

# Geographies of Hybrid War: Rebellion and Foreign Intervention in Ukraine

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## Foreign challengers and domestic rebels

- What explains the variation in violence in the internationalized civil conflict a.k.a. [hybrid war](#)?
- Covert actions have been used by states for hundreds of years (Cormac and Aldrich 2018)
- Open aggression is an especially costly move in the modern world, which makes the stealthy war option more attractive

## Useful deadly methods

- Violence determinants in hybrid war should resemble civil war determinants  $\implies$ 
  - because the challenger state will use the existing cleavages in the target society
- Challenger states' strategies will also transpire  $\implies$ 
  - because unlike insurgency warfare, the actions of rebels in a hybrid war will be centrally orchestrated

## Spikes of violence at subregional level

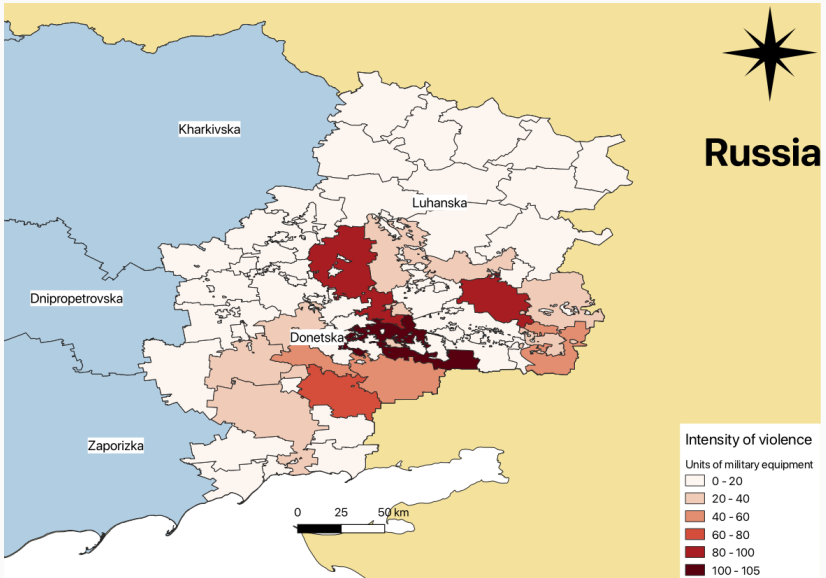
- Prewar political loyalty networks (Balcells and Steele 2016)
- Sparsely populated areas (Wood 2010)
- Remoteness from the capital of the incumbent state (Cederman, Buhaug, and Rød 2009)

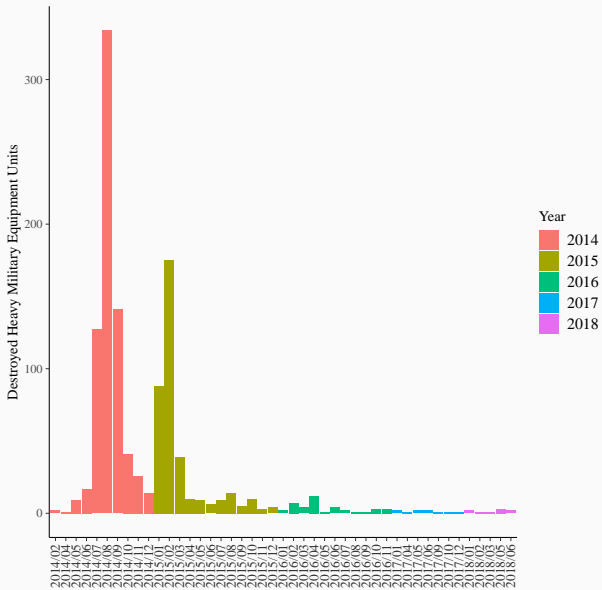
- Losses of heavy military equipment in the war zone in Eastern Ukraine:
  - armored vehicles, artillery, multiple rocket launchers and military jets by both the Ukrainian forces and the separatists
- Crowdsourced, geo-referenced, web-linked data, 2014-2018
- 78 observations at the district/city level

# The dependent variable

- Count of destroyed heavy military vehicles
- Intensity of violence

# Map of the destroyed equipment



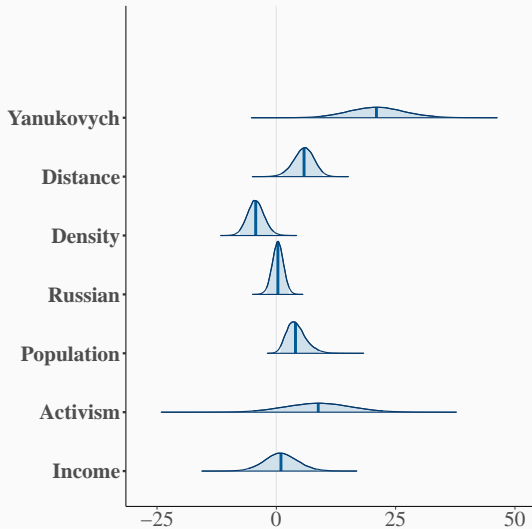




## Independent variables

- **Networks** – voting for the runaway president of Ukraine Viktor Yanukovich in 2010
- **Density** – population density
- **Distance** – distance from the capital of the country, Kyev
- Control variables: ethnic Russians ratio, voters' turnout in the last presidential elections, average salary, population size

# Bayesian estimation. Negative binomial regression

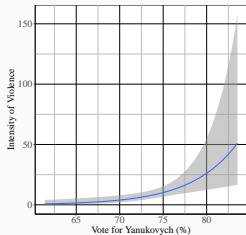


## Intensity of violence. NB

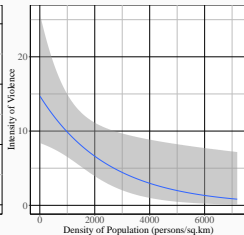
	2.5%	Posterior mean	97.5%
Yanukovych	9.45	20.98	32.99
Distance	1.24	5.80	9.70
Density	-7.66	-4.32	-0.67
Russian	-2.03	0.33	2.64
Population	0.86	4.01	8.95
Activism	-4.75	8.78	22.29
Income	-5.86	0.97	8.24

non-informative priors, 10,000 iterations, 10 chains

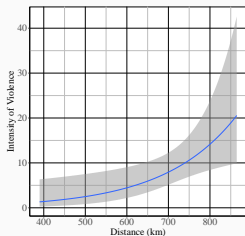
# Marginal effects



(a) Prewar networks

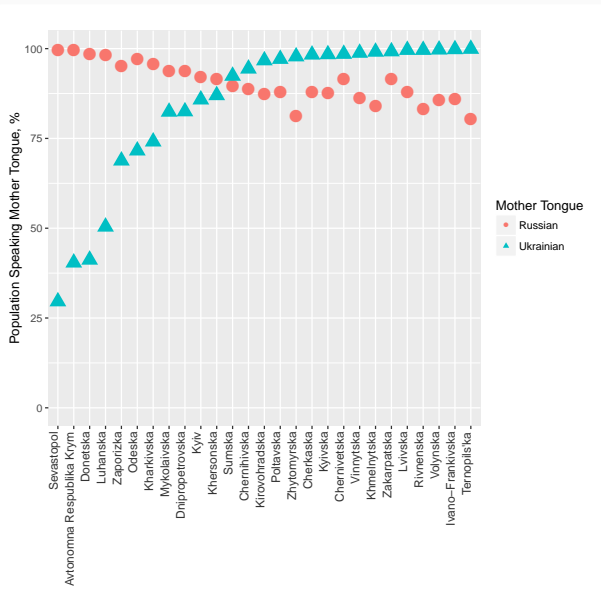


(b) Density



(c) Distance

# Ethnicity and violence



## Conclusions & future research

- Variation of violence in hybrid war resembles that in civil war
- It is mediated by the challenger state's strategies
- Ethnicity plays different roles at different levels of analysis
- More fine-grained measurement might yield more robust results

The End

## Intensity of violence. Bayesian NB model with squared term for ethnicity

	2.5%	Posterior mean	97.5%
Yanukovych	7.03	18.86	31.10
Distance	1.04	5.88	10.04
Density	-7.38	-4.04	-0.38
Russian	-3.65	4.41	12.28
Russian sq.	-11.79	-4.10	3.67
Population	1.04	4.07	8.80
Activism	-5.87	7.80	21.17
Income	-5.36	1.71	9.12

non-informative priors, 10,000 iterations, 10 chains



# Intensity of violence. NB. MLE models

	Model 1	Model 2	Model 3	Model 4
Yanukovych		14.10** (4.33)	21.46*** (4.50)	19.30*** (4.54)
Distance		5.16* (2.39)	5.94* (2.39)	6.05* (2.37)
Density		-3.45** (1.27)	-4.46** (1.72)	-4.13* (1.69)
Russian	0.07 (1.07)		0.42 (1.05)	4.74 (3.70)
Russian sq.				-4.35 (3.59)
Population	0.84 (1.70)		3.76* (1.47)	3.84** (1.49)
Activism	12.32* (5.18)		8.99 (4.75)	8.08 (4.71)
Income	2.09 (2.74)		0.83 (2.83)	1.62 (2.76)
AIC	512.63	499.47	495.34	495.94
BIC	526.77	511.25	516.55	519.51
Log Likelihood	-250.31	-244.73	-238.67	-237.97
Deviance	83.44	83.57	82.80	83.31
Num. obs.	78	78	78	78

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$