Is Your Pain My Pain? Altruistic Legacies of Herbicidal Warfare in Vietnam

Gaku Ito (Osaka Metropolitan University)
Duc **Tran** (Hiroshima University)
Yuichiro **Yoshida** (Kwansei Gakuin University)

July 5–6, PIPC 2024, Korea University

Outline

Introduction

Experiment Design

Results

Conclusion

Introduction

How Does War Foster Altruism?

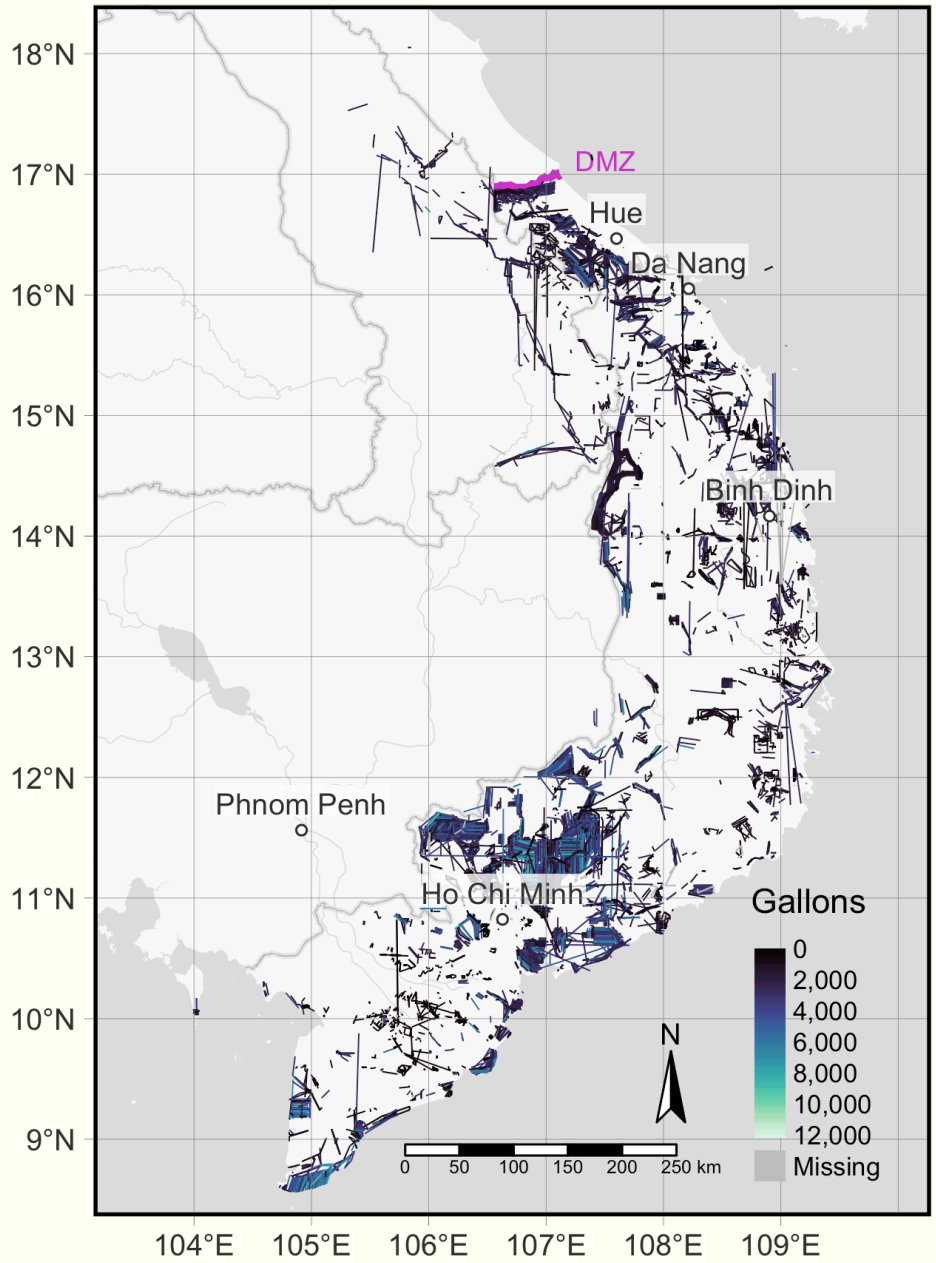
- Exposure to **political violence** fosters **altruism** and prosocial behavior (e.g., Bauer et al., 2016, 2014; Bellows & Miguel, 2006, 2009; Blattman, 2009; Dinas et al., 2021; Lindsey & Koos, 2024; Lupu & Peisakhin, 2017; Wayne & Zhukov, 2022)
  - identification challenge of confounding and collider bias
- Insights from **a lab-in-the-field experiment** in Da Nang, Vietnam (pilot experiment, with $N = 30$)
  1. **"My pain"** effect: Herbicide victims behave altruistic
  2. **"Your pain"** effect: **Non**-victims behave altruistic **toward** victims

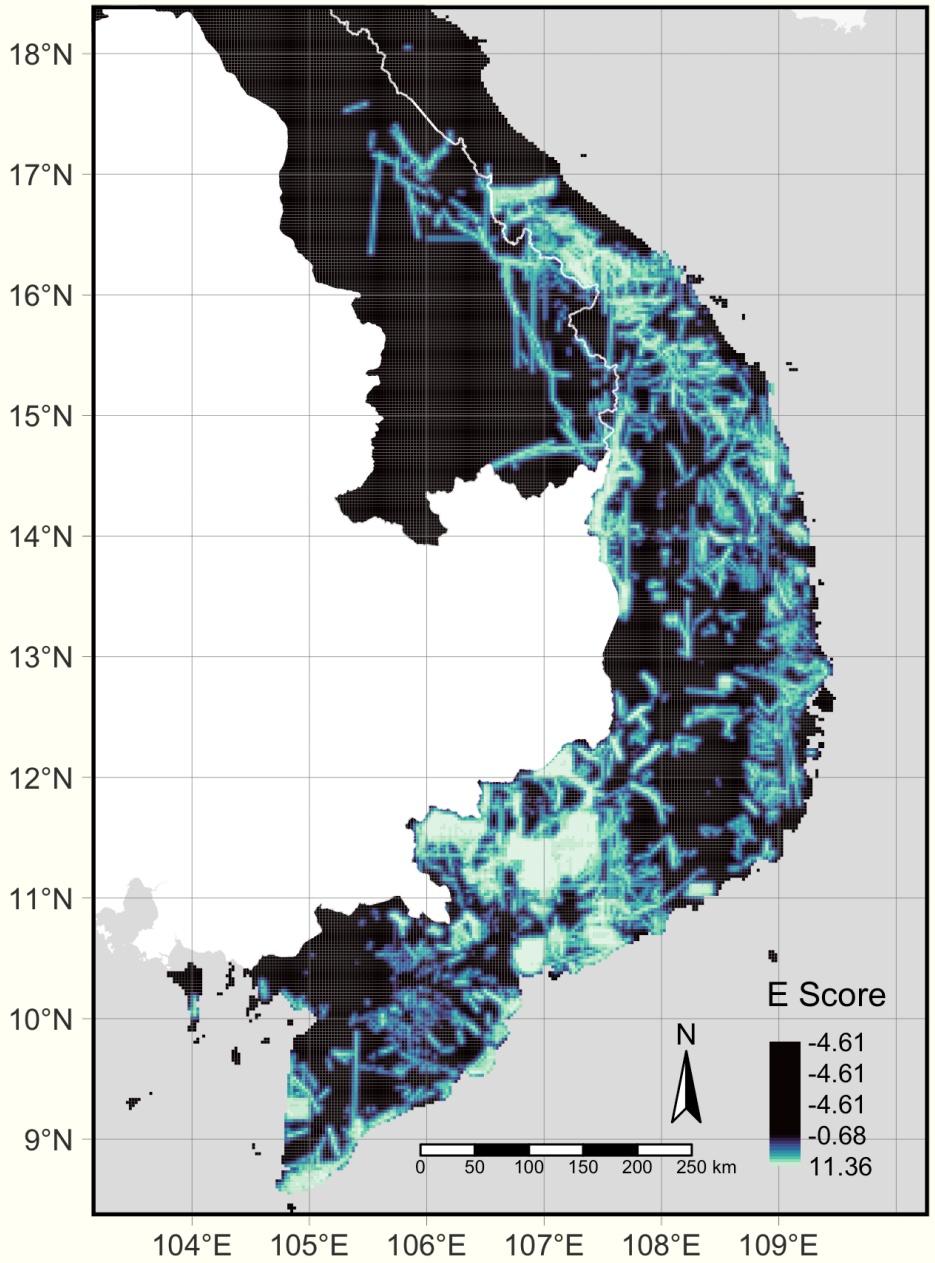
Experiment Design

Sample, Survey Mode, etc.

- **"Hard-to-reach"** population: Herbicide victims and their families/descendants
  - We are somehow (officially) granted access to the herbicide victims (households) in Da Nang, Vietnam
  - Two major US air bases for Operation Ranch Hand (1962–1971): Bien Hoa (near Ho Chi Minh City/Saigon) and Da Nang air bases
- **Sample**: 15 households (each) **with/without** herbicide victims (30 in total) in 24 villages in Hoa Hai (commune), Da Nang (district)
  - Survey mode: Face-to-face (online is infeasible)
  - Date: August 28–September 2, 2023
  - We ended up with a sample of **28(/30) households** due to errors in the field

S-NAS-HERBS File, 1961–1971





Study Area: Hoa Hai, Da Nang

Outcomes and Covariates

Behavioral Outcome

- **Dictator (sharing) game** (next slide) ⇝ today's talk

Attitudinal Outcome

- Government/party support ⇝ ⊘ **NOT** approved
- Institutional/interpersonal trust ⇝ ⊘ **NOT** approved
  - both direct questioning and indirect approaches (e.g., crosswise model, endorsement and list experiments)

Demographic Variables, etc.

- Covariates: Household and respondent attributes (education, gender, household size, etc., Appendix)
- Other outcomes: Social and political organization membership/leadership (results not reported here)

Dictator Game and Treatment

Dictator (Sharing) Game

- Respondents receive VND 80K ~ a half-day wage
  - Minimum hourly wage in Vietnam ~ VND 20K ~ USD 0.8
- decide how to **share** ("donate") the VND 80K with an anonymous **recipient** with an increment of 10K (0–80K)

Randomized Treatments

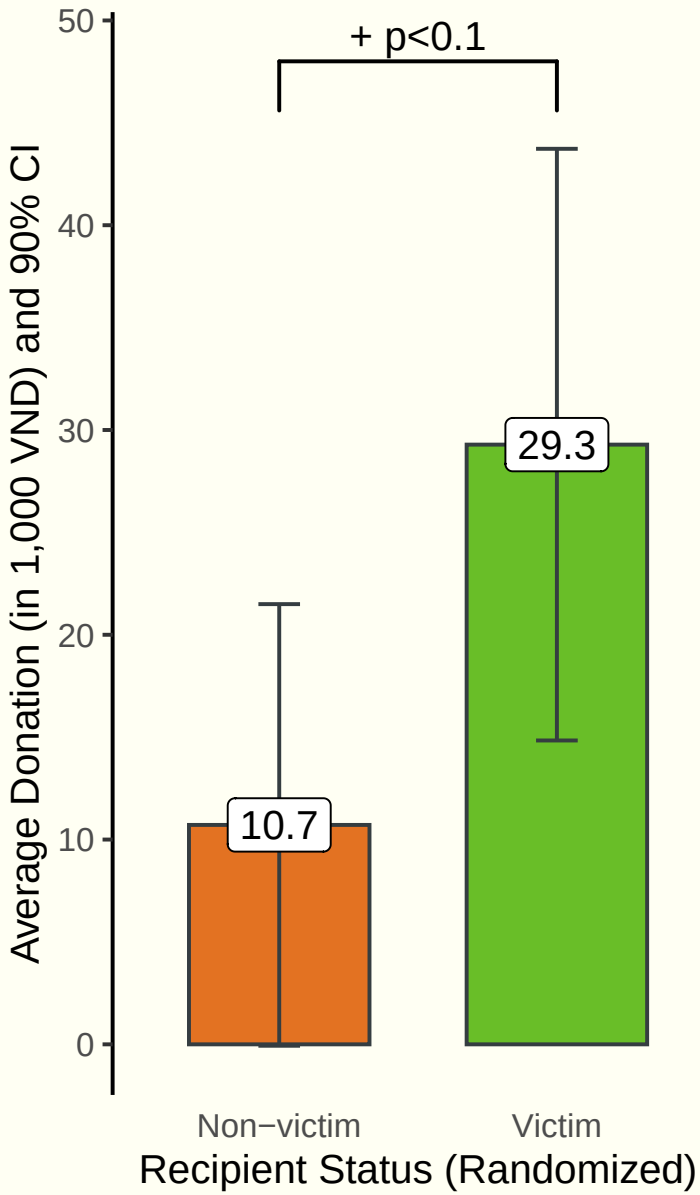
1. **Recipient status**: Household **with/without** herbicide victim(s) $\rightsquigarrow$ **"your pain"**
2. Decision timing: Dictator game at the beginning/end of the herbicide-related survey $\rightsquigarrow$ information stimulus

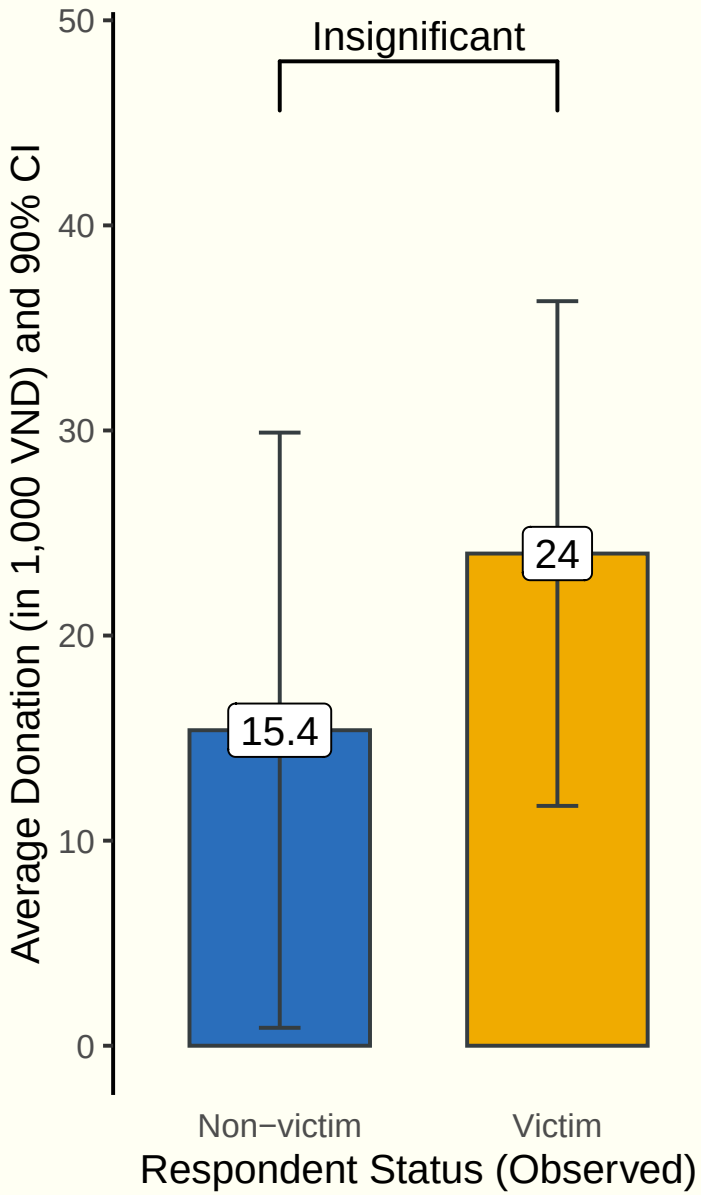
Observed Herbicide Victim Status

- **Respondent status**: With 1+ victims or not $\rightsquigarrow$ **"my pain"**
- echoing the key variable in previous studies

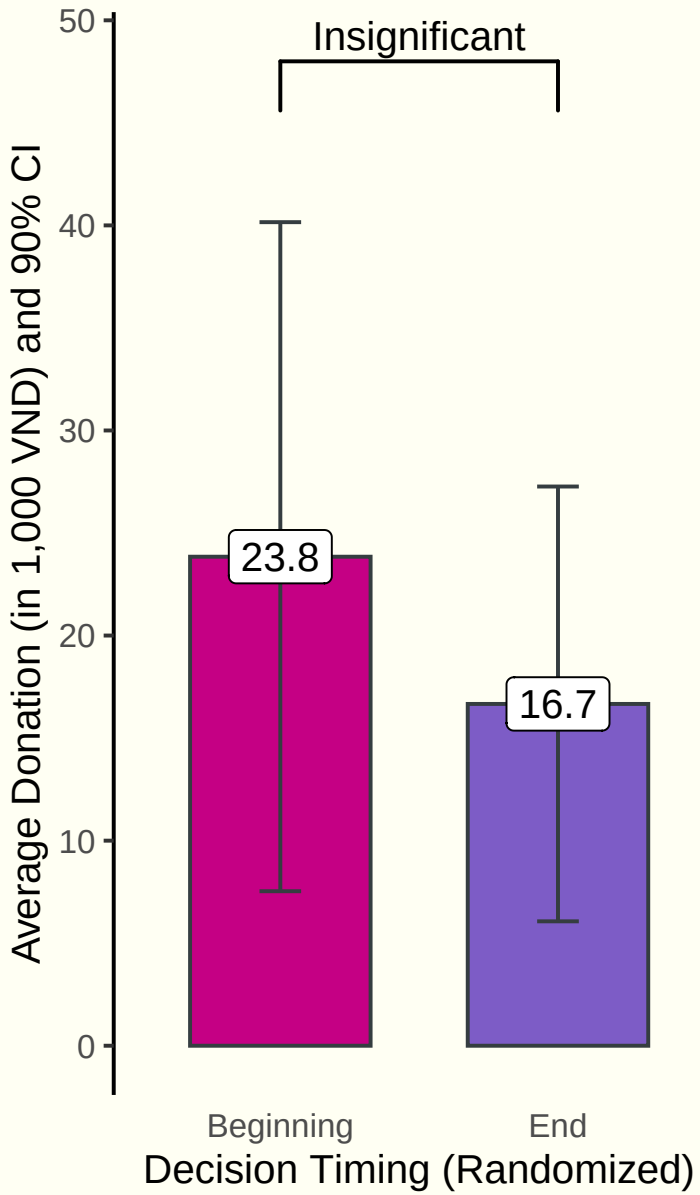
Results

Naïve Difference





Naïve Difference



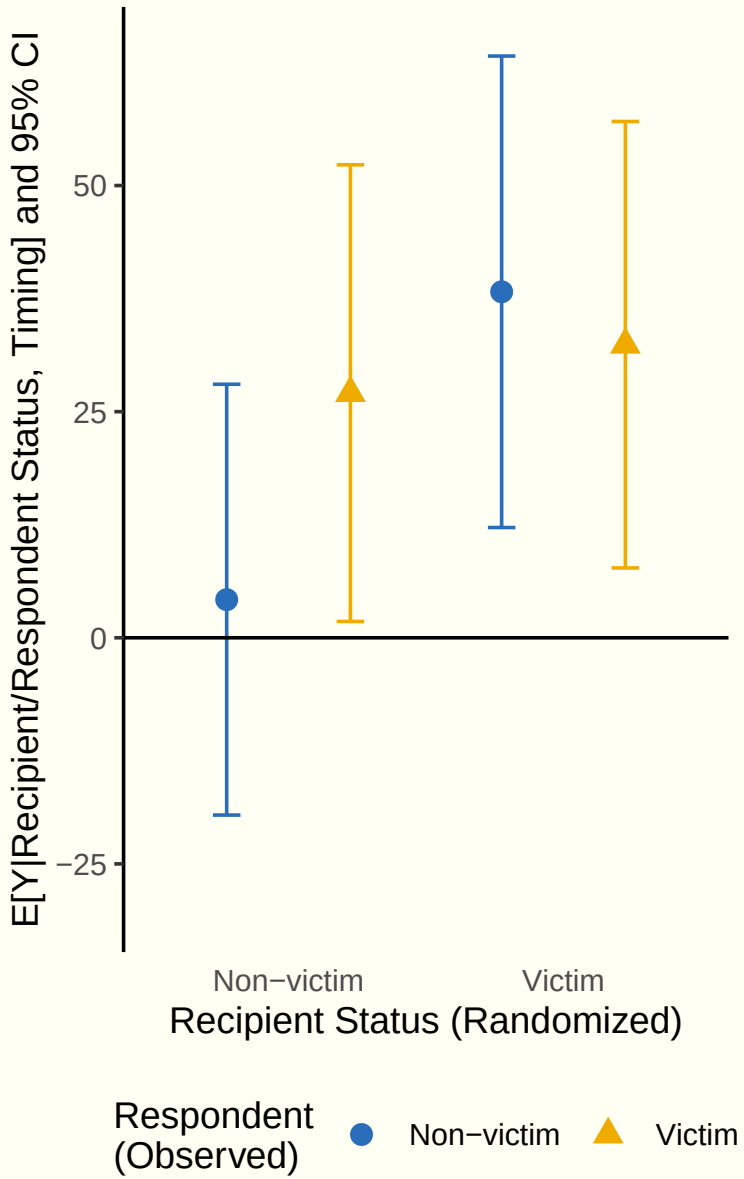
- **"Your pain"** effect: **Recipient** victim status is associated with an increase in donation of VND 18.6K (from 10.7K to 29.3K)
- **"My pain"** effect: **Respondent** victim status is associated with an increase in donation of VND 8.6K
  - consistent with existing literature
  - yet the association remains statistically indeterminate
- Decision timing (after the survey) is associated with a decrease in donation amount of VND 7.1K
  - and remains inconclusive

Regression Estimates

	Outcome: Donation (Dictator Game, in 1,000 VND)					
	(1)	(2)	(3)	(4)	(5)	(6)
Main Effects						
Victim Recipient	18.65^{+}	34.04*	18.71^{+}	32.32*	50.14**	33.82*
(**"Your Pain"**)	(10.79)	(15.56)	(10.91)	(11.54)	(14.20)	(12.28)
Decision Timing	−9.71	−9.84	−17.53	−20.11^{+}	−16.87	−26.39
(1 if at the end)	(10.89)	(10.71)	(16.01)	(10.63)	(9.96)	(17.37)
Victim Household	8.62	22.83	0.81	6.22	30.54^{+}	−0.74
(**"My Pain"**)	(10.89)	(15.01)	(16.01)	(11.65)	(16.73)	(19.18)
Interaction Effects						
Victim Recipient		− 28.69			− 42.21^{+}	
× Victim Household		(21.23)			(22.24)	
Decision Timing			14.82			11.21
× Victim Household			(22.03)			(24.13)
Demographic controls				✓	✓	✓
Pre-1961 resident FE				✓	✓	✓
Average outcome	20	20	20	20	20	20
Observations	28	28	28	27	27	27
Adjusted R^2	0.04	0.08	0.02	0.35	0.45	0.32

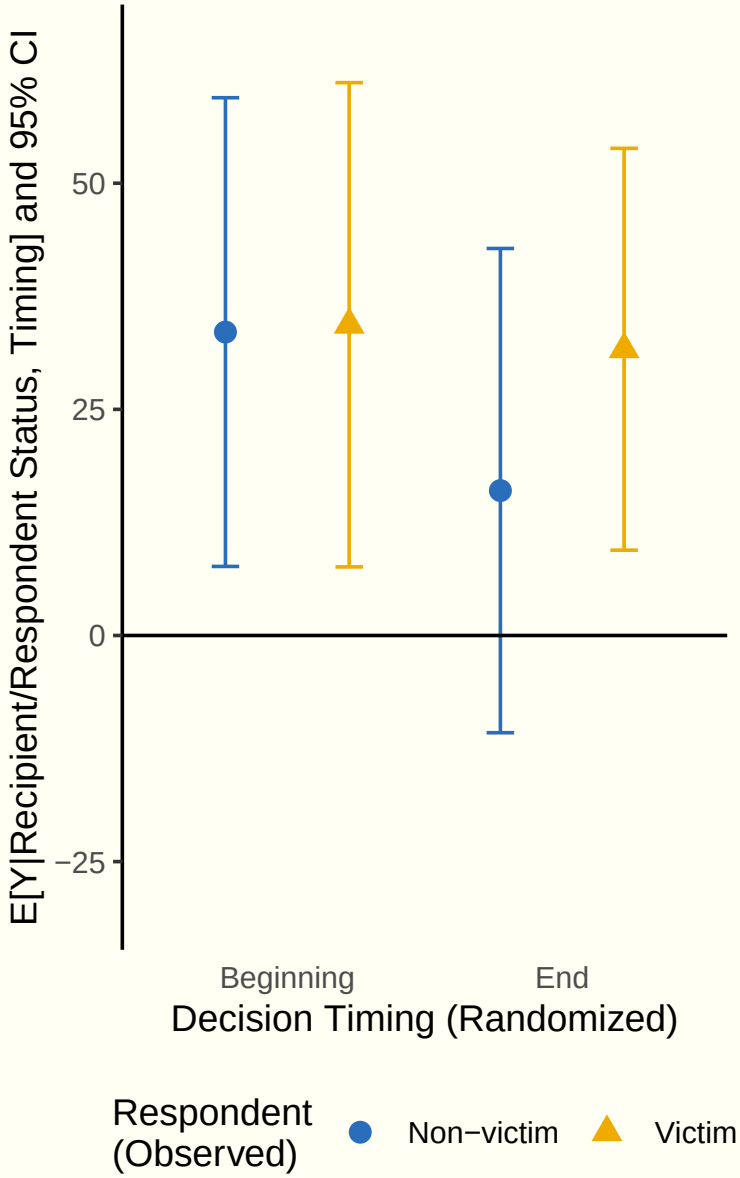
OLS estimates. Standard errors in parentheses. ** $p < 0.01$, * $p < 0.05$, $^{+}$ $p < 0.1$.

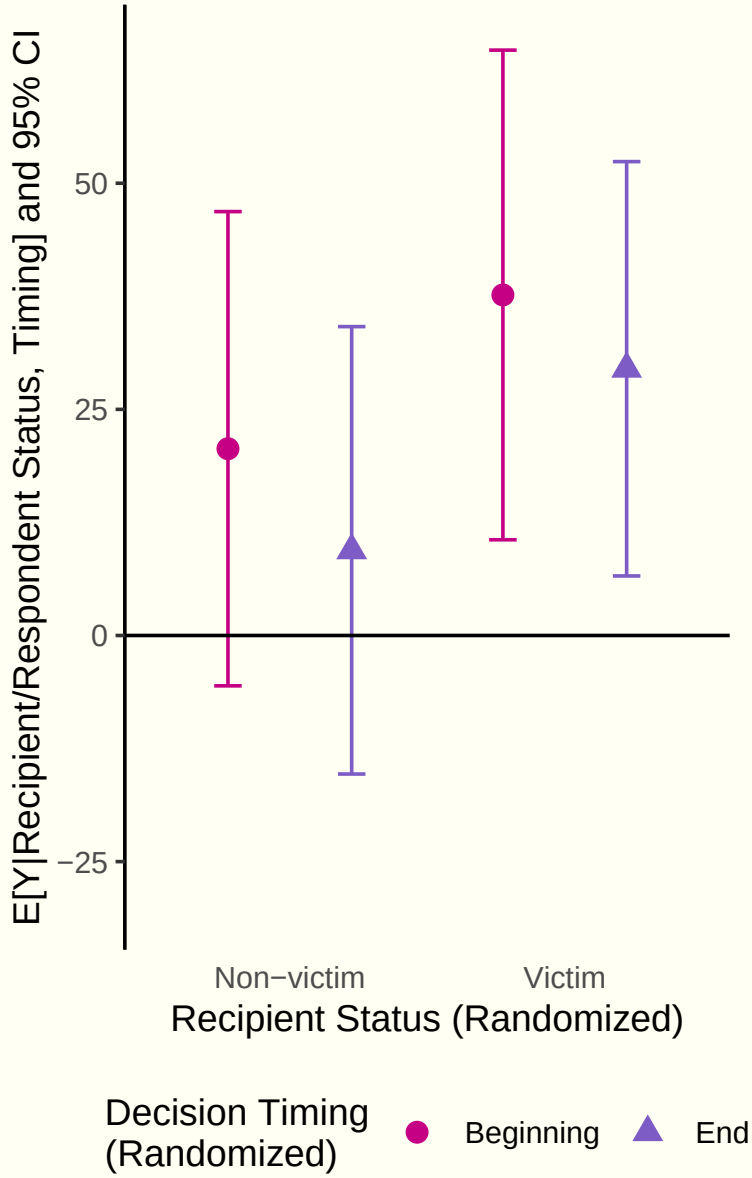
Heterogeneous Effects



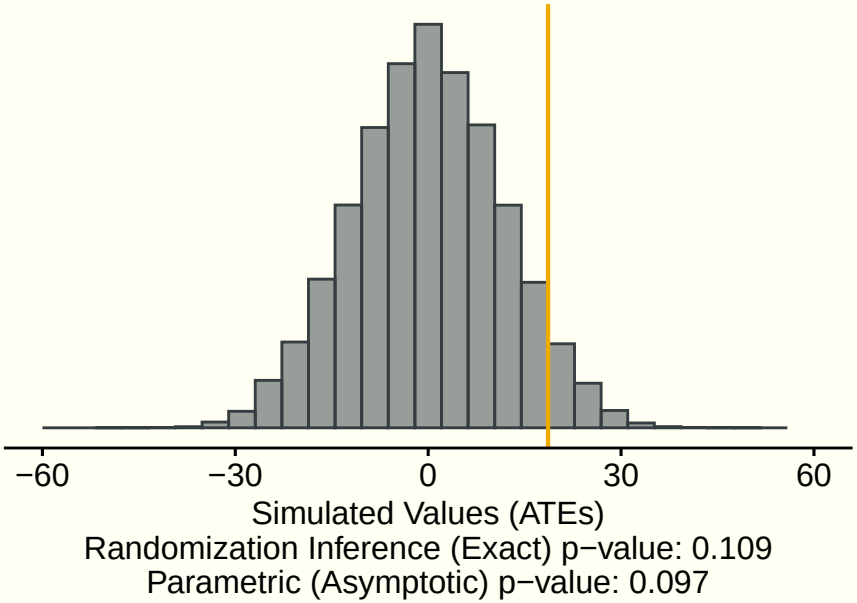
- **Recipient victim status** is associated with an increase in the donation by **non-victim** households (dots, Model 2)
  - yet the effect is invisible among victim households (triangles)
- **"Your pain"** effect in **non**-victim responses, but **not** in victims'
  - Ceiling effect? (up to 80K)
- **Heterogeneous effect** on behavioral outcome
  - similar to previously-reported effect heterogeneity (Dinas et al., 2021; Wayne & Zhukov, 2022)

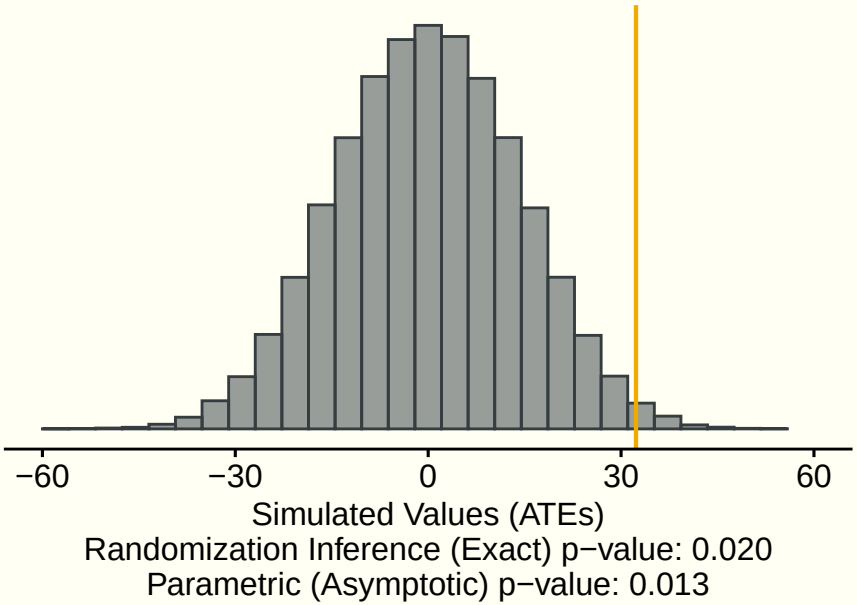
Heterogeneous Effects





Randomization Inference





- Accounting for the small sample size ($N = 28$)
  - also the right-skewed outcome distribution
  - asymptotic approach would be ill-suited
- **Randomization inference** and asymptotic inference yield similar results for **recipient** victim status
  - with a sharp null hypothesis: $\tau_i = 0 \quad \forall i$
  - without (Model 1, top), with controls (Model 4, bottom) (cf. Young, 2019)

Conclusion

Your Pain Is My Pain

- **"Your pain"** matters in generating post-war **altruism**
  - "Your pain" effect is visible among **non-victims**
  - "My pain" might also foster altruism
  - Non-victims' choices were swayed by the "your pain" treatment, but victims' were not ⇝ effect **heterogeneity**
- **Dual legacies** of war on **altruism**
  1. **"My pain" effect**: War alters **victim's behavior** via direct exposure (e.g., Bauer et al., 2014; Bellows & Miguel, 2006, 2009; Blattman, 2009) and indirect exposure/transmission (e.g., Lindsey & Koos, 2024; Lupu & Peisakhin, 2017; Wayne & Zhukov, 2022)
  2. **"Your pain" effect**: War alters **non-victim's behavior** ⇝ Previously under-studied legacies of political violence
- **Lasting** legacies of political violence **beyond** the first-generation victims ⇝ transmission via interaction?

No Pain, No Altruism?

- **Full-scale** experiment is scheduled later this year with a bigger sample (hopefully 500, reflecting a power analysis)
- **Design** and estimation
  - Block random assignment by, e.g., respondent victim status (survivors/descendants + gender, household size)
- Experimental measures/**outcomes**
  - Behavioral: (1) Games (ultimatum game, trust game, and envy game) and (2) risk propensity (dichotomous choice, coin toss or not, keeping the expected value constant)
  - Attitudinal: (1) Sympathy for wartime violence victims (Hiroshima/Nagasaki/Palestine/Ukraine) and (2) anti-US sentiments (perpetrator of indiscriminate violence)
- **Mechanisms?** Mediators? Moderators?
  - causal processes (= indirect effect) and causal interactions (= conditioning effect of a mediator) (Acharya et al., 2018)

Thank You

Gaku Ito // Osaka Metropolitan University

E gaku@omu.ac.jp

W https://gaku-ito.github.io

Duc Tran // Hiroshima University

E tranduc@hiroshima-u.ac.jp

Yuichiro Yoshida // Kwansei Gakuin University

E yuichiroyoshida@kwansei.ac.jp

Our Another Manuscript

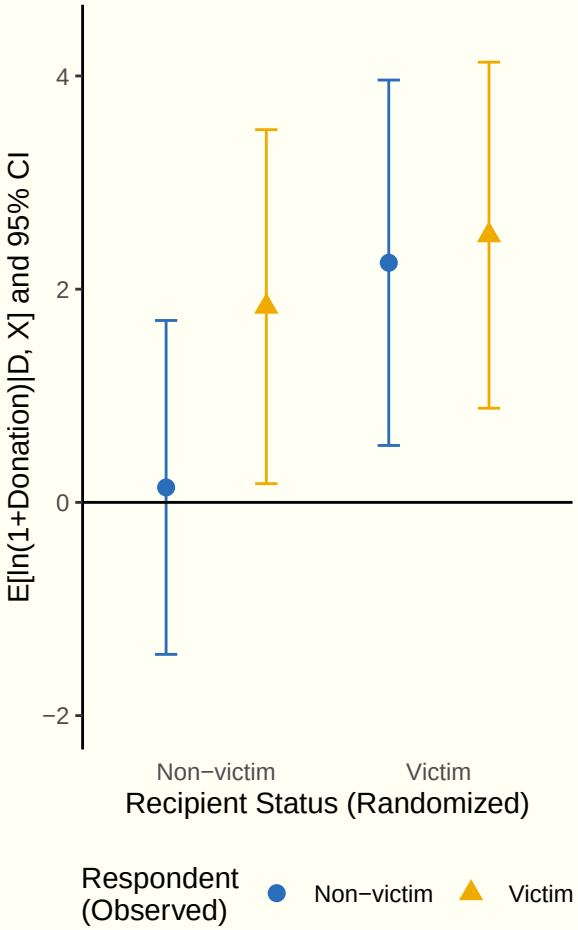
W on the legacies of herbicidal warfare is available at:
https://ssrn.com/abstract=4512129

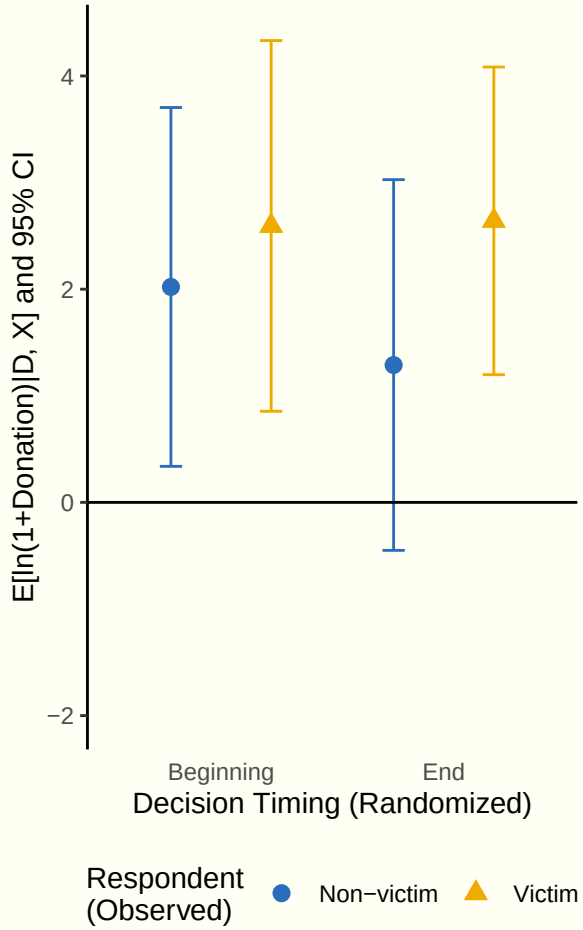
Appendix

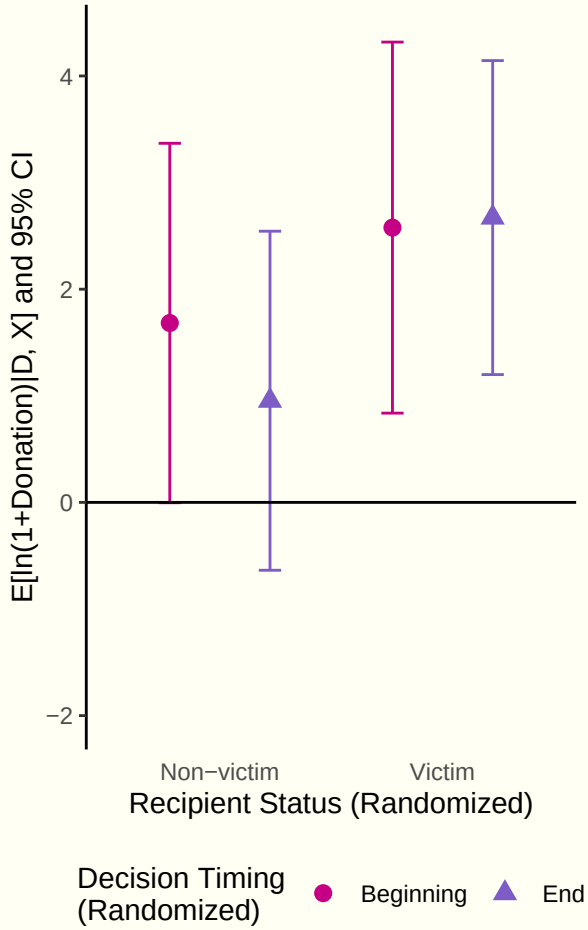
Descriptive Statistics

	N	Mean	SD	Min	Max
Outcome (dictator game)					
Donation	28	20	29.059	0	80
20/80 = 25% approximately matches the known experimental results (~ 30%)					
Herbicide victim status					
With herbicide victim (1 = yes)	28	0.536	0.508	0	1
Household attributes					
Pre-herbicide (1961) resident (1 = yes)	28	0.536	0.508	0	1
Household size (N family members)	28	3.357	1.789	1	7
Female household head (1 = yes)	28	0.464	0.508	0	1
With wage income (1 = yes)	28	0.929	0.262	0	1
Annual wage income (in million VND)	28	95.793	90.575	0	300
Respondent attributes					
Female respondent (1 = yes)	28	0.571	0.504	0	1
Respondent's age	27	57.889	13.846	32	80
Respondent's education (years)	28	9.250	4.178	0	15
Not in regression models					
Residence duration (years; NA = "for centuries")	14	16.714	18.378	5	72
Included as pre-herbicide resident					
N herbicide victims	28	0.821	0.905	0	3
N died herbicide victims	28	0.286	0.659	0	3
Family member(s) with serious illness (1 = yes)	28	0.500	0.509	0	1
N family members with serious illness	28	0.750	0.887	0	3

Heterogeneity: Logged Outcome

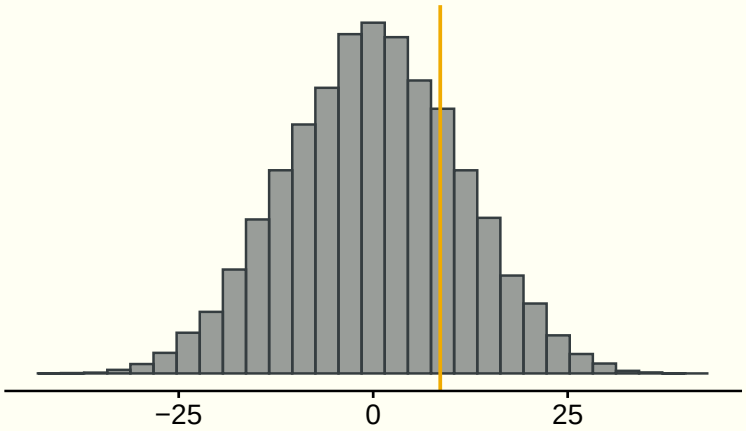






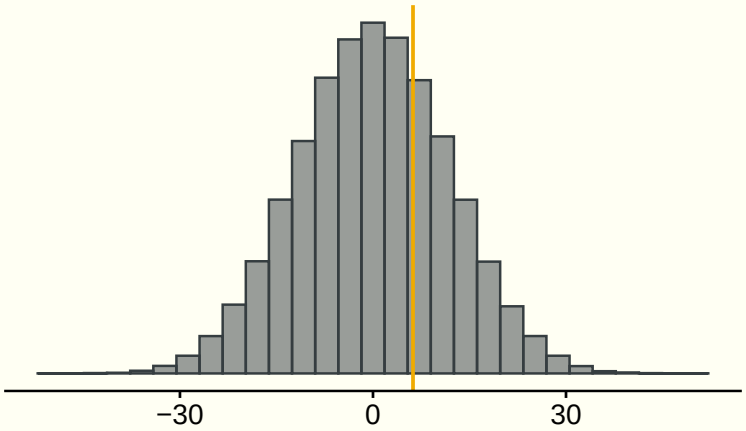
Randomization Inference

Respondent Victim, Model (1)



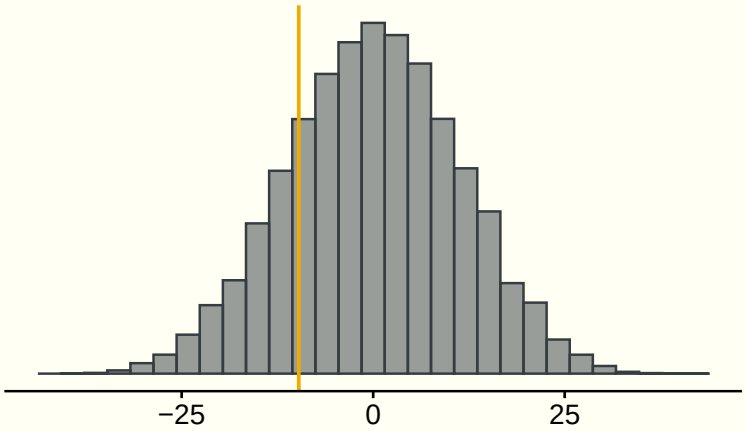
Randomization Inference (Exact) p−value: 0.457
Parametric (Asymptotic) p−value: 0.436

Respondent Victim, Model (4)



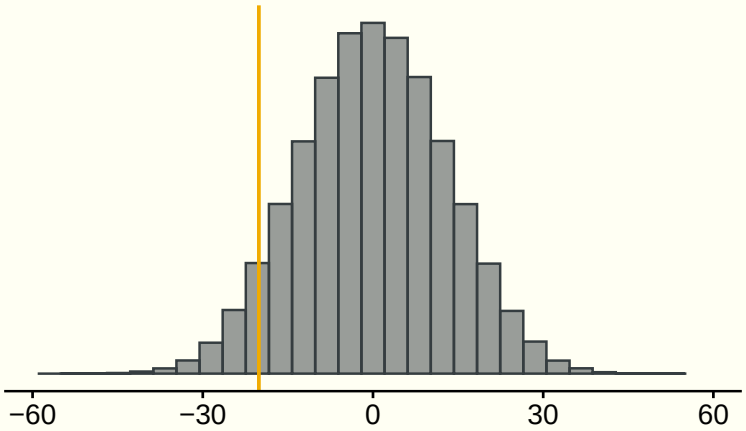
Randomization Inference (Exact) p−value: 0.602
Parametric (Asymptotic) p−value: 0.601

Decision Timing, Model (1)



Randomization Inference (Exact) p−value: 0.400
Parametric (Asymptotic) p−value: 0.381

Decision Timing, Model (4)



Randomization Inference (Exact) p−value: 0.119
Parametric (Asymptotic) p−value: 0.078

References I

Acharya, Avidit; Matthew Blackwell & Maya Sen (2018) Analyzing Causal Mechanisms in Survey Experiments. *Political Analysis* 26(4): 357–378.

Bauer, Michal; Christopher Blattman; Julie Chytilová; Joseph Henrich; Edward Miguel & Tamar Mitts (2016) Can War Foster Cooperation? *Journal of Economic Perspectives* 30(3): 249–274.

Bauer, Michal; Alessandra Cassar; Julie Chytilová & Joseph Henrich (2014) War's Enduring Effects on the Development of Egalitarian Motivations and In-Group Biases. *Psychological Science* 25(1): 47–57.

Bellows, John & Edward Miguel (2006) War and institutions: New evidence from Sierra Leone. *American Economic Review* 96(2): 394–399.

Bellows, John & Edward Miguel (2009) War and Local Collective Action in Sierra Leone. *Journal of Public Economics* 93(11-12): 1144–157.

Blattman, Christopher (2009) From Violence to Voting: War and Political Participation in Uganda. *American Political Science Review* 103(2): 231–247.

Dinas, Elias; Vasiliki Fouka & Alain Schläpfer (2021) Family history and attitudes toward out-groups: Evidence from the European refugee crisis. *Journal of Politics* 83(2): 647–661.

References II

Ito, Gaku; Duc Tran & Yuichiro Yoshida (2023). Not gone with the wind: Long-run impact of herbicidal warfare in Vietnam. Available at SSRN: `https://ssrn.com/abstract=4512129`.

Lindsey, Summer & Carlo Koos (2024) Legacies of Wartime Sexual Violence: Survivors, Psychological Harms, and Mobilization. *American Political Science Review*: forthcoming.

Lupu, Noam & Leonid Peisakhin (2017) The Legacy of Political Violence across Generations. *American Journal of Political Science* 61(4): 836–851.

Wayne, Carly & Yuri M Zhukov (2022) Never Again: The Holocaust and Political Legacies of Genocide. *World Politics* 74(3): 367–404.

Young, Alwyn (2019) Channeling Fisher: Randomization tests and the statistical insignificance of seemingly significant experimental results. *Quarterly Journal of Economics* 134(2): 557–598.