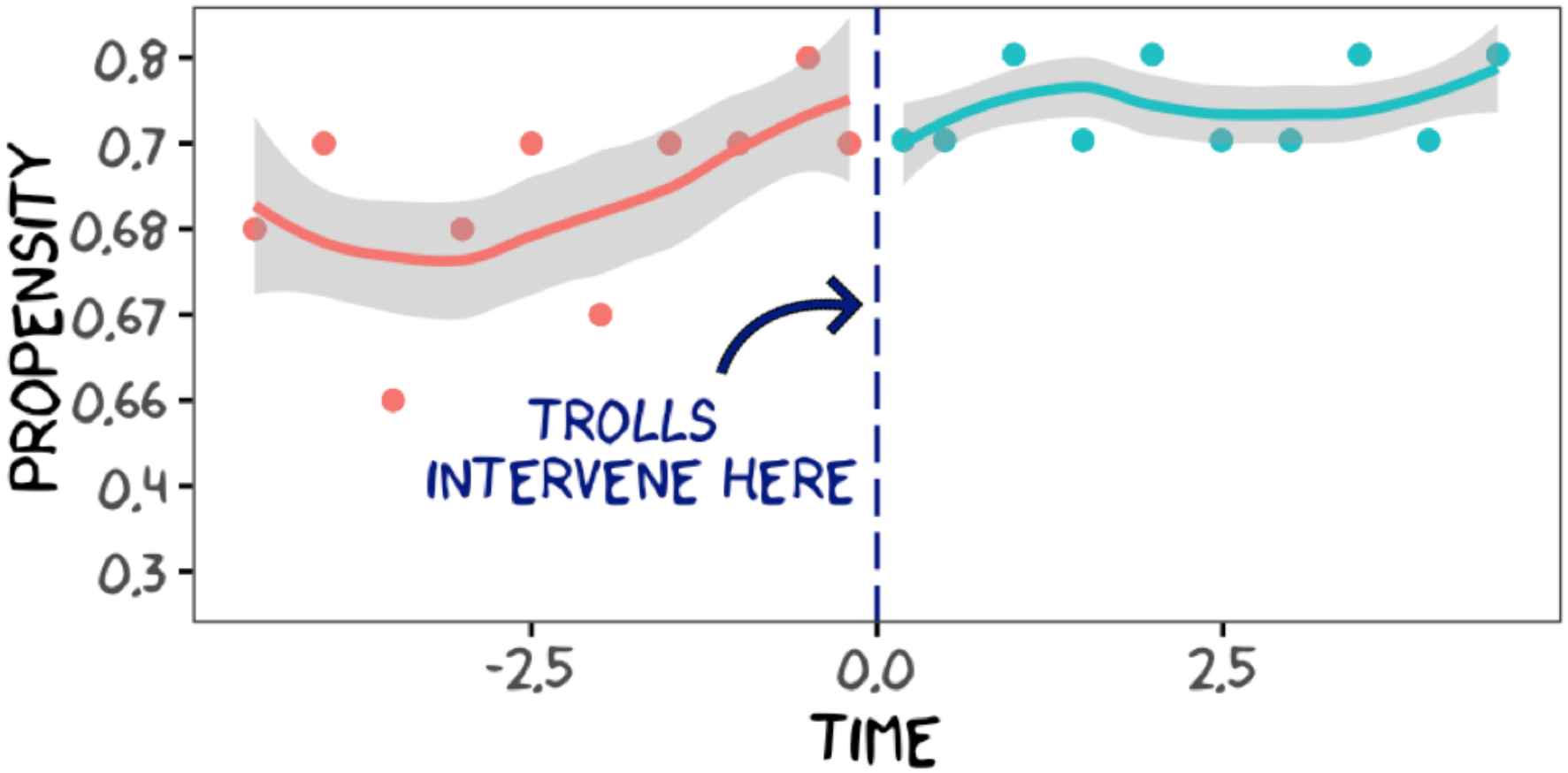

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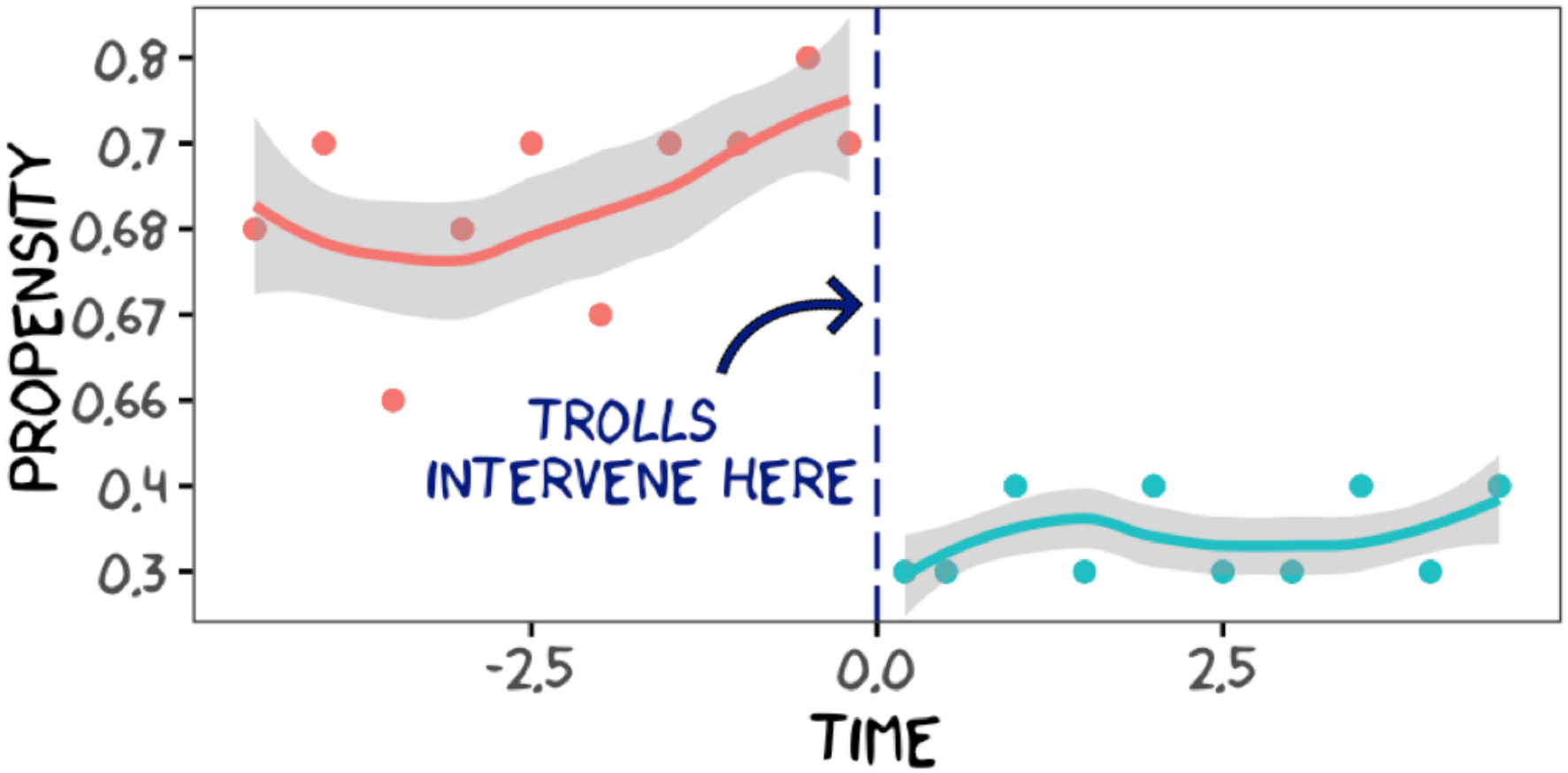

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- ***LiveJournal, 2014-2015***
  - leads in the amount of discussions concerning current affairs (Koltsova and Shcherbak, 2014)
  - has happened to be the most common social media platform for dissidents of the regime

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  - has happened to be the most common social media platform for dissidents of the regime
  - in March 2015, *Novaya Gazeta* published an investigation about the activities of "Trolls Factory" on *LJ*.
    - List of 700 trolls' accounts

Data - 2

- a dataset of almost 438k trolls' posts
- a dataset of 80k posts and follow-up discussions infiltrated by those trolls
  - 60k did not refer to any current affairs
  - 12k discussed politics
  - 8k discussed problems with Russian national economy

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Data processing

	Author	Time		Post Title
		Post		
	User 1	Time	Comment	Pooled Comments $t = -2$
	User 2	Time	Comment	
	User 1	Time	Comment	Pooled Comments $t = -1$
	User 2	Time	Comment	
drop ←	Troll 1	Time	Comment	$t = 0$
	User 2	Time	Comment	Pooled Comments $t = +1$
drop ←	Troll 2	Time	Comment	
	User 1	Time	Comment	
	User 3	Time	Comment	

Data processing

- For each group of posts:
  - Split the follow-up conversations into 30-minute slices (+- 5 hours around the time of the first troll comment)
  - Estimate the distribution of topics in these slices with Latent Dirichlet Allocation model (Blei, 2003)
  - Choose topics of interest

Topics of interest

	Economic discussions	**Politics discussions**
Anti-government topic	*"ruble" + "price" +"oil"+ "USD" + "exchange rate" + "Economy" + "crisis" + "Putin"*	*"war" + "Ukraine" + "military" + "Donbas" + "Donetzk" + "Boeing"*
Pro-government topic	*"good" + "salary" + "employed" + "better" + "jobs" + "can afford"*	*"Ukraine" + "USA" + "plot" + "Crimea" + "great" + "peace"*

Empirical strategy

- Hypotheses:
  - **Diversion hypothesis:** *the propensity of the online conversation to cover an anti-government topic goes down after trolls intervene*
  - **Promotion hypothesis:** *the propensity of the online conversation to cover a pro-government topic goes up after trolls intervene*
- Treat the time of the first troll comment as a cut-point
- Fit RD model
  - conversation-level clustered errors
  - Imbens-Kalyanaraman optimal bandwidth calculation (Imbens and Kalyanaraman, 2012)
- Result: LATE on the change in the prominence of the topic while taking into account the natural evolution of this topic in the discussion

Identification

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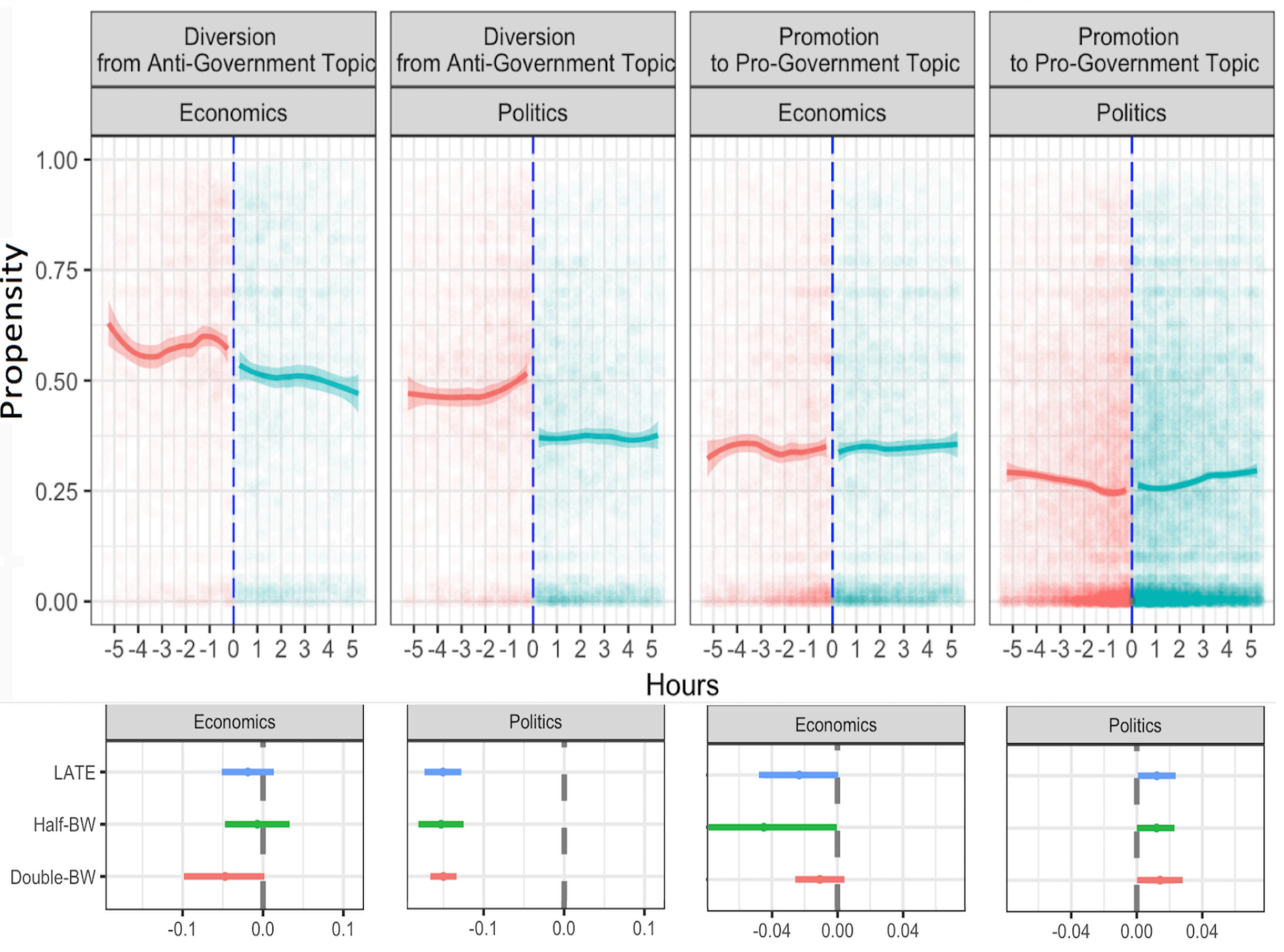
Identification

- Is this assumption plausible?
  - Evidence from data: *trolls are not different from regular users in terms of the time of their first comment*
  - Evidence from the leaked documents:
    - Trolls have fixed working hours
    - Trolls are required to post numerous comments on numerous posts per day
    - They required to attack posts of specific content
    - *Trolls need to manually read a large number of post abstracts via LJ search engine to identify the valid posts for targeting*


Diversion from Anti-Government Topic
Economics
Diversion from Anti-Government Topic
Politics
Promotion to Pro-Government Topic
Economics
Promotion to Pro-Government Topic
Politics
Propensity
1.00
0.75
0.50
0.25
0.00
-5 -4 -3 -2 -1 0 1 2 3 4 5
Hours
Economics
Politics
Economics
Politics
LATE
Half-BW
Double-BW
-0.1
0.0
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-0.04
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Threats to the validity of the results - 1: The effect of a new user

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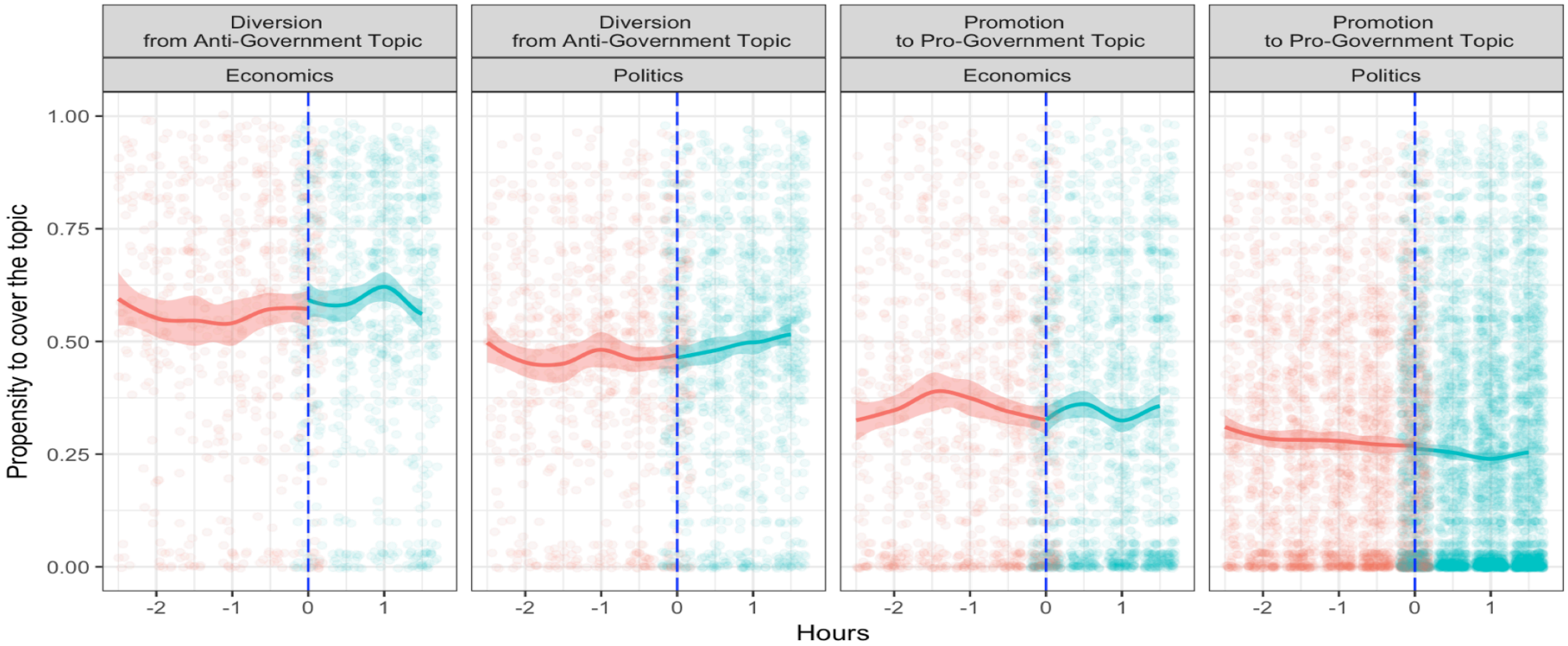

Figure: Effect of a random user

Threats to the validity of the results - 2: The incomplete list of trolls

- The actual trolls who did not appear on the *Novaya Gazeta* list were a treated as regular participants of an online conversation
  - False positive results

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- The actual trolls who did not appear on the *Novaya Gazeta* list were a treated as regular participants of an online conversation
  - False positive results
  - Evidence of the opposite:
    - *From the leaked documents:* four groups of trolls; they worked in twelve hours shifts (a standard schedule); fixed number of posts

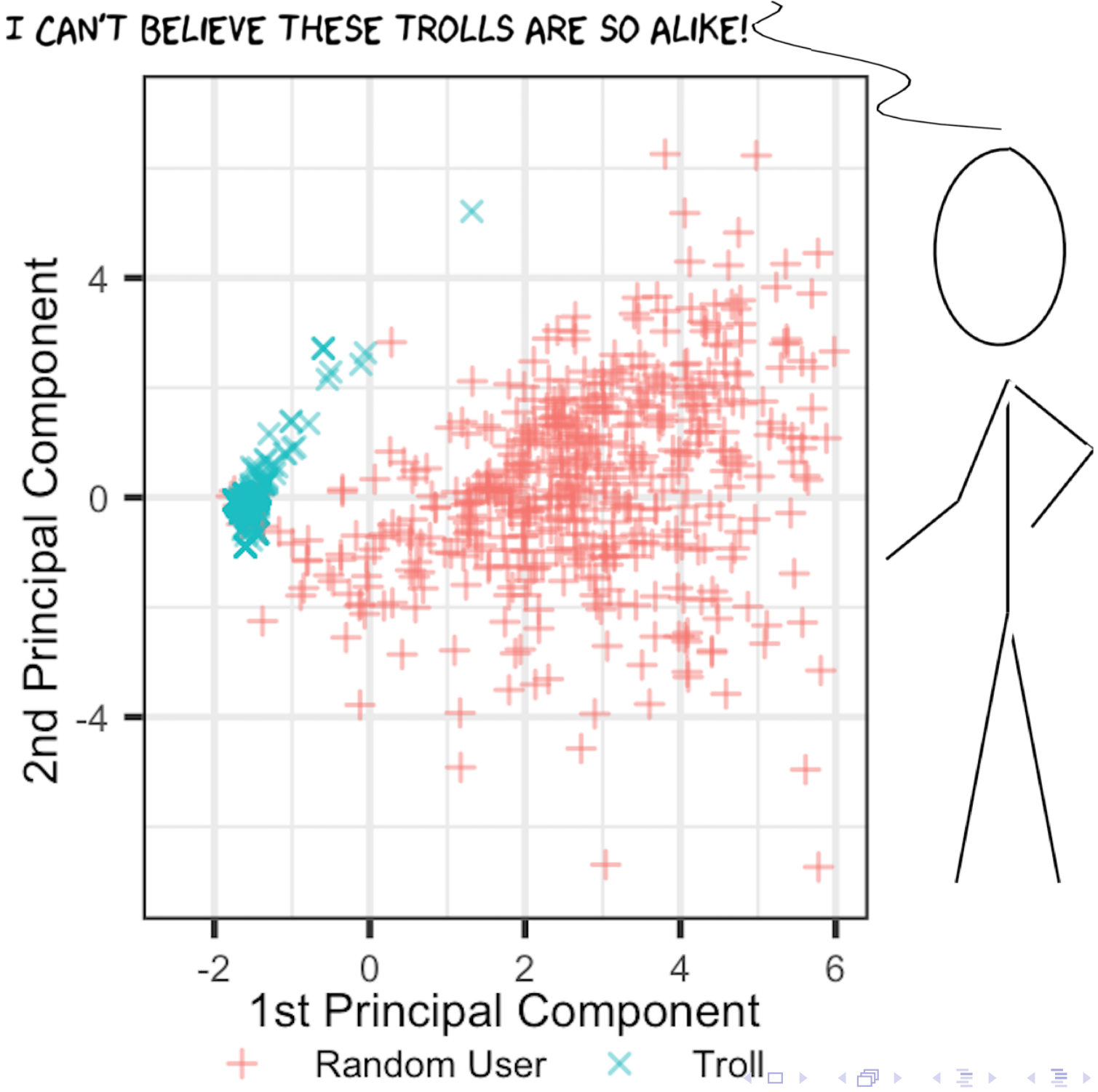
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Group 1	Group 3	Group 1	Group 3	Group 1	Group 3	Group 1
Group 2	Group 4	Group 2	Group 4	Group 2	Group 4	Group 2

Table: Potential working schedule of trolls' shifts

- *From data:* the trolls published approximately the same number of posts on each day and night of the week

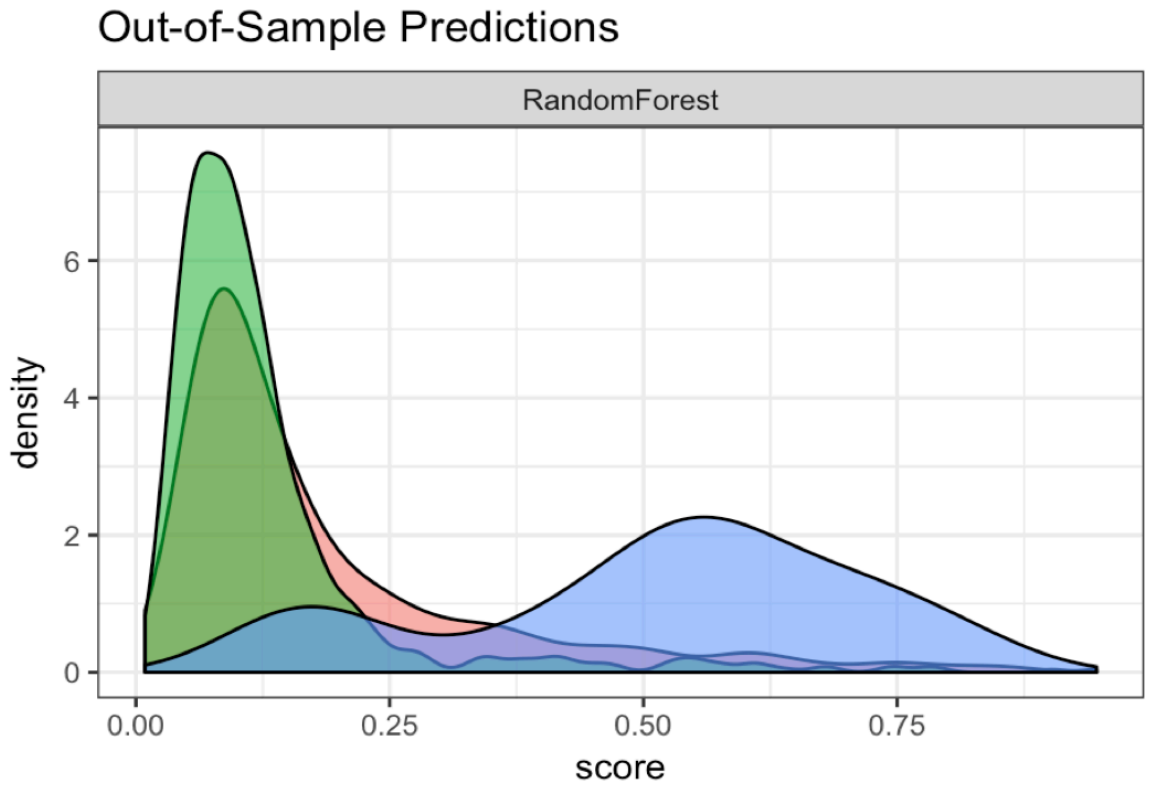
Threats to the validity of the results - 3: The incomplete list of trolls

- The overall number of troll accounts should be negligible in comparison to the overall *LJ* community
  - Random sample 900 Cyrillic *LJ* accounts
- Assume a randomly drawn account does not belong to a troll
- Collect data from these accounts (300k posts) from 2014-15 and bundle with the data on posts made by trolls (500k posts)
- Feature extraction: TF-IDF, LDA, user-level features
- Train classification models
- Sample 650 non-troll participants of online conversations
- Apply the trained model to calculate their propensity scores to be *de-facto* trolls


I CAN'T BELIEVE THESE TROLLS ARE SO ALIKE!
2nd Principal Component
4
0
-4
-2
0
2
4
6
1st Principal Component
Random User
Troll

Threats to the validity of the results - 3: The incomplete list of trolls

- Less than 3% percent of the participants of the targeted conversations have a propensity to be a troll higher that 50%,
- Less than .5% have a propensity that exceeds 60%.



Conclusions

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- "Fake agents"appear to be successful in diverting the discussions from critically charged topics if they discuss political affairs, but not the problems of national economy
- Evidence of no promotion effect of pro-government agenda

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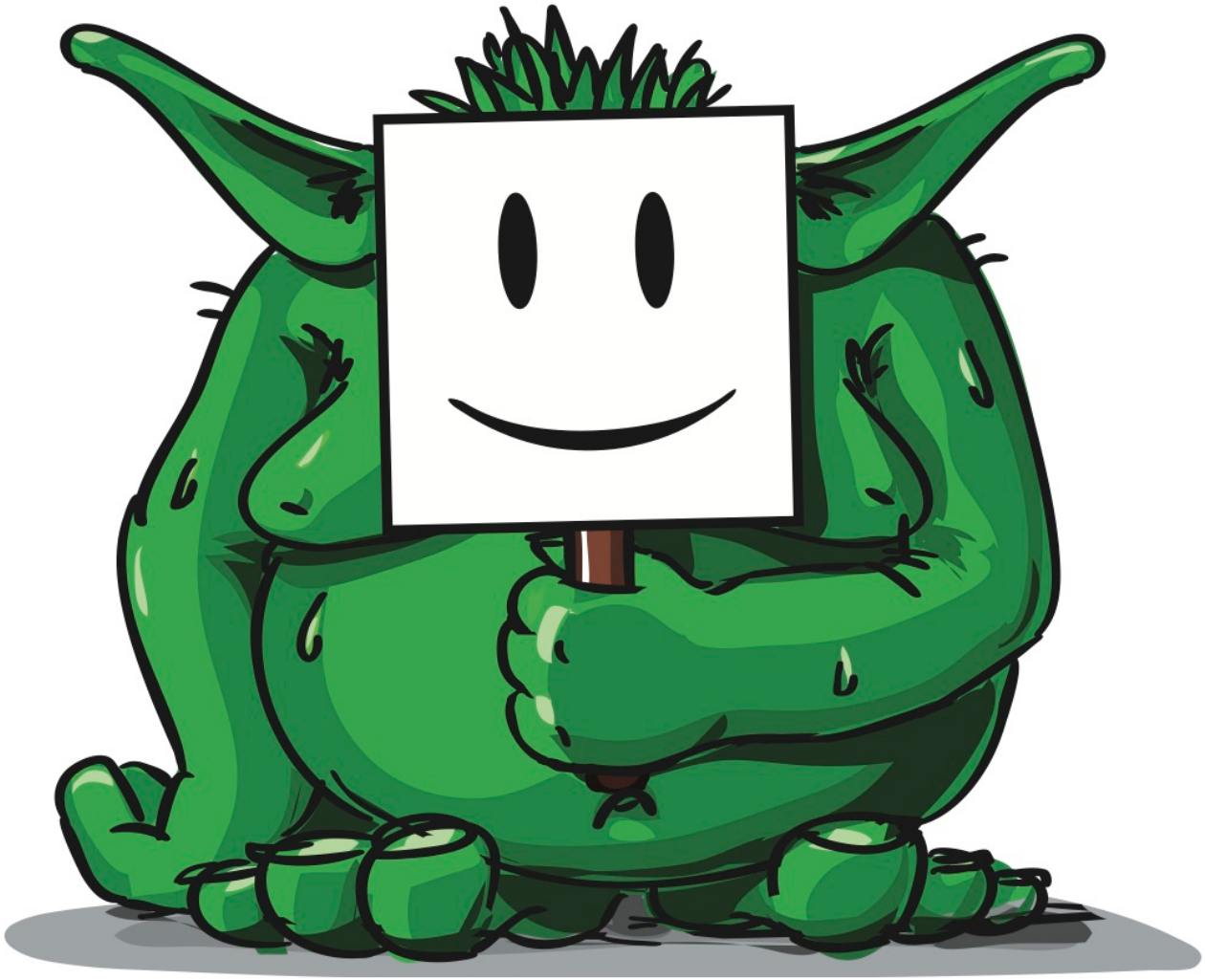
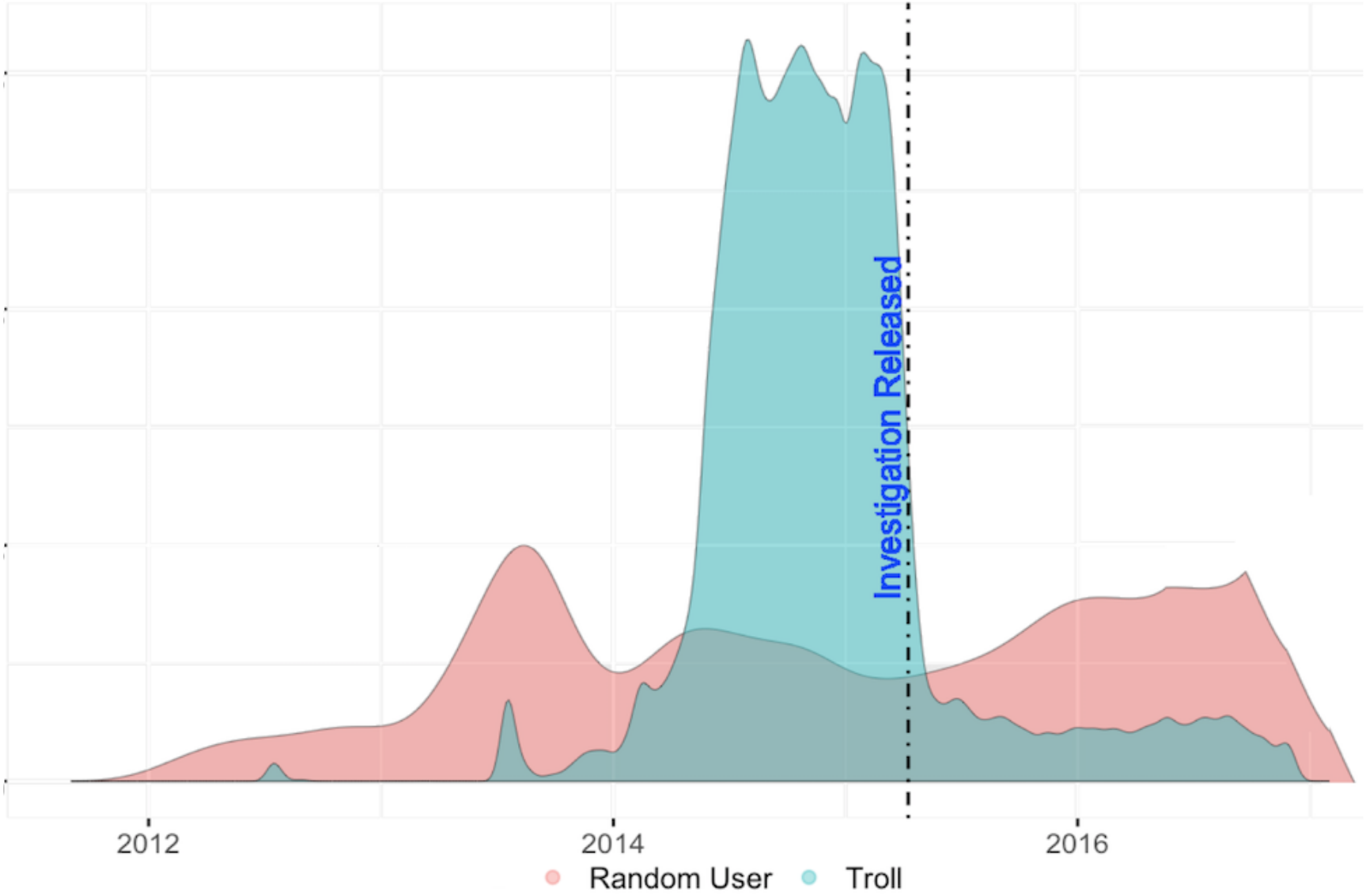
- Evidence of no promotion effect of pro-government agenda
- *Why trolls succeed in political, not economic conversations?*
  - Private information in discussions of economic issues
- The analysis is limited in scope:
  - it considers only two potential effects of trolls' interventions in online conversations
  - it does not consider effects of such interventions on a larger audience of social media users
  - does not provide the evidence that trolls can change the preferences or the offline political behavior of users

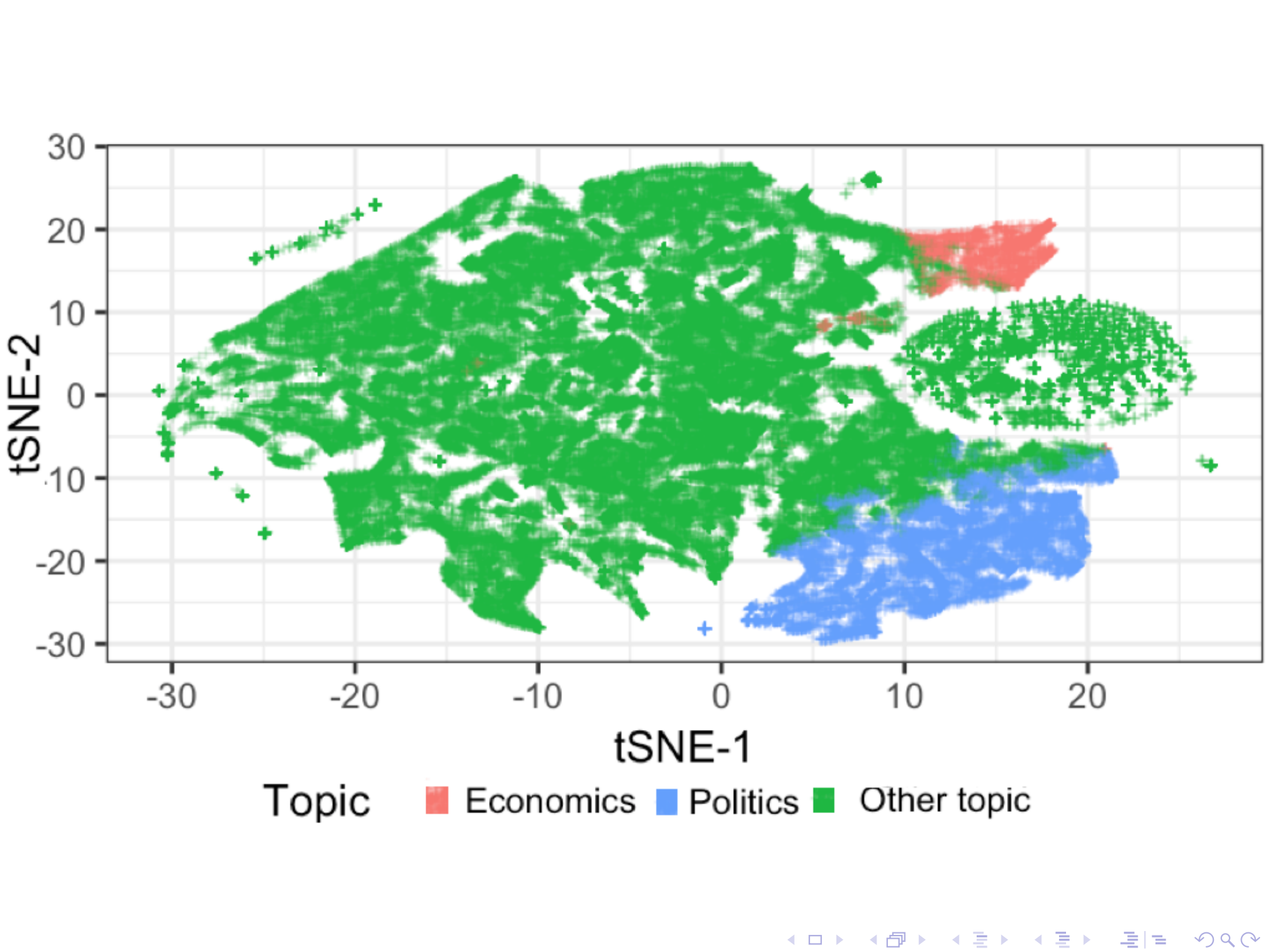
THANK YOU FOR YOUR PATIENCE!

WWW.ASOBOLEV.COM



Right on time!

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Topic
Economics
Politics
Other topic