

The Role of Information in the Logic of Power

Anton Sobolev 

Information in the Logic of Power

Research Agenda & Historical Context

■ What does explain power dynamics?

- Geography
- Institutions
- World Economy
- Prod. Technology

Diamond (1997)
Ross (2001)
Sachs (2003)

North (1995)
Acemoglu et al (2001)

Rogowski (1989)
Hiscox (2002)

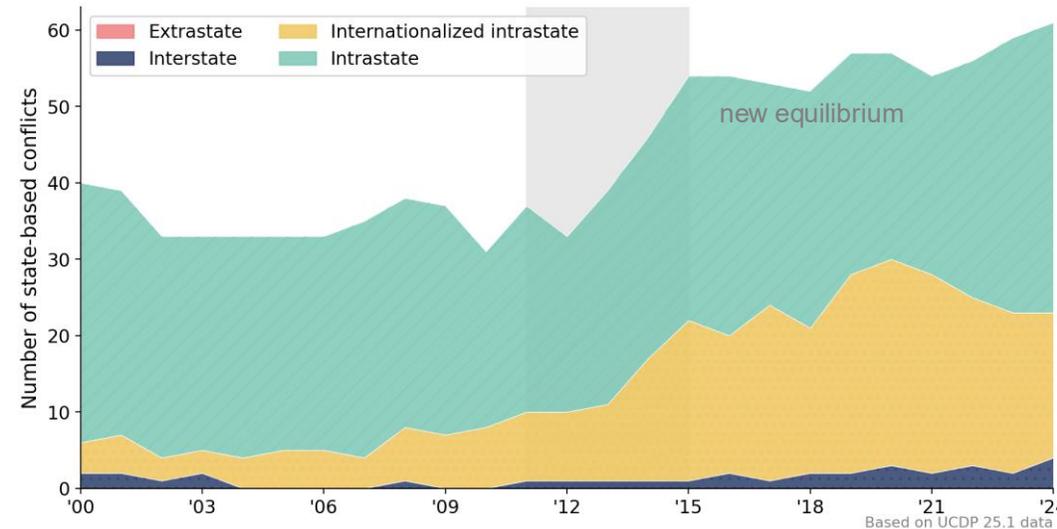
Rueschemeyer et al (1992)
Boix (2003)
Ben & Samuels (2014)

■ Yet we observe Starting 2010x

- Not a spike, but a transition to a new equilibrium
- Other things being equal?

conflict

State-based conflicts by type of conflict (2000-2024)



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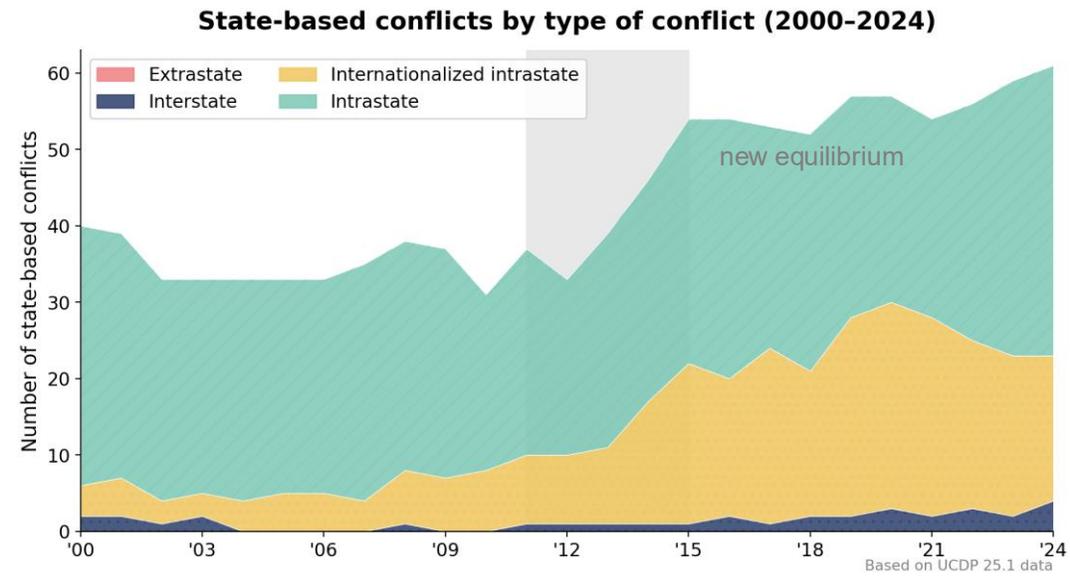
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 Sachs (2003) Ben & Samuels (2014)

■ Yet we observe Starting 2010x

- Not a spike, but a transition to a new equilibrium
- Other things being equal?

■ Emerging Field Information & Communication in Politics

- Independent Role of ICT [≠ Propaganda]   
- Global Re-emergence (and Re-invention) of Censorship
- New types of Political
 - Actors: Platforms, Pirate Parties, Influencers
 - Policy
 - Agents: Bots (and Viruses), Trolls, Scams, APT groups



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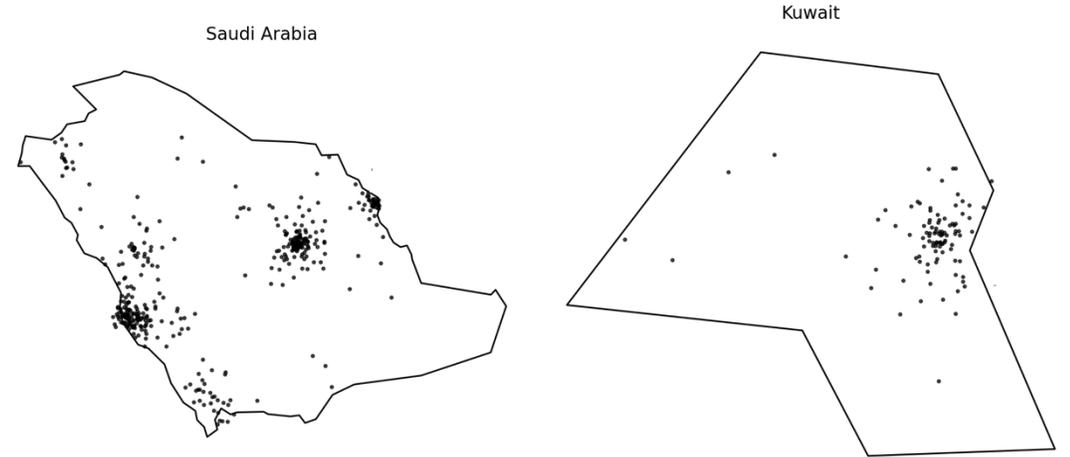
■ Starting Point

□ Geography

Diamond (1997)
Ross (2001)
Sachs (2003)

Campante & Do (2009),
Campante (2012),
Campante & Do (2014)

■ Case of Mass Actions 2011-12, Russia, Regions



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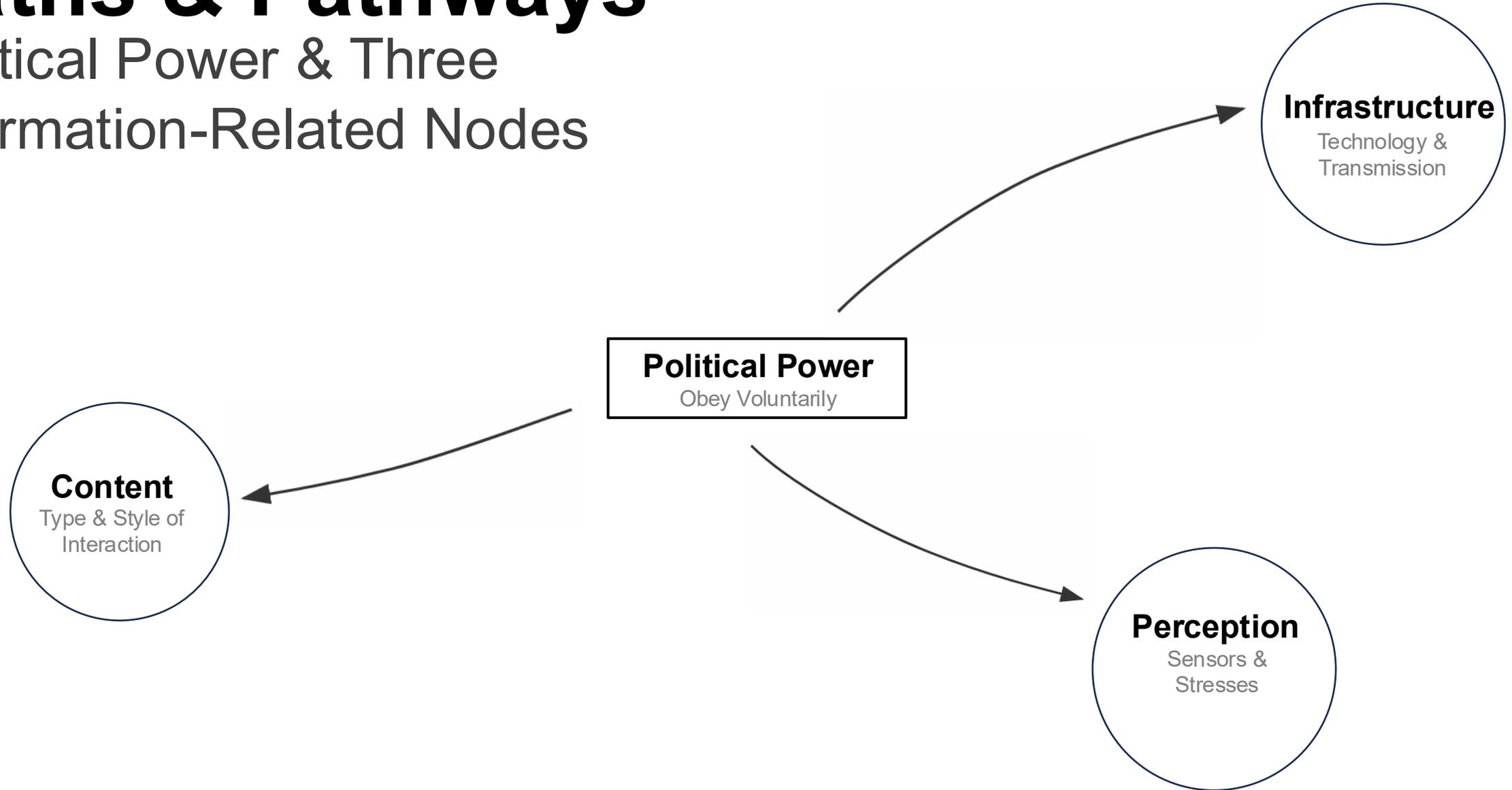
■ Case of Mass Actions 2011-12, Russia, Regions, Sobolev (2014)

- Expectations:
 - Contentious Dynamics is determined by geographic factors
 - Population Allocation
 - Climate
 - Rough Terrain
- Compare with:
 - Economic Growth
 - Unemployment
 - *per capita* Growth
- Findings:
 - ✓ Comparable Effects with Economic Factors
 - ✓ ICT indicators (networks, computers, cellphones, information accessibility, internet traffic) **mattered even more!**



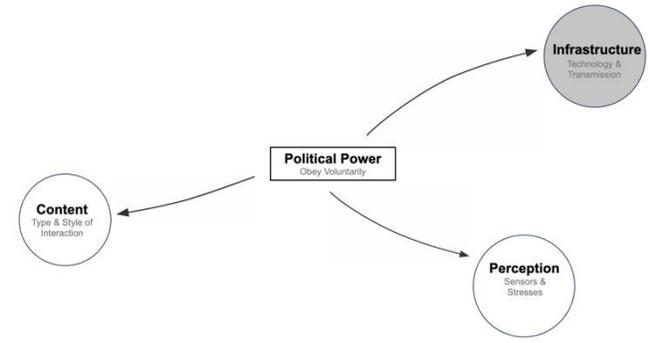
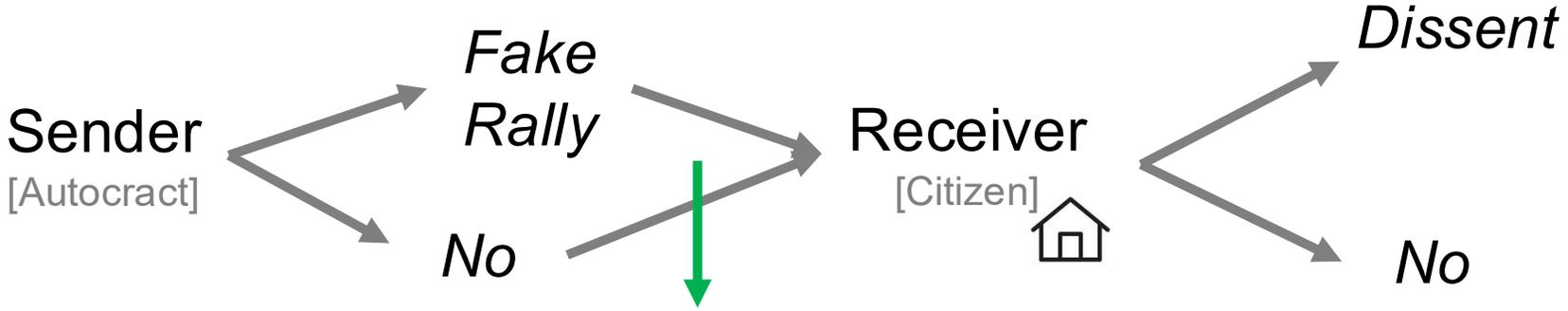
Paths & Pathways

Political Power & Three
Information-Related Nodes



Information Infrastructure

Echo of Freedom: How Independent Media Contain Dissent

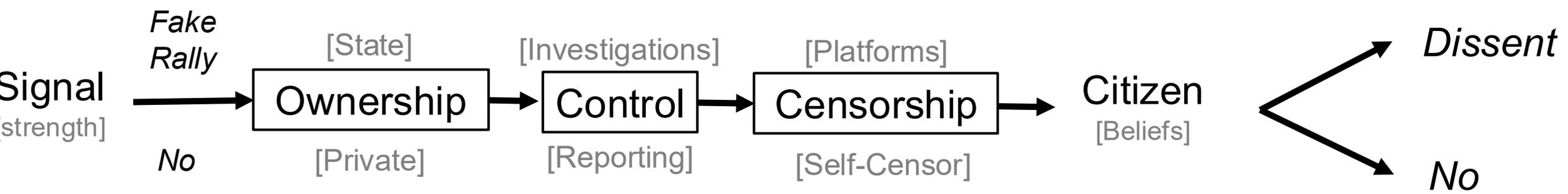
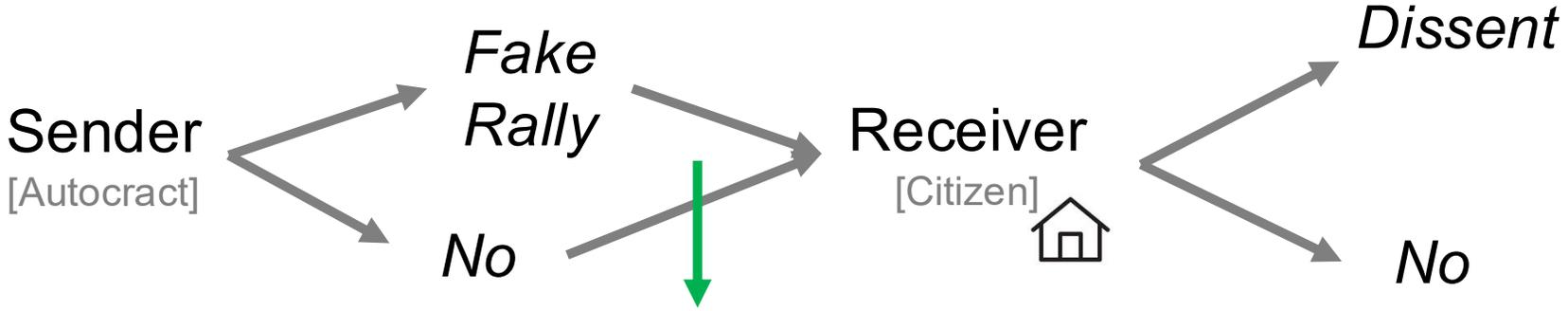
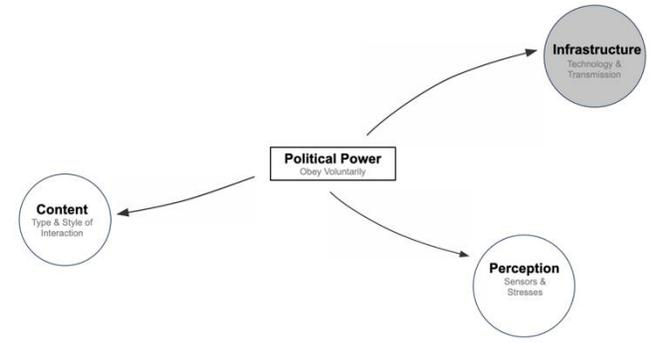


More Nuances

Wintrobe (1998), Egorov, Guriev, Sonin (2009), Edmond (2008, 2013), Kricheli, Livne & Magaloni (2011), Ho (2020), King, Pan, Roberts (2013, 2016), Roberts (2018), Xu (2022)

Information Infrastructure

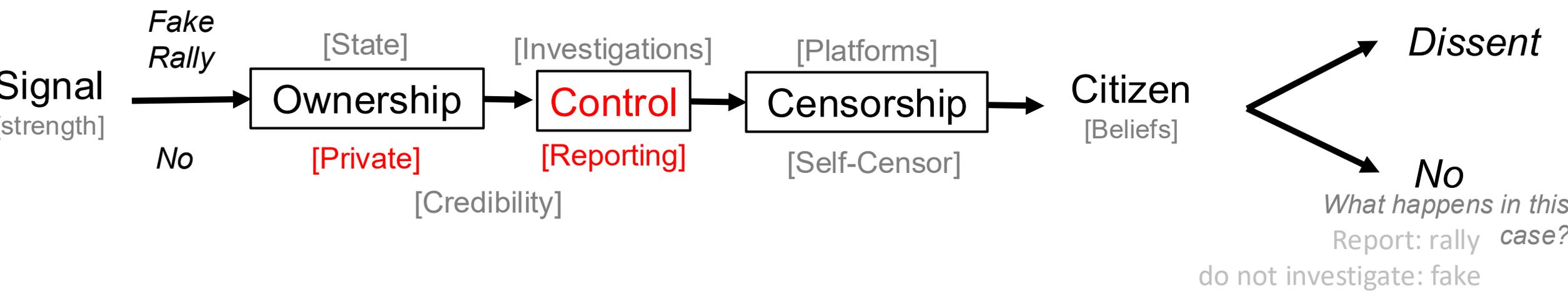
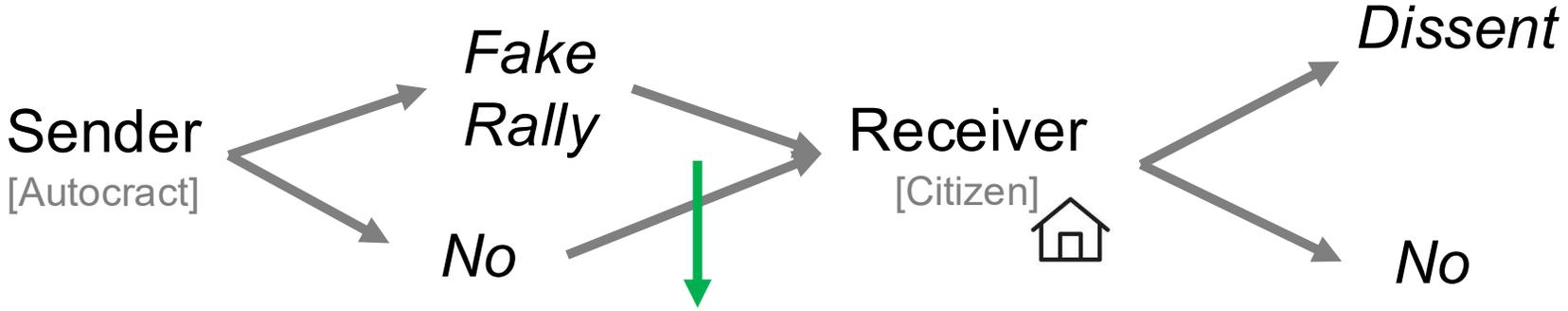
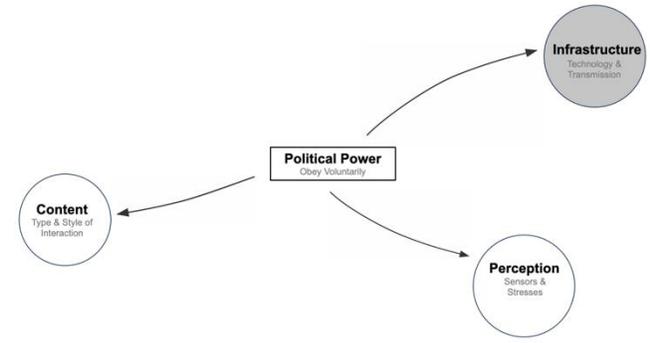
Echo of Freedom: How Independent Media Contain Dissent



Wintrobe (1998), Egorov, Guriev, Sonin (2009), Edmond (2008, 2013), Kricheli, Livne & Magaloni (2011), Ho (2020), King, Pan, Roberts (2013, 2016), Roberts (2018), Xu (2022)

Information Infrastructure

Echo of Freedom: How Independent Media Contain Dissent



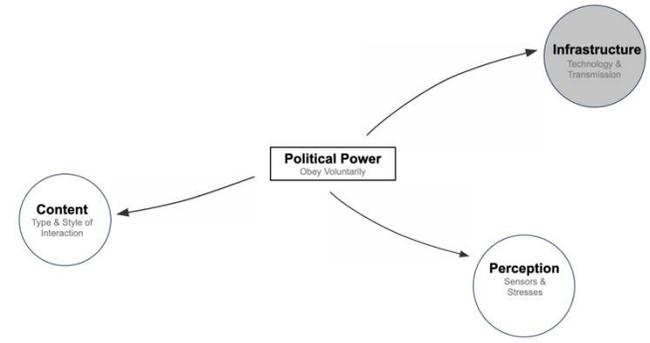
Students: What is the challenge with mf?

Wintrobe (1998), Egorov, Guriev, Sonin (2009), Edmond (2008, 2013), Kricheli, Livne & Magaloni (2011), Ho (2020), King, Pan, Roberts (2013, 2016), Roberts (2018), Xu (2022)

Information Infrastructure

Echo of Freedom: How Independent Media Contain Dissent

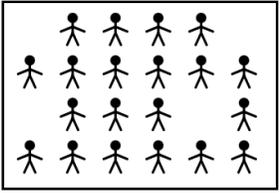
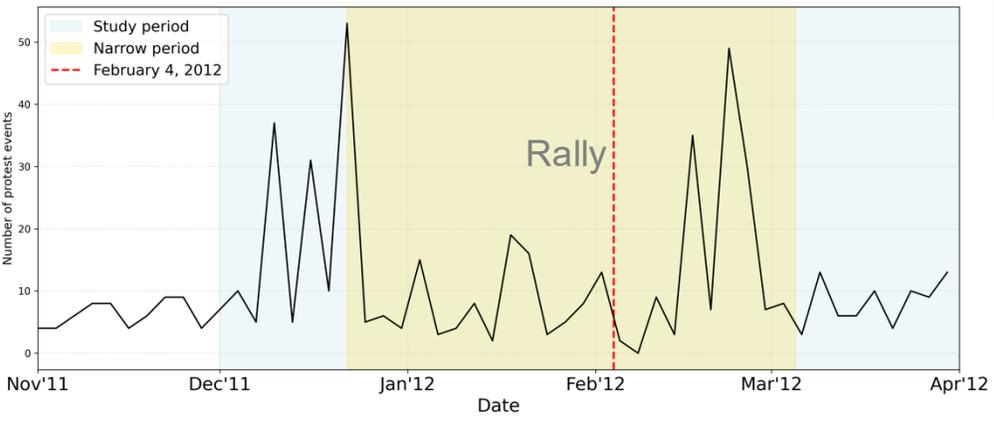
- **Unique setting:** Political Media with Economic Model
- Local franchises of radio station “Echo of Moscow”
- “Can you hear this radio?”



■ **Outcomes:** mass anti-government actions 2011-12, Russia, Cities

■ **Treatment:** pro-government rallies

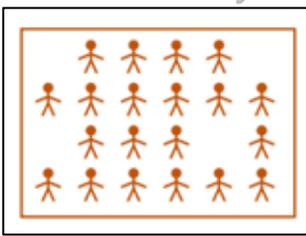
□ A local pro-government rally? (Feb 4, '12) \rightsquigarrow Mass Actions $\uparrow \downarrow$



Citizen \rightarrow Signal



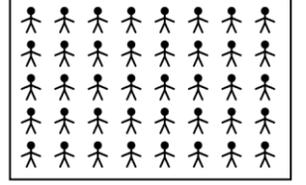
With radio
No



Fake Rally

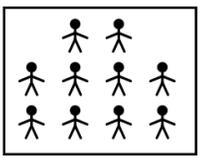
Citizen

Fake Rally



Up

Down



$$DiD: Y = \alpha + \beta_1 rally_{gov}^{pro} + \beta_2 rally_{cow}^{mos} + \beta_3 rally_{cow}^{mos} rally_{gov}^{pro}$$

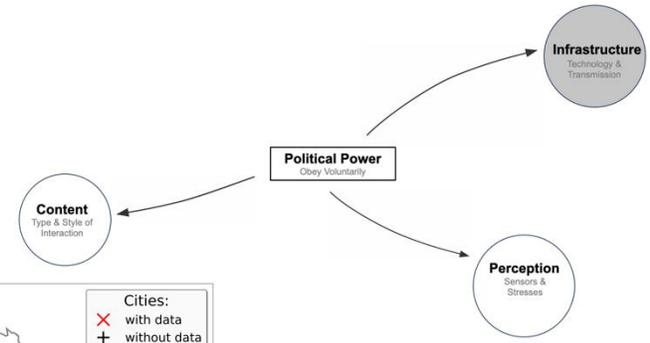
Information Infrastructure

Echo of Freedom: How Independent Media Contain Dissent

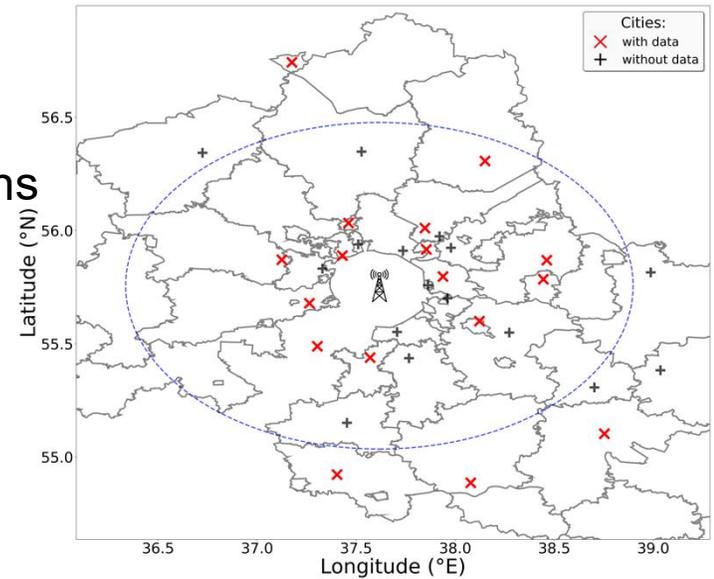
■ Unique setting: Political Media with Economic Model

■ Two types of locations with radio signal

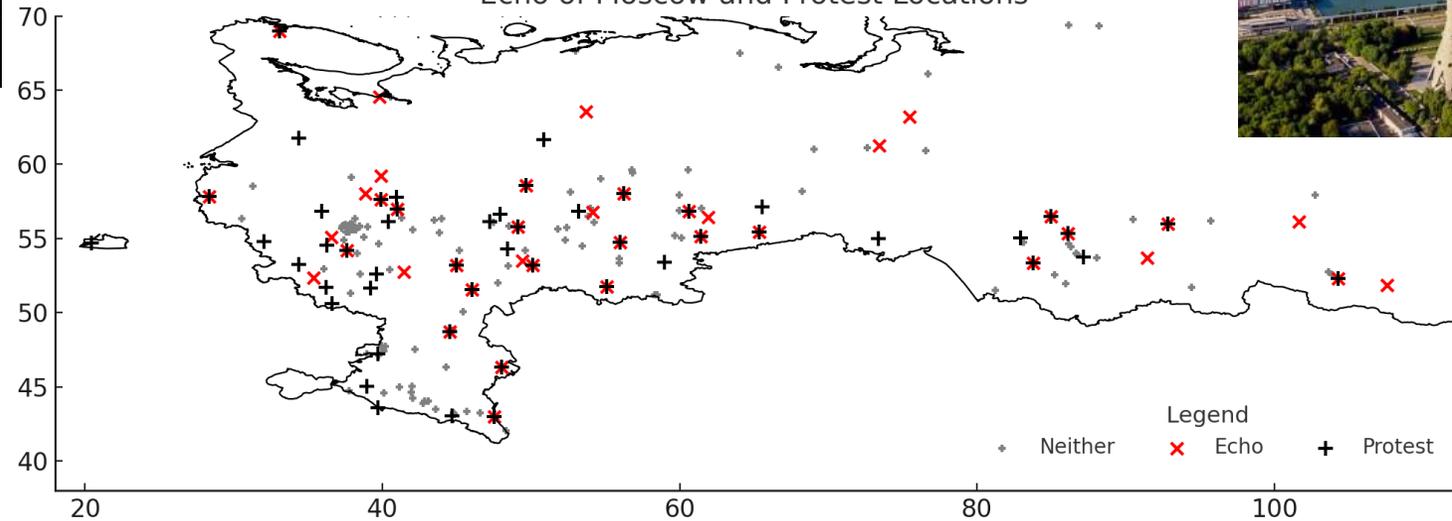
Ads on an independent radio station



■ 273 cities / 72 stations

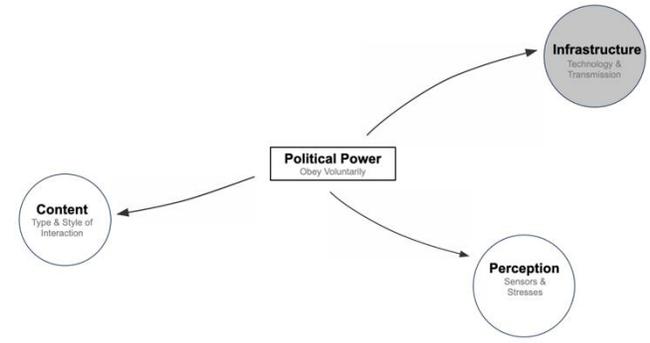


Echo of Moscow and Protest Locations



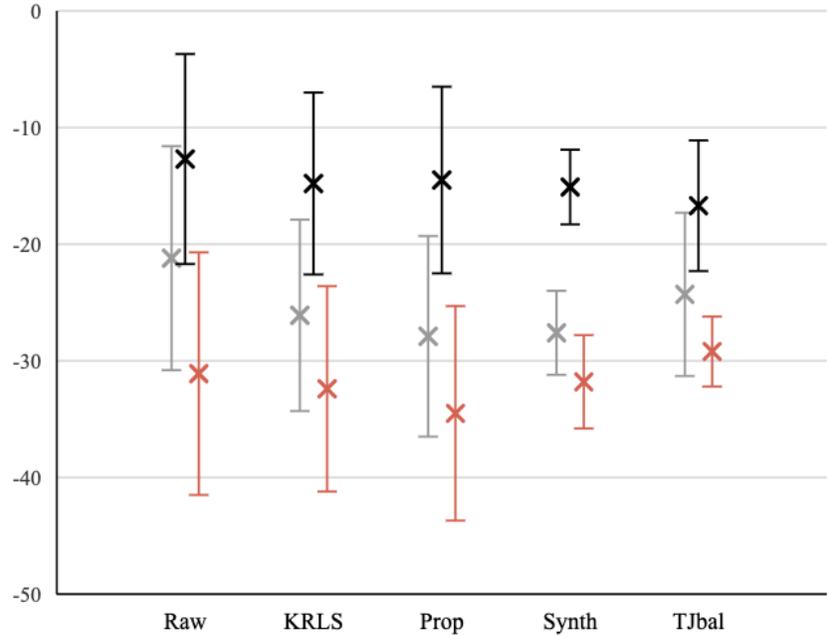
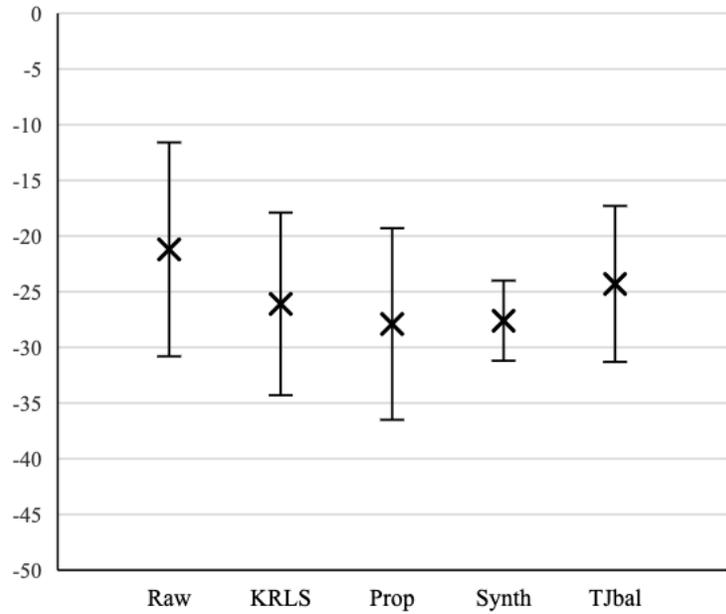
Information Infrastructure

Echo of Freedom: How Independent Media Contain Dissent



Effect of a pro-government rally

Conditional on the exposure to the radio signal



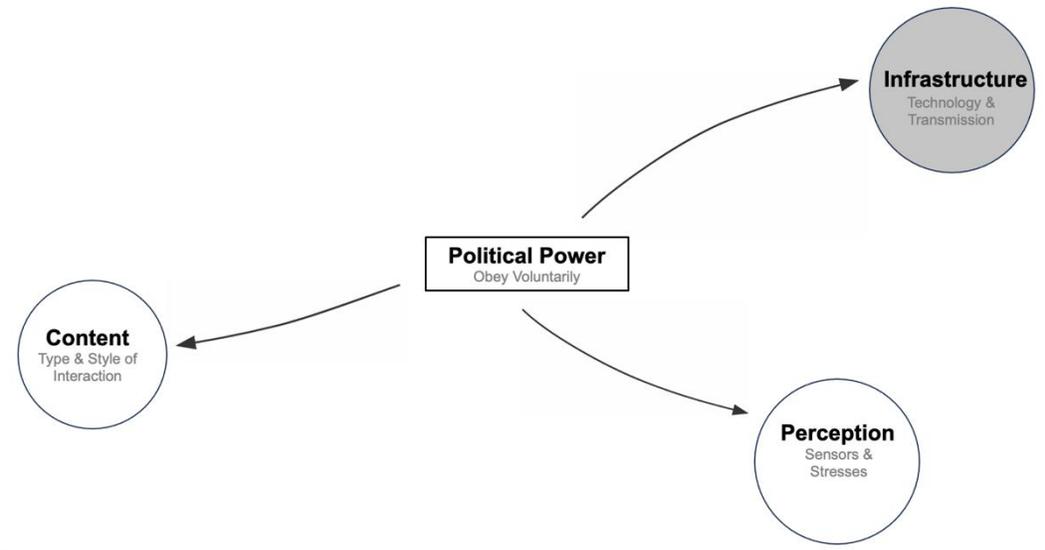
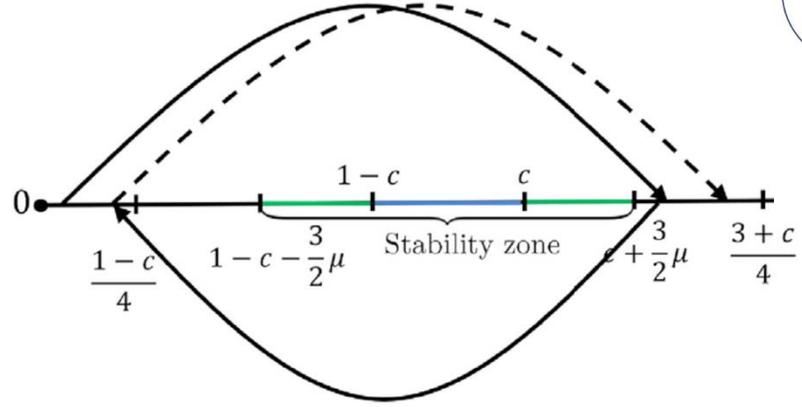
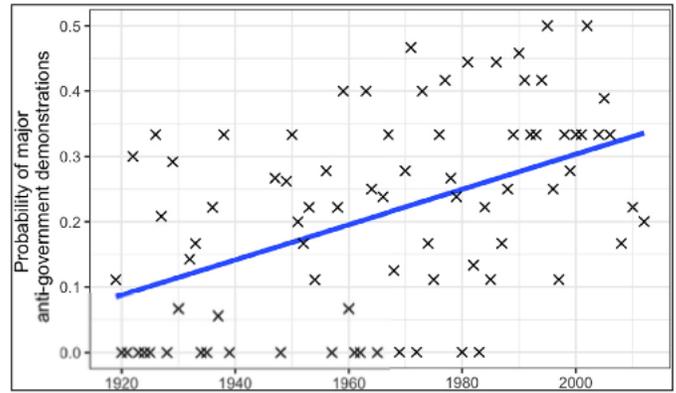
- Propensity Score Matching
- Kernel Balancing
- Synthetic Control
- Trajectory Balancing

✕ Protest turnout
 ✕ Cities with Echo
 ✕ Cities without Echo

Paths & Pathways

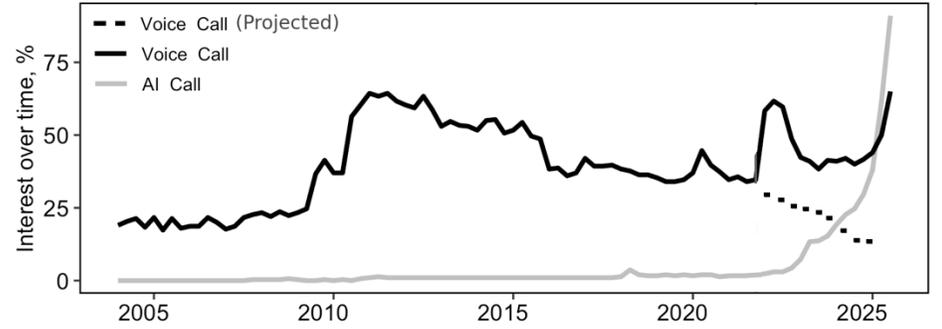
Information Infrastructure

Information Availability via ICT & Newly Established Governments (EJPE, 2019)



The Last Call for Authenticity: AI Voice Scams (JCP, 2025)

- Underestimated growing threat of voice synthesis
- Combo of qualitative and quantitative evidence for:



The increasing asymmetry between the low cost of launching voice-based attacks and the high cost of preventing them undermines trust in voice as a credible communication channel.

- Human voice no longer functions as a reliable medium of authentication
- One of general interfaces mainly used by AI agents

1 Trolls as a Cyber Weapon

Flexibility & Customization

Levels

- └ **Macro:** Manipulate platform algorithms
- └ **Micro:** Threaten users

Targets

- └ Content-makers, commentators, readers
- └ Politicians, activists, dissidents, supporters

Easy to Switch Tactics

- └ Flooding, Threats, Distraction, Persuasion
- └ Mix & Match

Masked Engagement

- └ Hide Troll Identity
- └ Mimic Regular Users

2 Evidence \rightsquigarrow Theory \rightsquigarrow Policy ?



Data

❑ Troll Factory Data Leak

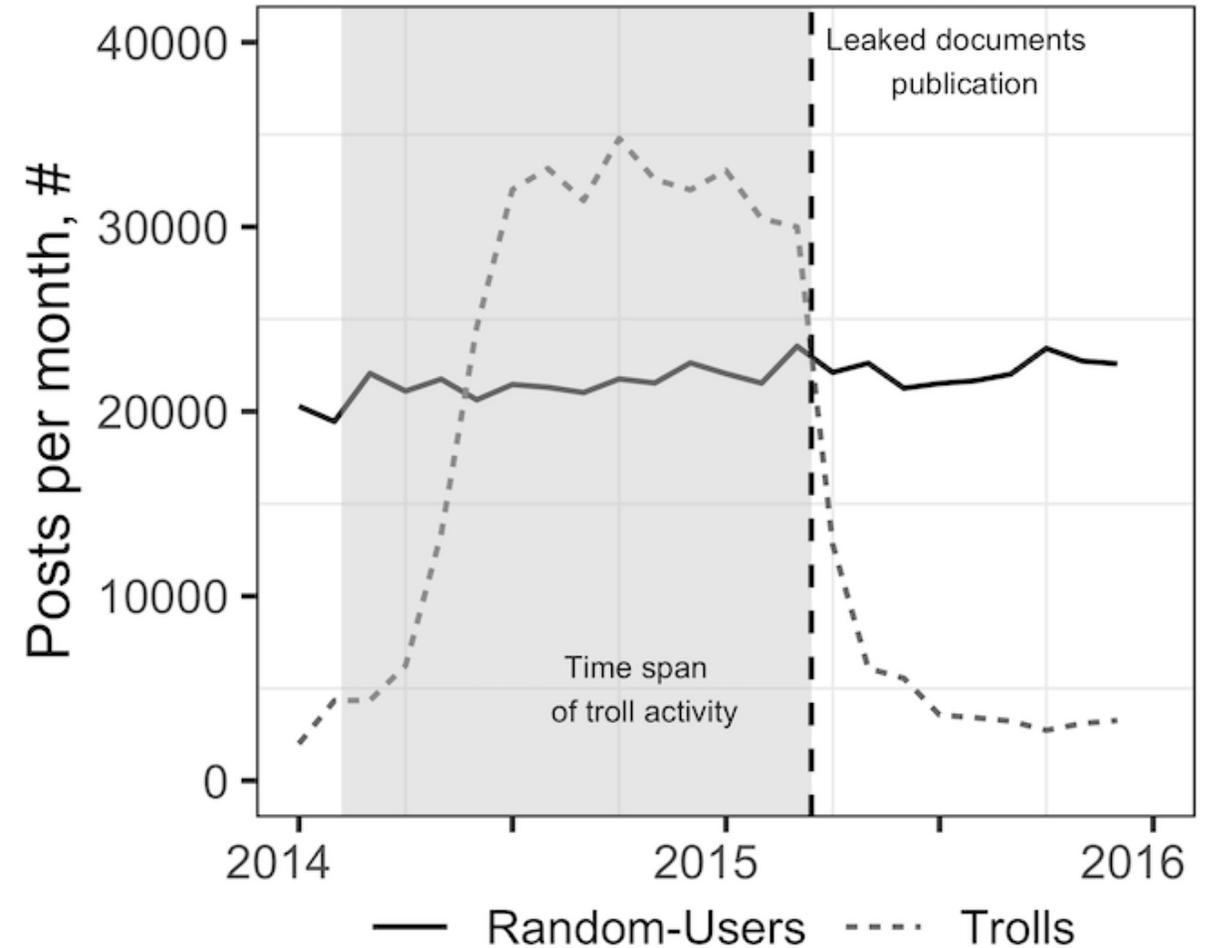
- 700 Leaked Accounts on *LJ*
- 2014-15
- 130k troll-infiltrated discussions

❑ Random *LJ* Users

- 4M Random Posts & Discussions

❑ Trolls' Target

- Russia's Domestic Audience





Activist A



LIVEJOURNAL

Putin annexed Crimea: What should we do?

Apr 10, 2014 21:01

Russian President annexed Crimea out of a long-standing desire to resuscitate the Soviet empire, and he may eventually go after the rest of Ukraine, as well as other countries in eastern Europe ([Read more...](#))

[#Putin](#) [#Politics](#)

[LEAVE A COMMENT](#)

Comments 142

kinofriend 20:49:23 UTC

His ambitions are too dangerous for Russia. What is next, **war**?

nep-glad 21:01:24 UTC

Agree. He'll get Russia into the new **war**

daslight 21:16:15 UTC

Probably he needs a **war** to distract the population

deputat 22:29:10 UTC

Looks like he sends **military** weapons to East Ukraine

ilyapetrov 22:30:10 UTC

You all are traitors!

ilyapetrov 22:31:11 UTC

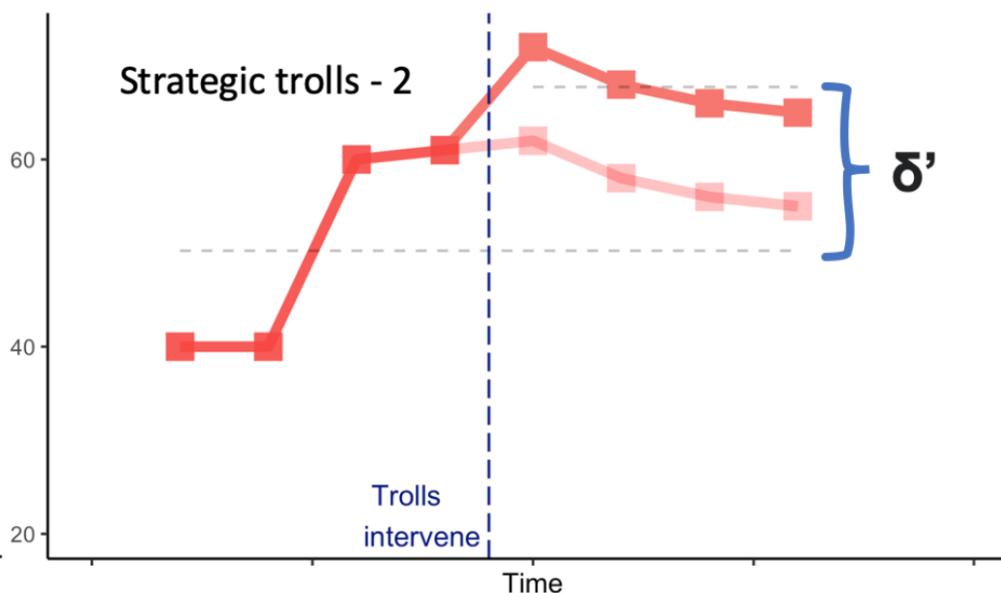
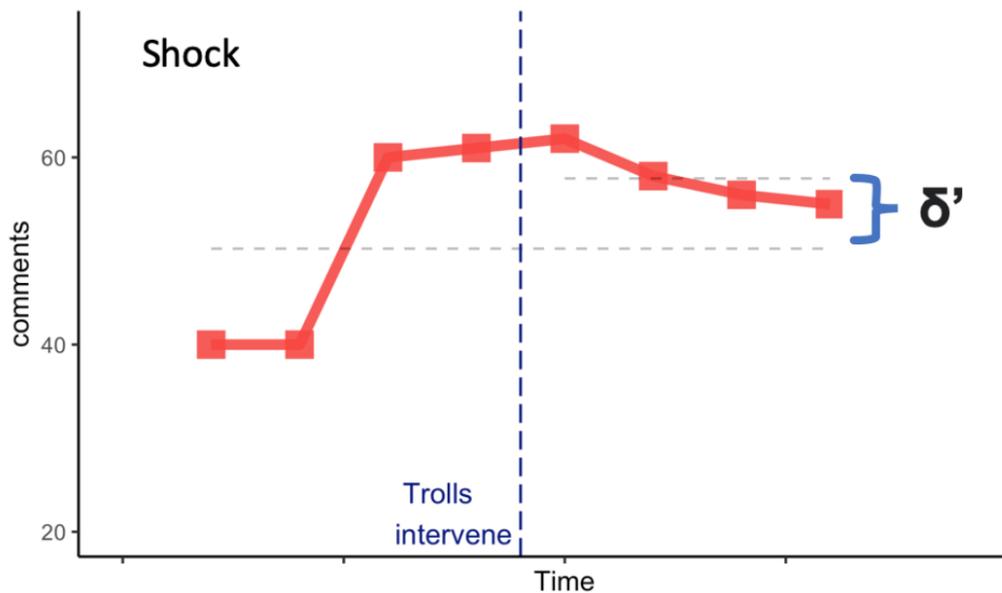
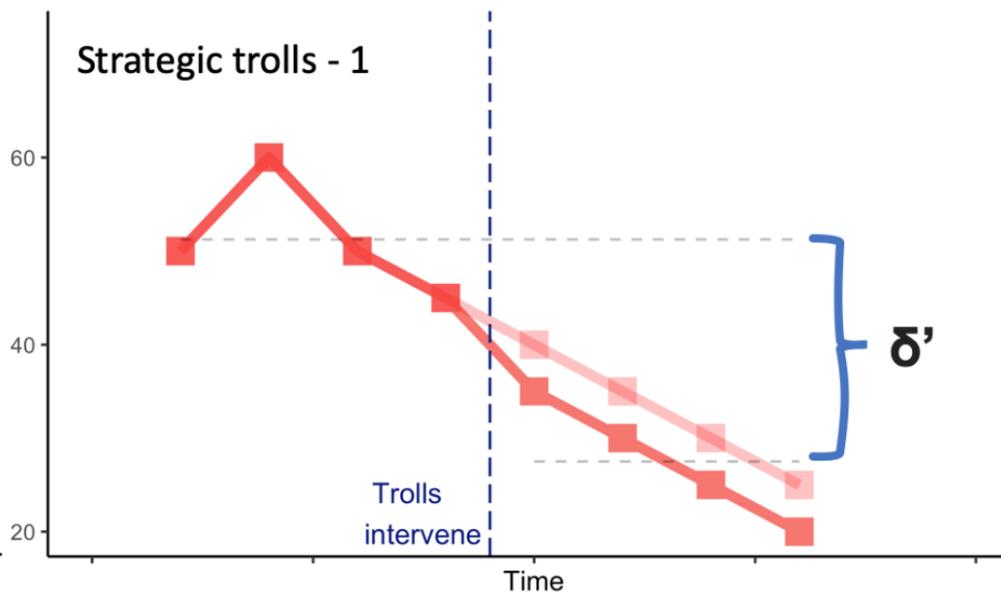
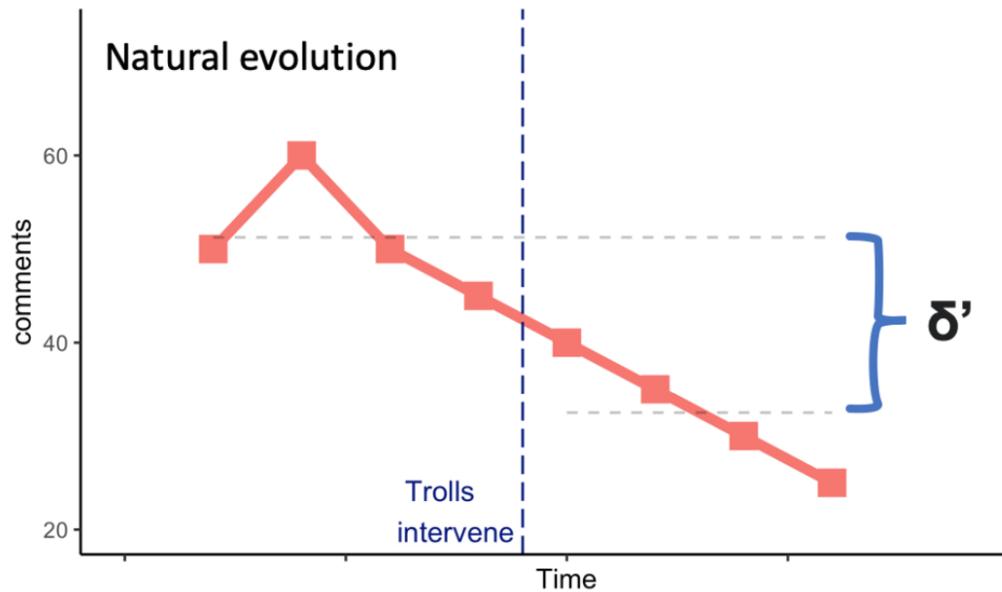
Only Putin can save Russia

yehu 22:32:10 UTC

Probably he wants a civil **war** in East Ukraine

Discussion ends here

Causal Inference Challenge



Empirical Strategy

Observational Setting

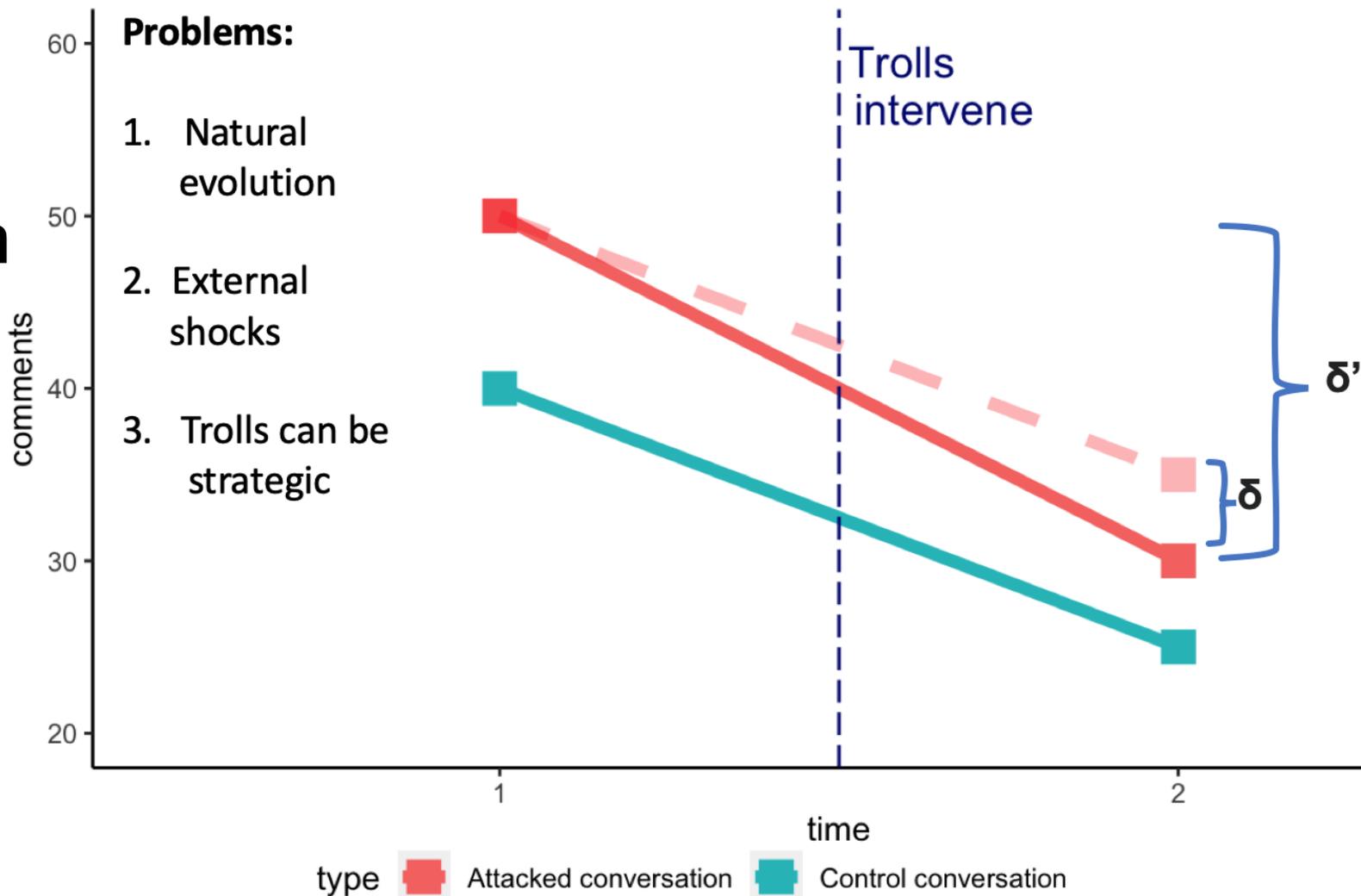
- DiD
- Matching

Control Conversation

- Discuss the same topic
- High chance of attack
- Time overlap

How?

- Approximate DGP
- Simplicity of LJ Platform



nemtsov murder ✕ 🔍

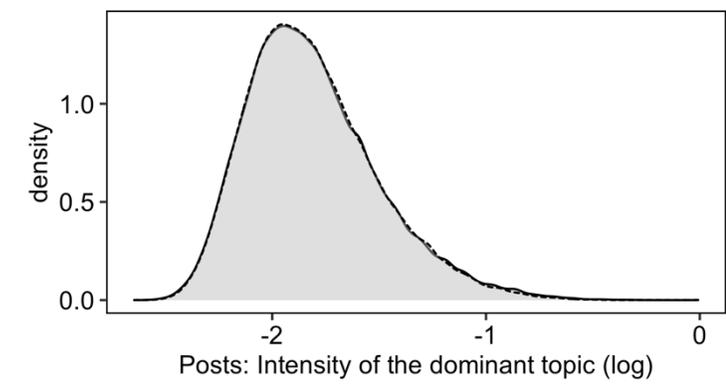
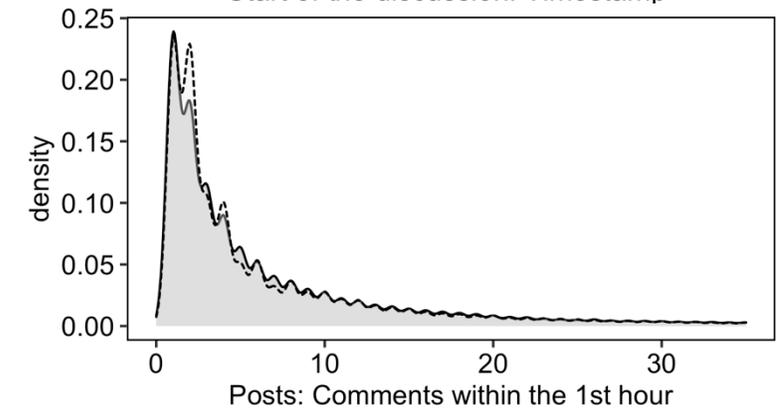
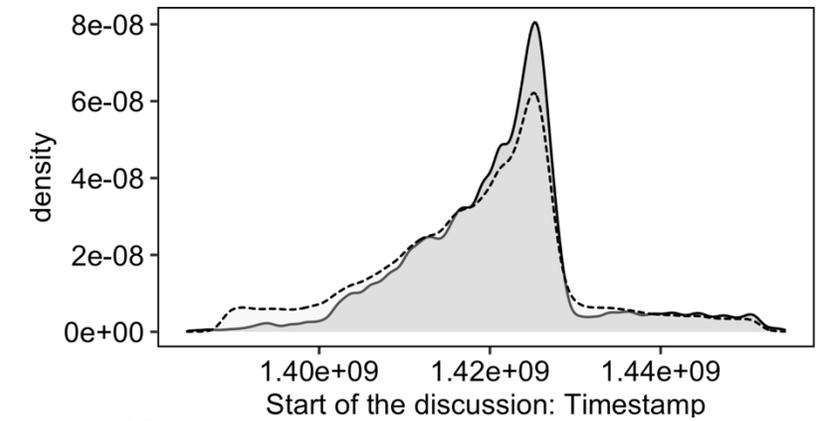
About 143 results (0.15 seconds) Sort by: **Relevance** ▾

On Murder of Boris Nemtsov: saradzhyan — LiveJournal
<https://saradzhyan.livejournal.com/50721.html>
 Feb 27, 2015 ... Any murder is a crime and a tragedy, but if it turns out that Boris Nemtsov has been killed for his political views, then it is also a very serious ... **Attacked**

The fear/hatred that kills: talk_politics — LiveJournal
https://talk_politics.livejournal.com/1960499.html
 Feb 27, 2015.. If you're an opposition politician whose open agenda is to remove Putin from power, after Nemtsov's murder you should be extremely careful, ... **Control**

Putinumer?: psychohist — LiveJournal
<https://psychohist.livejournal.com/76845.html>
 Feb 27, 2015 ... If the hardliners had murdered Nemtsov and Putin in preparation for a ... Putin being assassinated in retaliation for the Nemtsov murder would ...

Balance



group Attacked posts Control posts

Outcomes of Interest

□ Structural Outcomes

- Intensity: Comments & Threads
- Engagement: Users & Replies

□ Content Outcomes

- Sensitive Topics
Political Opposition, Economy in Crisis, War in Ukraine
- Agenda Promotion
NATO Aggression
Putin's Foreign Policy Success

Initial post			Matched control post		
User 1	1:12	Comment 1	User A	1:01	Comment 1
User 2	1:14	+ Comment 2	User B	1:19	+ Comment 2
User 1	1:18	Comment 3	User A	1:21	Comment 3
User 3	1:19	Comment 4	User C	1:30	Comment 4
<i>Troll 1</i>	1:25	Comment 5	User A	1:32	+ Comment 5
User 2	1:30	Comment 6	User B	1:42	Comment 6
<i>Troll 2</i>	1:37	Comment 7	User C	1:55	+ Comment 7
User 1	1:39	Comment 8			
User 3	1:41	+ Comment 9			
User 2	1:43	++ Comment 10			
User 4	1:45	++++ Comment 11			

$$Y_{it} = \alpha + \beta \text{Attacked}_i + \gamma \text{Period}_t + \delta \text{Attacked}_i \text{Period}_t + \epsilon_{it}$$

Results–1: Structural Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Comments		Unique users		Replies		Threads	
Attacked discussions×Time	-26.01***	-21.89***	-6.57***	-4.95***	-20.15***	-17.64***	-12.90***	-11.73***
	(0.61)	(2.19)	(0.15)	(0.70)	(0.42)	(1.58)	(0.37)	(1.10)
Time: Post-Treatment	-5.71***	-10.72***	-3.95***	-5.85***	-0.67**	-3.77***	-0.29	-1.83***
	(0.44)	(1.50)	(0.11)	(0.47)	(0.30)	(0.98)	(0.27)	(0.64)
Attacked discussions	-2.53***	-5.262***	-4.32***	-4.37***	2.50***	-1.17	4.51***	-0.13
	(0.411)	(1.47)	(0.10)	(0.54)	(0.28)	(1.00)	(0.25)	(0.75)
Constant	39.57***		17.45***		21.91***		10.68***	
	(0.29)		(0.07)		(0.20)		(0.18)	
Author Fixed Effects		✓		✓		✓		✓
Clustered Standard Errors		✓		✓		✓		✓
Observations	510,935	510,935	510,395	510,935	510,395	510,935	510,395	510,935
R^2	0.02	0.15	0.04	0.28	0.01	0.14	0.01	0.08

Note: In models (2), (4), (6), (8) standard errors are clustered by authors of the initial posts. ***p < .01, **p < .05, *p < .1.

Results–2: Content Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Politically sensitive topics						Pro-government topics			
	Ukraine		History		Opposition		National economy		Putin's politics	
<i>Attacked discussions</i> × Time	-0.12*** (0.01)	-0.11*** (0.01)	-0.21*** (0.00)	-0.18*** (0.01)	-0.10*** (0.00)	-0.09*** (0.01)	-0.10*** (0.00)	-0.09*** (0.01)	0.02*** (0.00)	0.01 (0.01)
Time: Post-Treatment	-0.01** (0.00)	-0.02*** (0.00)	-0.06*** (0.00)	-0.09** (0.01)	-0.03*** (0.00)	-0.04*** (0.01)	-0.01** (0.00)	-0.02*** (0.00)	0.04*** (0.00)	0.05*** (0.01)
Attacked discussions	0.08*** (0.00)	0.09*** (0.01)	0.12*** (0.00)	0.2*** (0.01)	0.01* (0.00)	-0.03** (0.01)	0.07*** (0.00)	0.05* (0.02)	-0.02*** (0.00)	0.00 (0.01)
Constant	-3.62*** (0.00)		-2.72*** (0.00)		-3.01*** (0.00)		-3.347*** (0.00)		-3.40*** (0.00)	
Author Fixed Effects		✓		✓		✓		✓		✓
Clustered Standard Errors		✓		✓		✓		✓		✓
Observations	510,935	510,935	510,395	510,935	510,395	510,935	510,395	510,935	510,935	510,935
R^2	0.02	0.15	0.04	0.28	0.01	0.14	0.01	0.08	0.01	0.06

Note: In models (2),(4),(6),(8),(10) standard errors are clustered by authors of the initial posts. ***p < .01, **p < .05, *p < .1.

Cases with largest effects when trolls refer to their personal experiences

Paths & Pathways

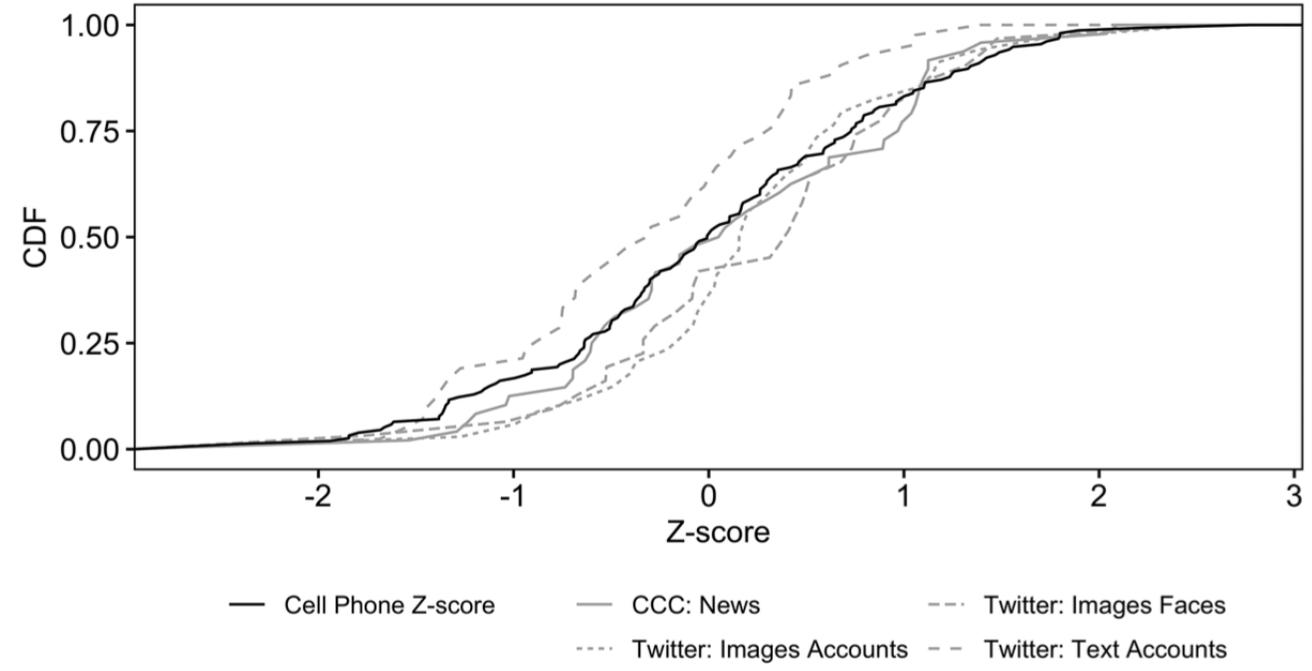
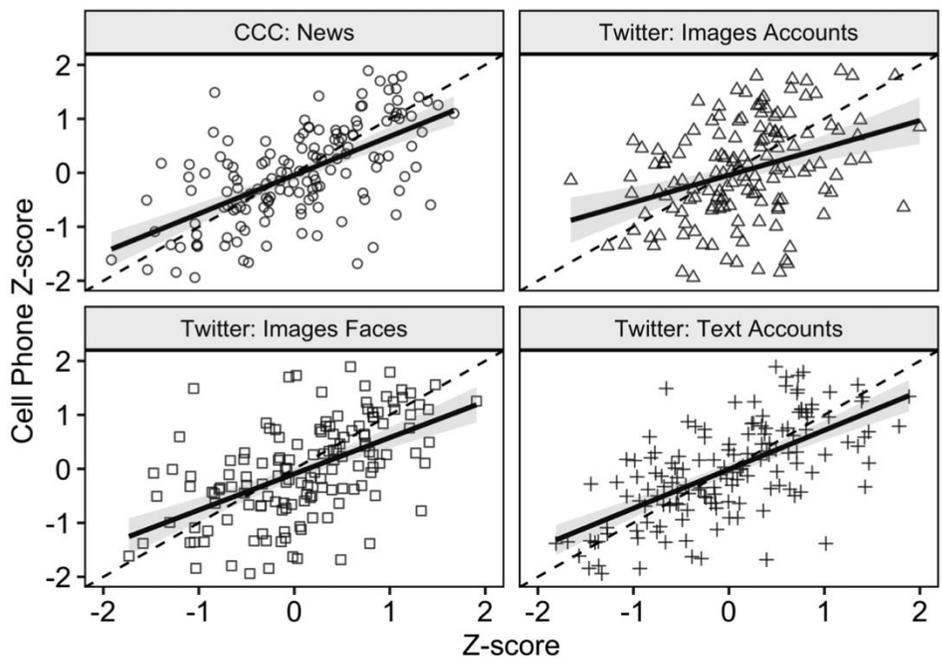
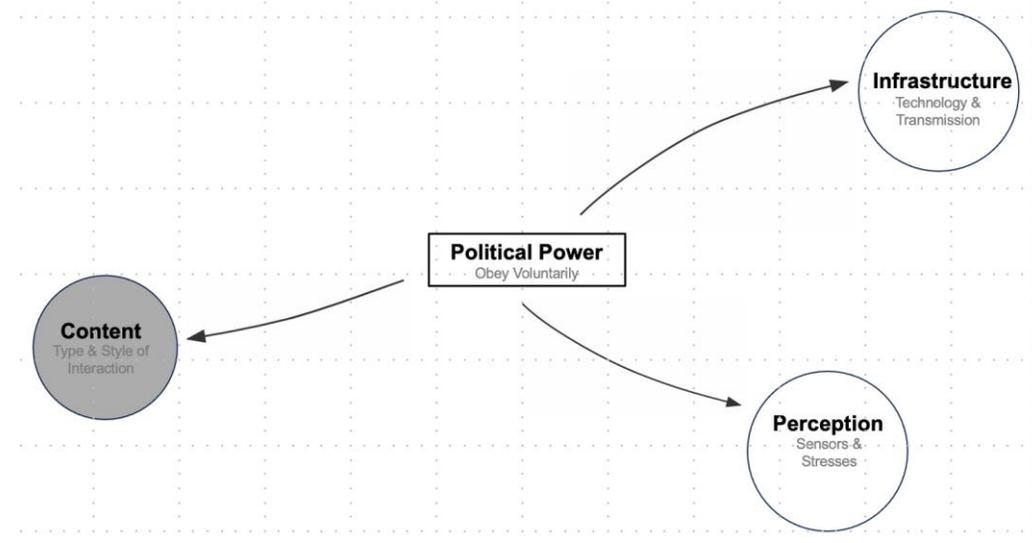
Content Generation

How Reliable is Protest Data in Solving Collective Problem? (APSR, 2020)

Information Cascades Lohmann, 1994, Kuran, 1995, Chwe. 2001

US Women's Marches 2017

protest size variation from news and social media is trustworthy when validated against location data



Paths & Pathways

Perception of Information

■ Stress as a political factor

■ Trial By Fire: WP (2014)
Stress Amplifies Electoral Gratitude for the Authorities

■ Stress & Political Order in Afghanistan PLoS Mental Health (2025)
Gender, Stress, & Political Order in Afghanistan Societies (2025)

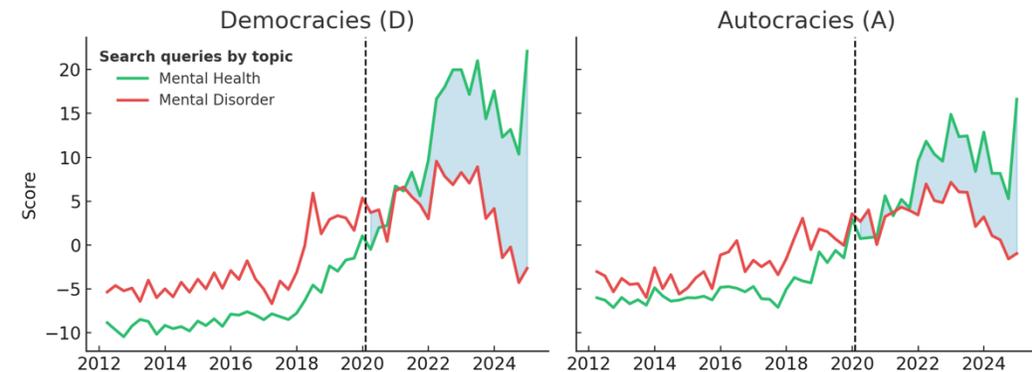
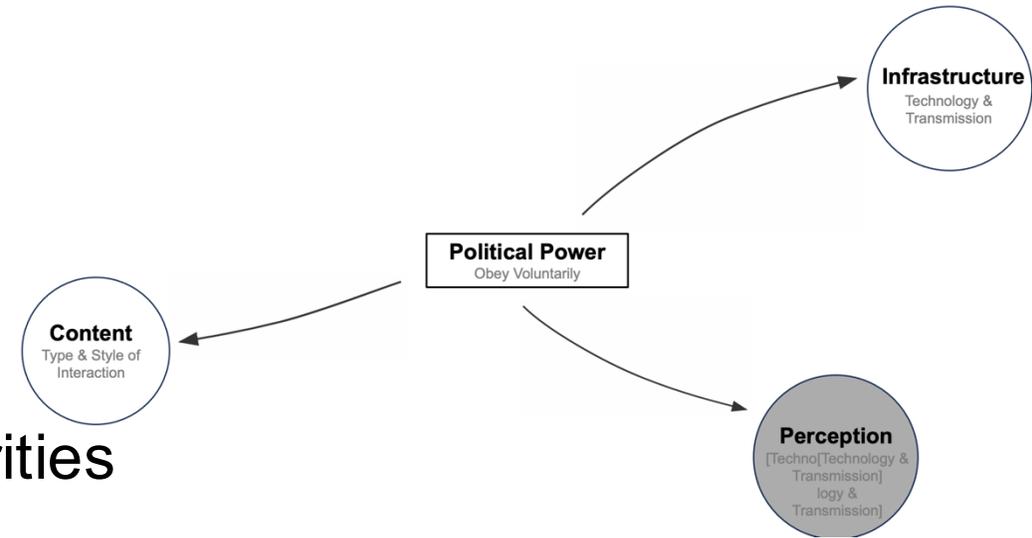
□ Men ~ State □ Women ~ Men + State

□ Can systematic stresses be used as a mean inside power relations?

□ Can we check it cross-nationally? (mental health statistics)

□ Challenge: Underreporting □ Google Trends Data

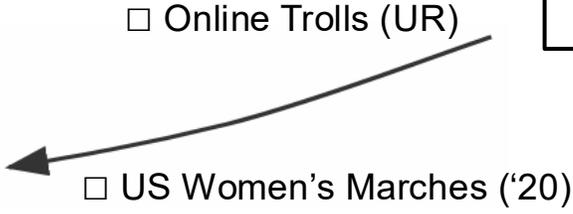
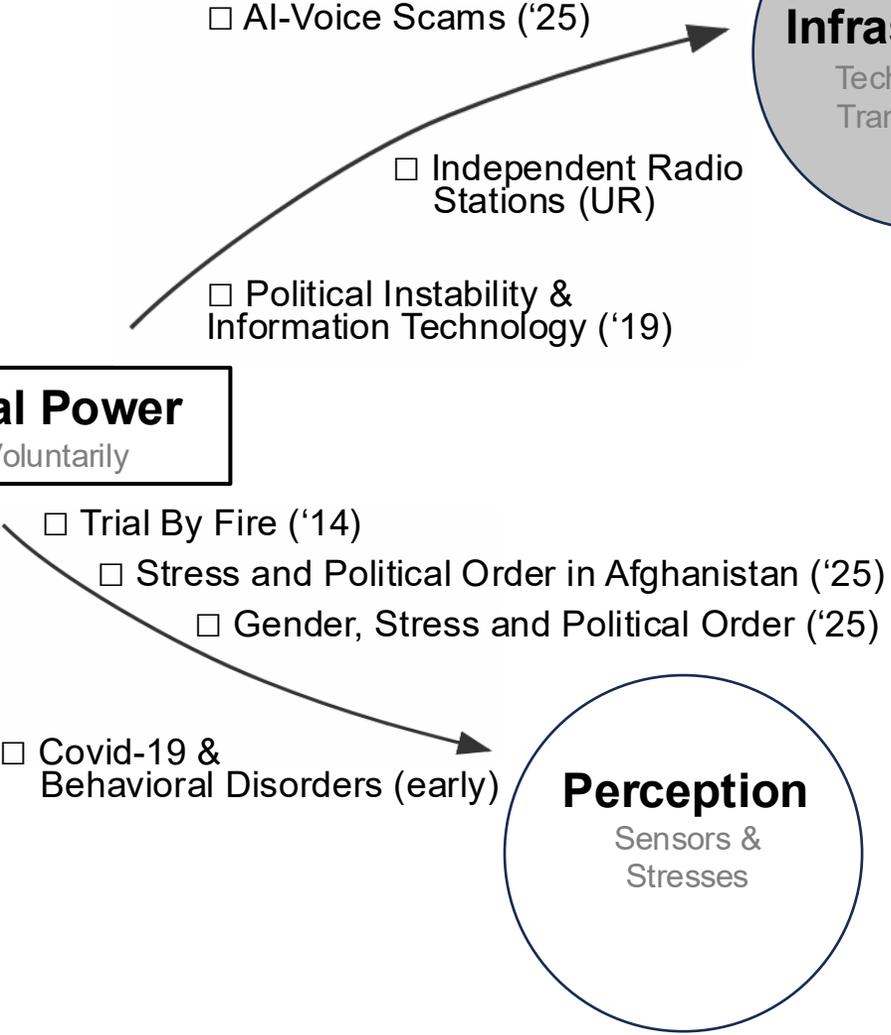
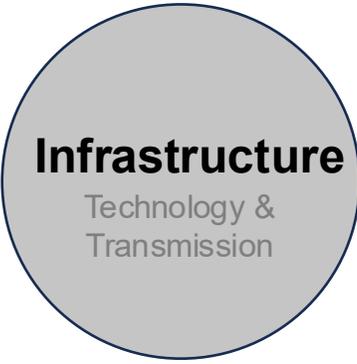
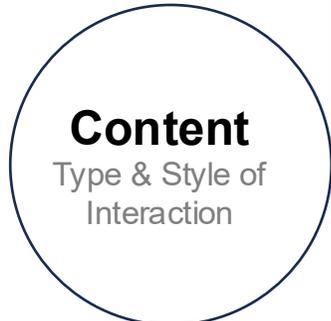
□ Intermediate findings:
1 Covid-19 shifted the global attention from severe mental health disorders to milder diagnoses
2 Democracies VS Autocracies



Research Agenda

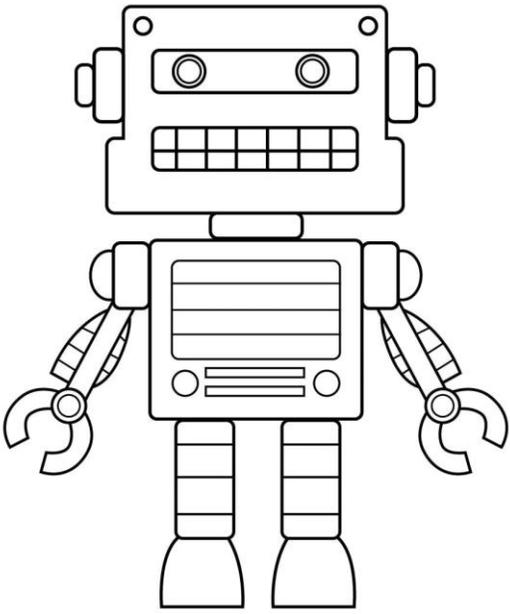
■ Legitimacy in Recognition Hypotheses

- Informational environments constitute a separate source of authority
- Cannot be reduced to Weber's Triad Weber 1919

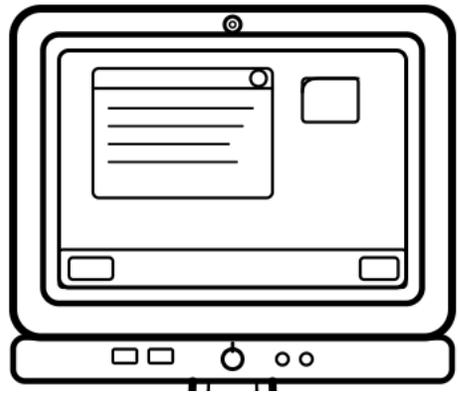


Implications

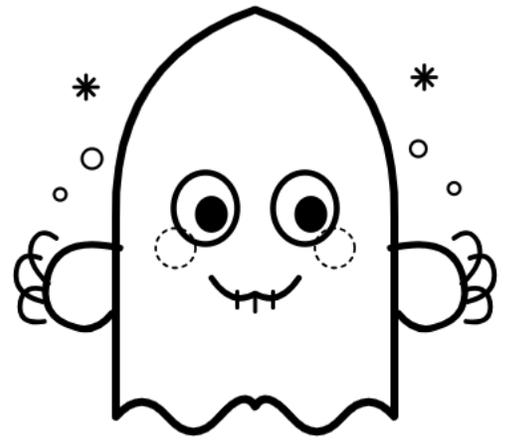
Cybersecurity & Labor Markets



Labor-Intensive
Worker



Compute-Intensive
Worker



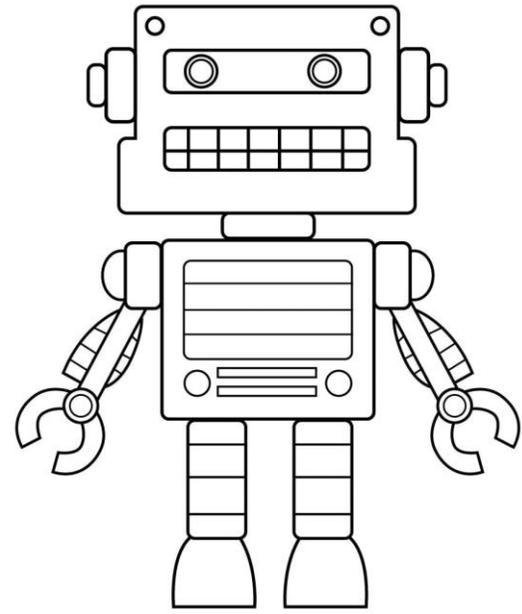
Communication-Intensive
Worker

Implications

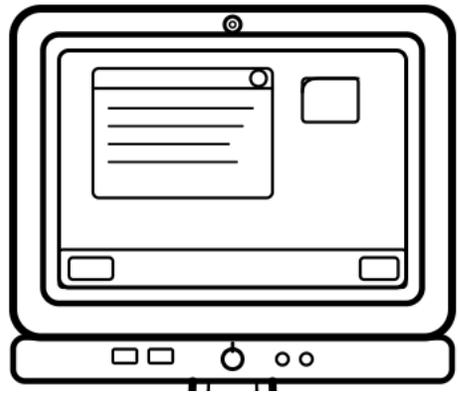
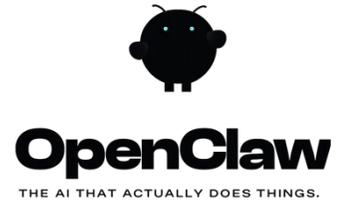
Cybersecurity & Labor Markets



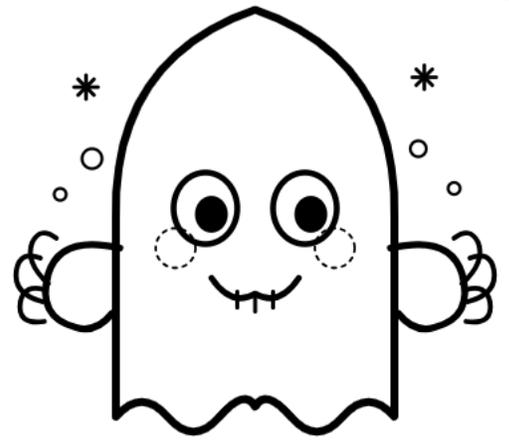
Xenobots?



**Labor-Intensive
Worker**



**Compute-Intensive
Worker**



**Communication-
Intensive
Worker**