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

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Outline

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Experiment Design

Results

Conclusion

Introduction

How Does War Foster Altruism?

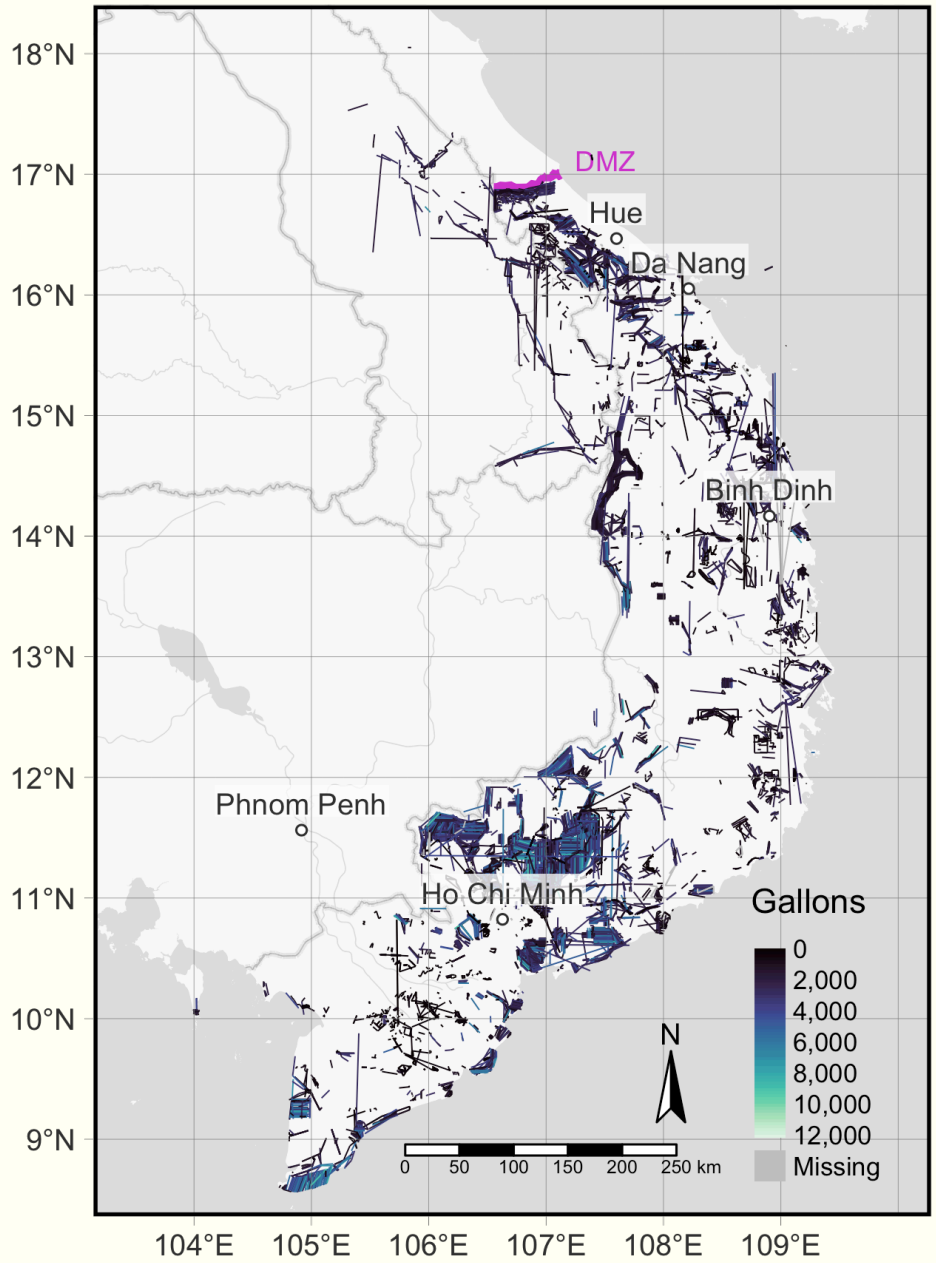
- Exposure to **wartime violence** fosters **altruism** and prosocial behavior (e.g., Bauer et al., 2016; Blattman, 2009; Dinas et al., 2021; Lindsey & Koos, 2024; Lupu & Peisakhin, 2017; Walden & Zhukov, 2020; Wayne & Zhukov, 2022)
  - identification challenge of confounding and collider bias
- Insights 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

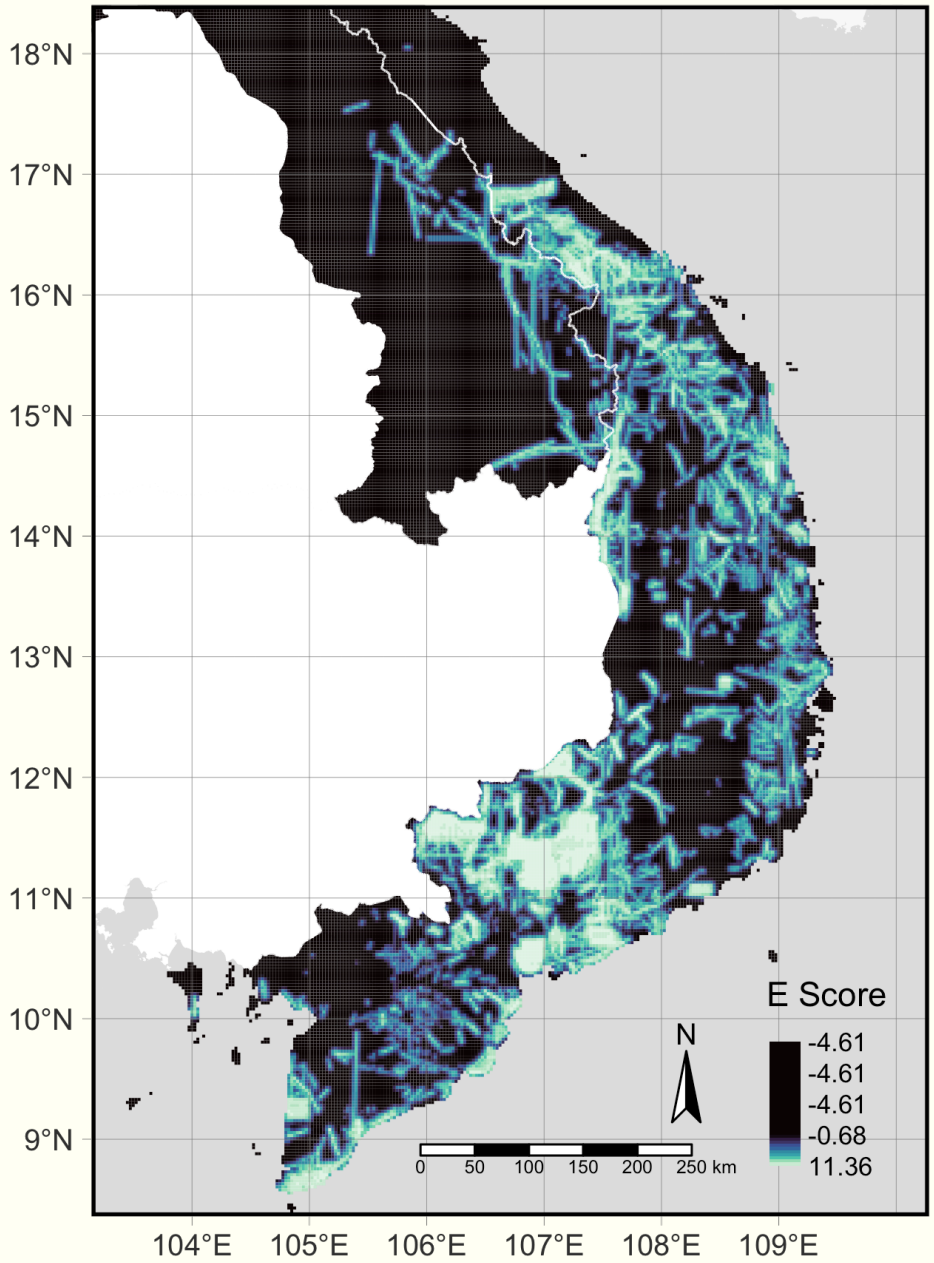
Experiment Design

Sample, Survey Mode, etc.

- **"Hard-to-reach"** population: Herbicide victims and their families/descendants
  - We are somehow (officially) granted access to the herbicide victim 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

TT	ĐƠN VỊ HÀNH CHÍNH	DIỆN TÍCH (Km²)	DÂN SỐ (Người)	MẬT ĐỘ (Người/km²)
1	Q. Cẩm Lệ	33,3	71 400	2 144
2	Q. Hải Châu	20,6	198 800	9 650
3	Q. Liên Chiểu	83,1	72 800	876
4	Q. Ngũ Hành Sơn	36,5	50 500	1 384
5	Q. Sơn Trà	60,8	112 600	1 852
6	Q. Thanh Khê	9,3	160 900	17 301
7	H. Hòa Vang	707,3	106 800	151
8	H. Hoàng Sa	305,0		
	Toàn tỉnh	1 255,9	773 800	616

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 (endorsement/list)

Demographic Variables, etc.

- Covariates: Household and respondent attributes (reported in Appendix)
- Other outcomes: Social and political organization membership/leadership (results not reported here)

Dictator Game and Treatment

Dictator (Sharing) Game

- Respondents receive VND 80K (~ USD 3.5)
  - Minimum hourly wage in Vietnam ~ USD 1
- decide how to share ("donate") the VND 80K with an anonymous recipient with an increment of 10K (0–80K)

Randomized Treatments

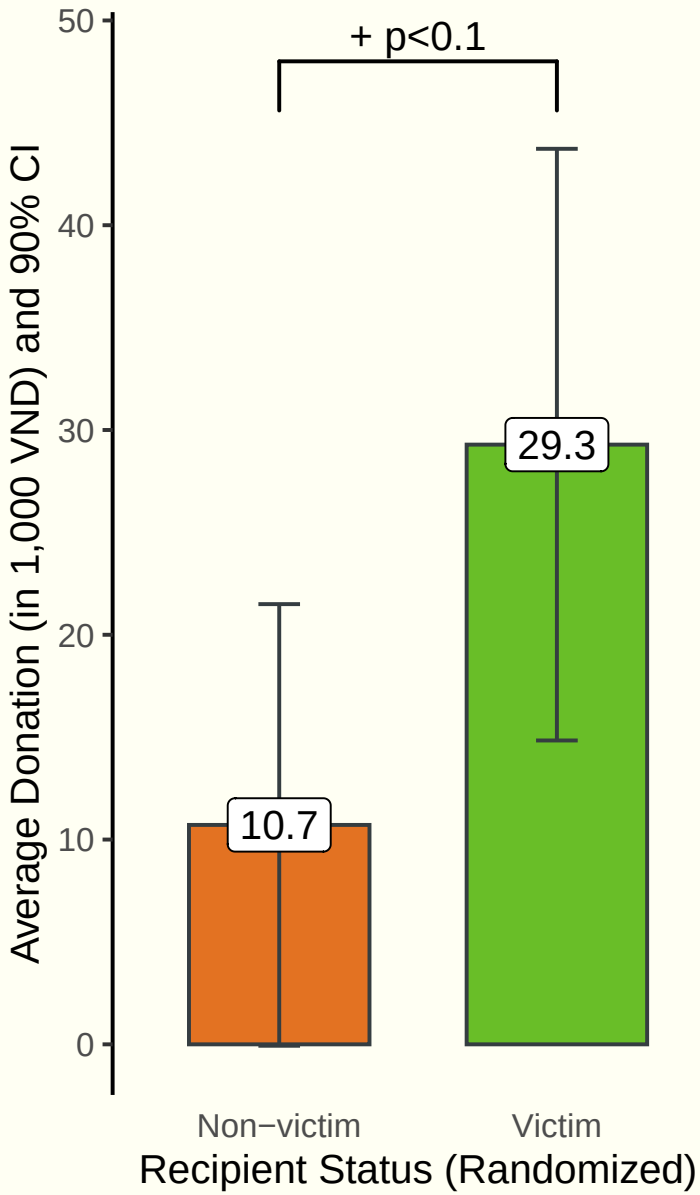
1. **Recipient status**: Household **with/without** herbicide victim(s) $\rightsquigarrow$ **"your pain"**
2. Decision timing: Dictator game at the beginning/end of the herbicide-related survey $\rightsquigarrow$ information stimulus

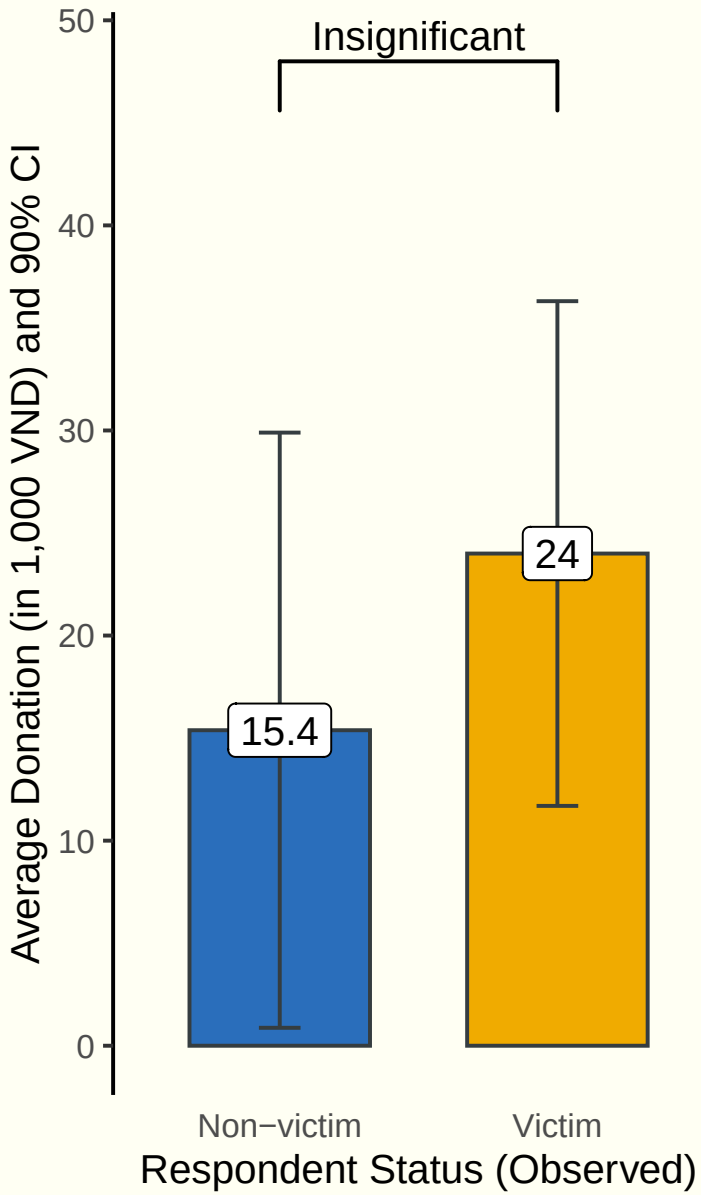
Observed Herbicide Victim Status

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

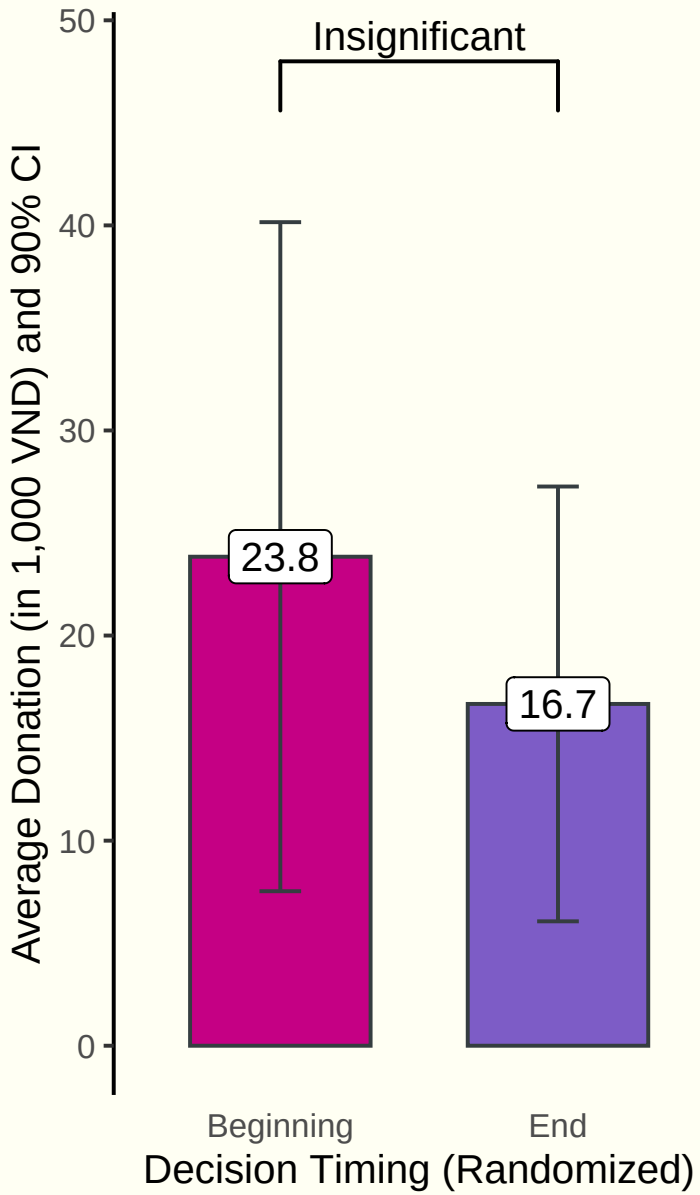
Results

Naïve Difference





Naïve Difference



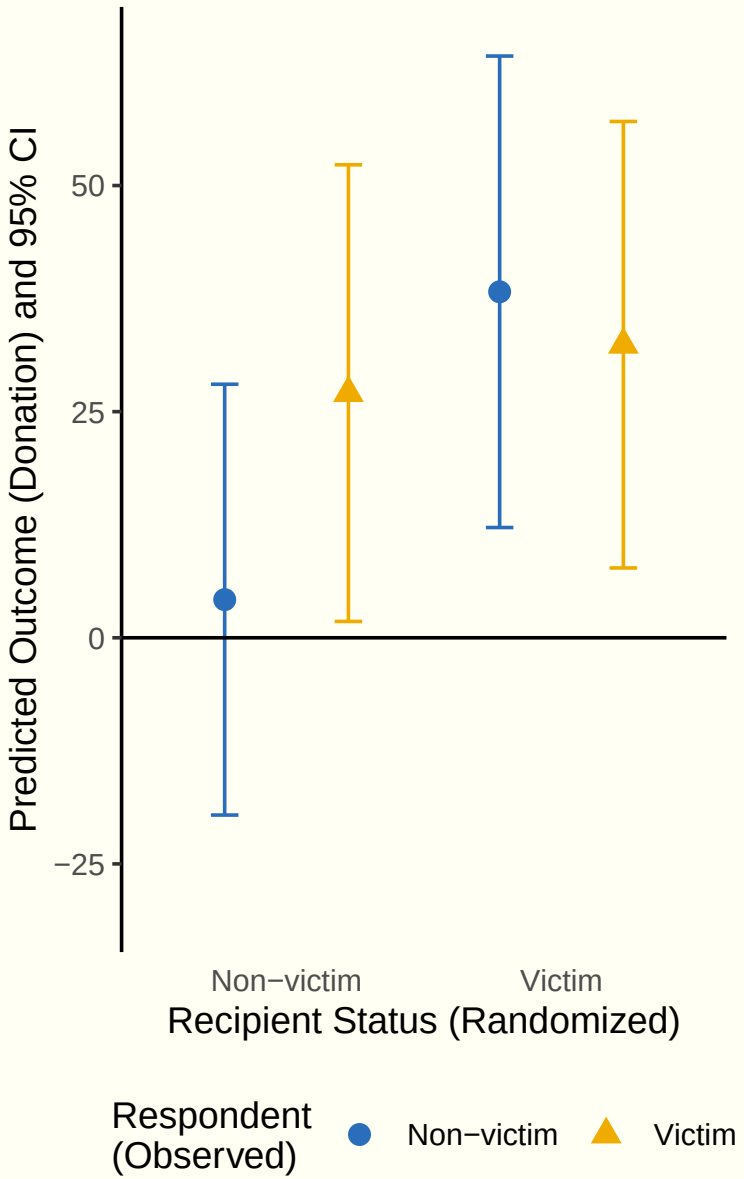
- **"Your pain"** effect: **Recipient** victim status is associated with an increase in donation of VND 18.6K (from 10.7K to 29.3K)
- **"My pain"** effect: **Respondent** victim status is associated with an increase in donation of VND 8.6K (15.4K to 24K)
  - consistent with existing literature
  - yet the association remains statistically indeterminate
- Decision timing (after the survey) is weakly negatively associated with donation amount (23.8K to 16.7K)

Regression Estimates

	Outcome: Donation (in 1,000 VND)					
	(1)	(2)	(3)	(4)	(5)	(6)
Main Effects						
Victim Recipient	18.65^{+}	34.04*	18.71^{+}	27.45*	42.70**	27.75*
("Your Pain")	(10.79)	(15.56)	(10.91)	(10.84)	(13.78)	(11.37)
Decision Timing	−9.71	−9.84	−17.53	−17.97	−14.67	−19.90
(1 if at the end)	(10.89)	(10.71)	(16.01)	(10.57)	(10.22)	(16.76)
Victim Respondent	8.62	22.83	0.81	11.93	34.88^{+}	9.90
("My Pain")	(10.89)	(15.01)	(16.01)	(10.65)	(17.10)	(17.26)
Interaction Effects						
Victim Recipient		− 28.69			− 38.12	
× Victim Respondent		(21.23)			(22.91)	
Decision Timing			14.82			3.59
× Victim Respondent			(22.03)			(23.63)
Demographic Controls				✓	✓	✓
Average outcome	20	20	20	20	20	20
Observations	28	28	28	27	27	27
Adjusted R^2	0.04	0.08	0.02	0.34	0.41	0.30

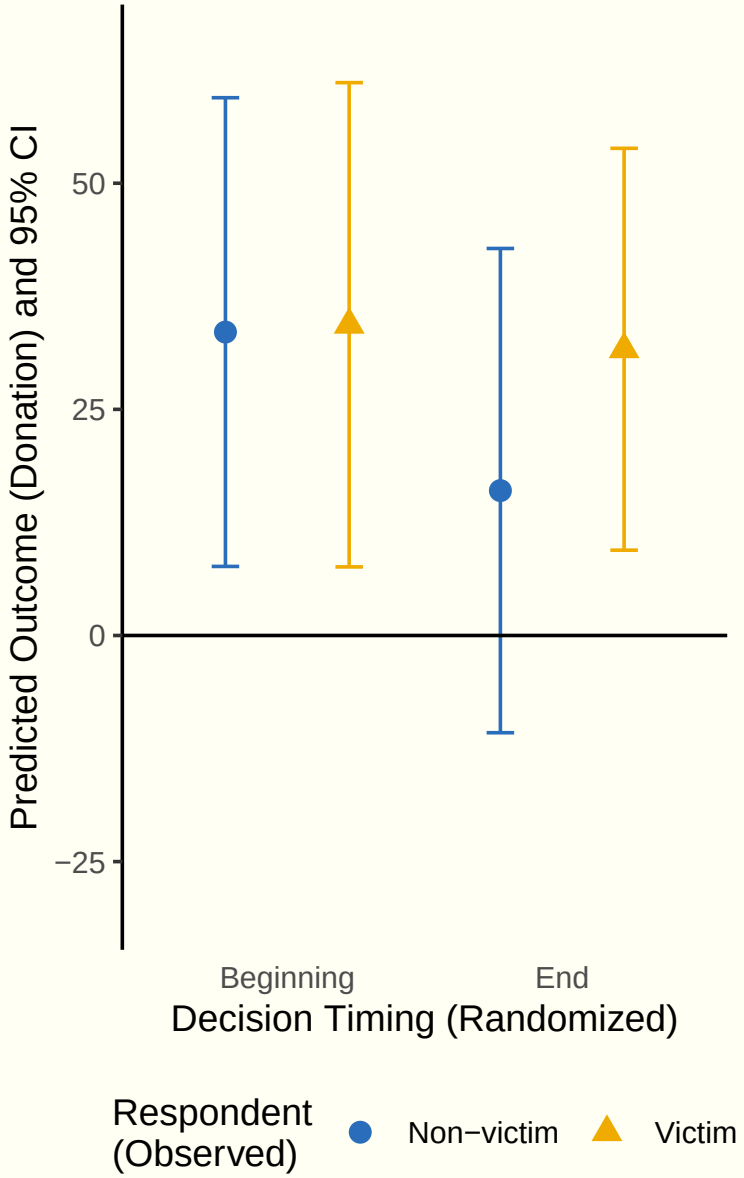
OLS estimates. Standard errors in parentheses. ** $p < 0.01$, * $p < 0.05$, $^{+}$ $p < 0.1$.

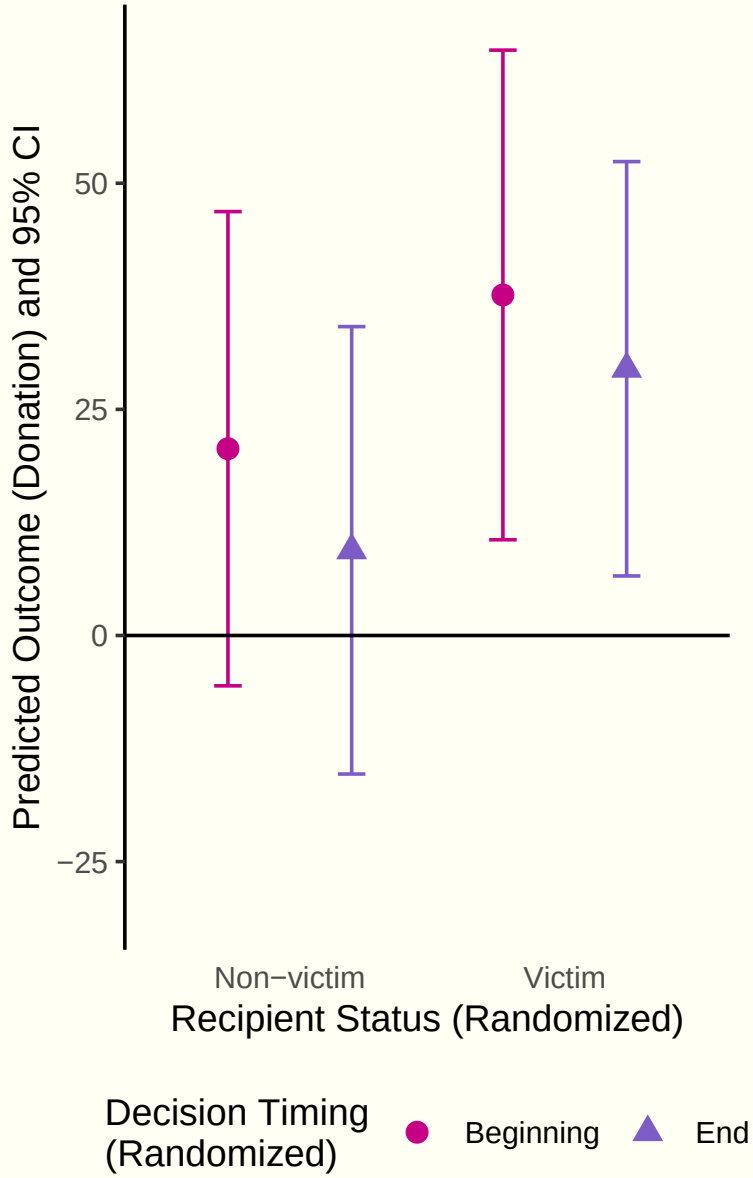
Interaction Effects



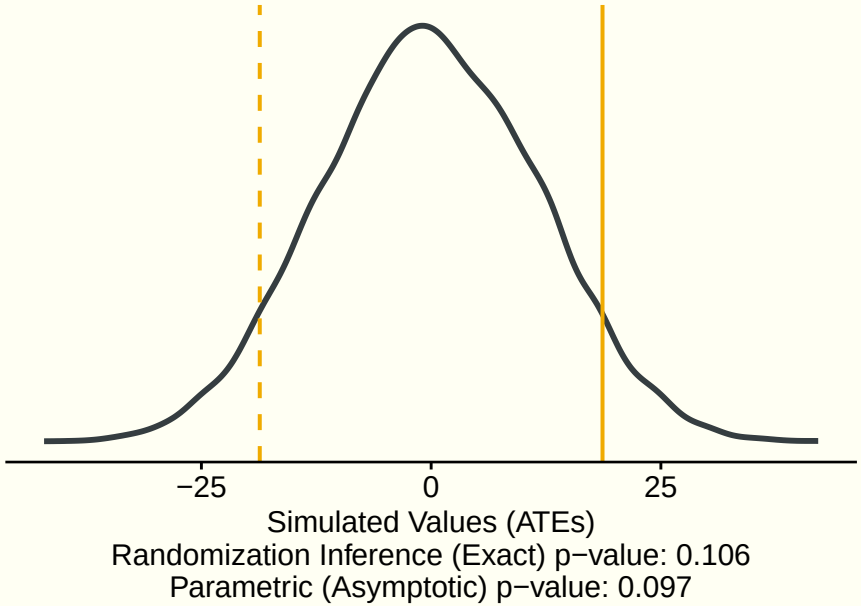
- **Recipient victim status** is associated with an increase in the donation by **non-victim** households (dots)
  - yet the effect is invisible among victim households (triangles)
- **"Your pain"** effect in **non**-victim responses, but not among victims
  - No pain, no altruism?
  - Ceiling effect?
- Other moderation (interaction) effects remain less clear (next slide)
  - almost identical results with the logged outcome (Appendix)

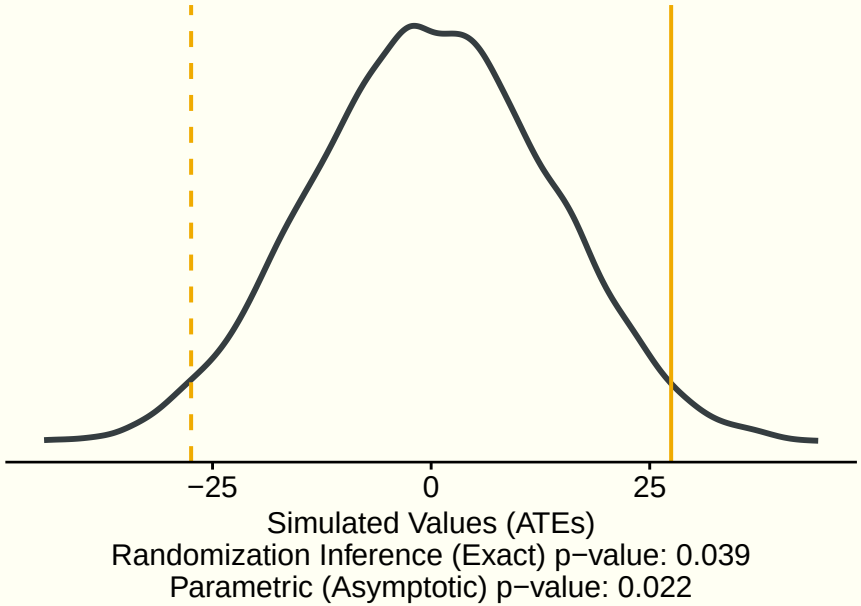
Interaction Effects





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) (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" may also matter in shaping altruism
  - Information stimulus (decision timing) is negatively associated with altruism but remains less effective
- **Dual legacies** of war on **altruism**
  1. **"My pain" effect**: War alters **victim's behavior** by direct damage (e.g., Bauer et al., 2016; Blattman, 2009) and indirect exposure/transmission (e.g., de Juan et al., 2024; Lindsey & Koos, 2024; Lupu & Peisakhin, 2017; Wayne & Zhukov, 2022)
  2. **"Your pain" effect**: War alters **non-victim's behavior**

  ⇝ Previously under-studied legacies of wartime 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 (+ gender, household size)
- Experimental measures
  - Game: Ultimatum game, trust game, and envy game
  - Behavioral: Petition for WMD prohibition or related
  - Attitudinal: Sympathy for wartime violence victims (Hiroshima/Nagasaki/Palestine/Ukraine, etc.) and anti-US sentiments (perpetrator of indiscriminate violence)
- **Mechanisms?** Mediators?
  - causal processes (= indirect effect) and causal interactions (= conditioning effect of a mediator) (Acharya et al., 2018)

Thank You

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Our Another Manuscript

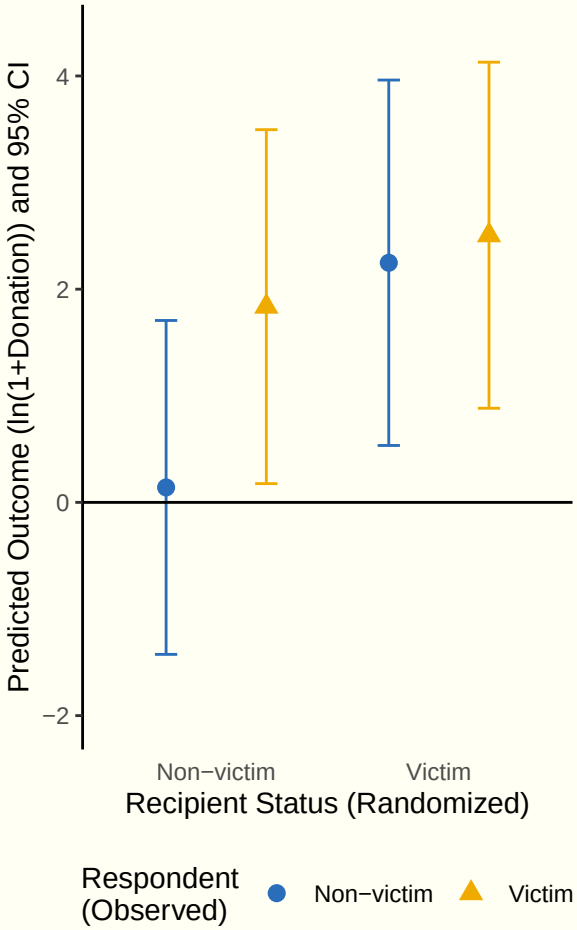
W on the legacies of herbicidal warfare is available at:
https://ssrn.com/abstract=4512129

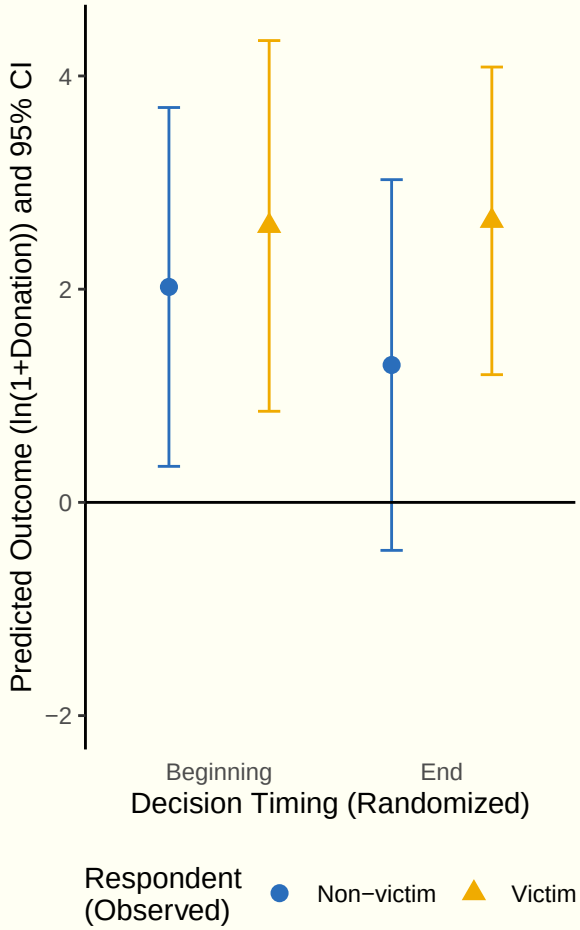
Appendix

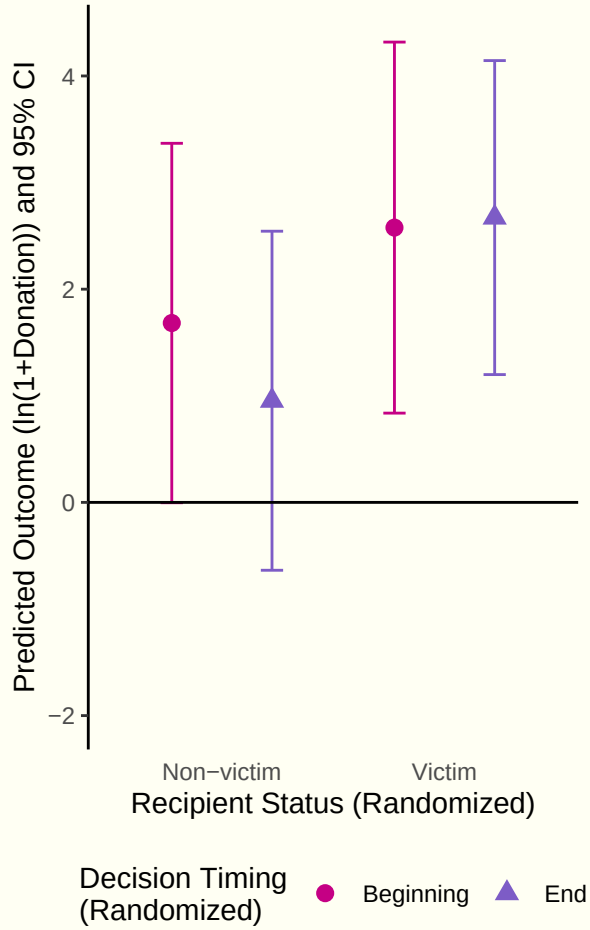
Descriptive Statistics

	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 dummy (1 = yes)	28	0.536	0.508	0	1
Household attributes					
Household size	28	3.357	1.789	1	7
Female household head dummy (1 = yes)	28	0.464	0.508	0	1
Wage income dummy (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 dummy (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)	14	16.714	18.378	5	72
(14 NAs = "for centuries")					
Number of herbicide victims	28	0.821	0.905	0	3
Number of died herbicide victims	28	0.286	0.659	0	3
Serious illness member dummy (1 = yes)	28	0.500	0.509	0	1
Number of seriously ill members	28	0.750	0.887	0	3

Interaction Effect: Logged Outcome

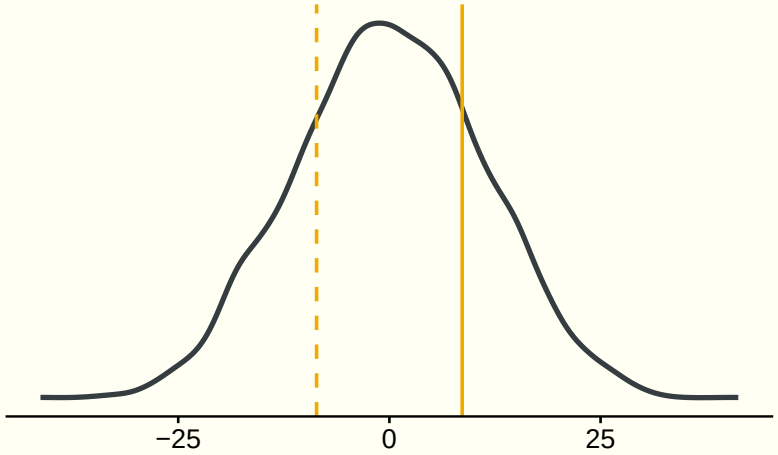






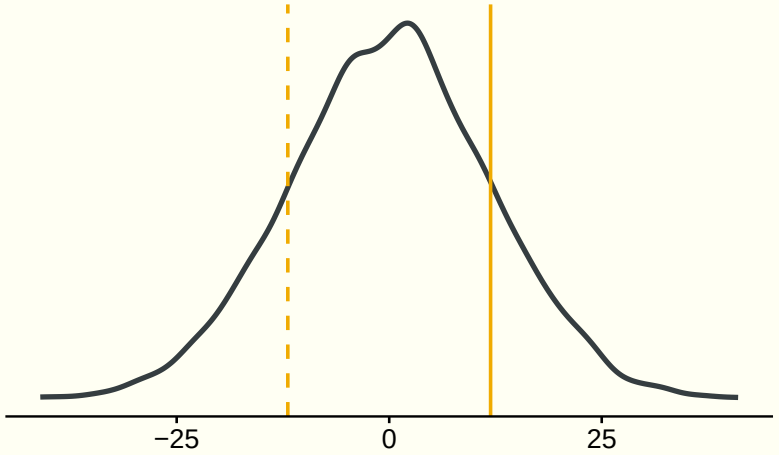
Randomization Inference

Respondent Victim, Model (1)



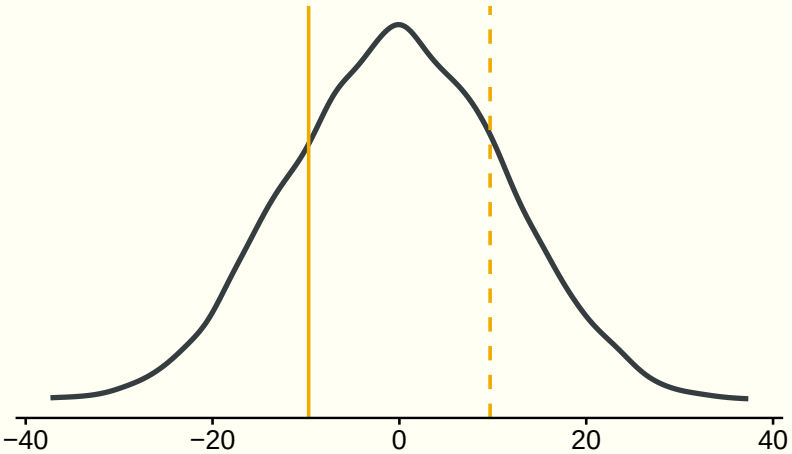
Simulated Values (ATEs)
Randomization Inference (Exact) p−value: 0.457
Parametric (Asymptotic) p−value: 0.436

Respondent Victim, Model (4)



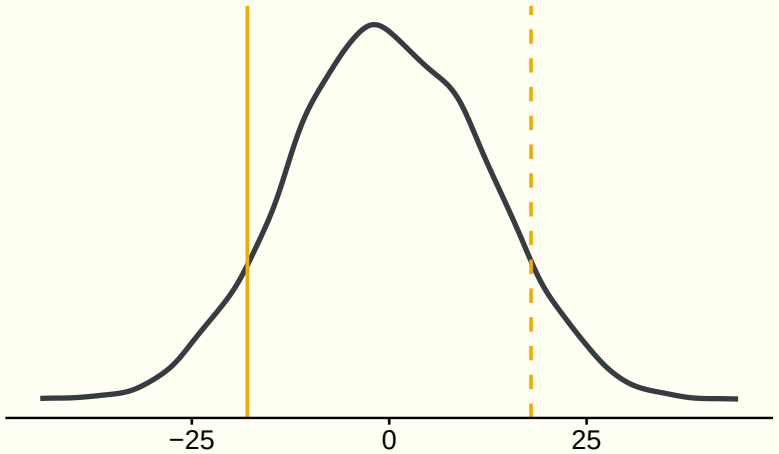
Simulated Values (ATEs)
Randomization Inference (Exact) p−value: 0.311
Parametric (Asymptotic) p−value: 0.279

Decision Timing, Model (1)



Simulated Values (ATEs)
Randomization Inference (Exact) p−value: 0.404
Parametric (Asymptotic) p−value: 0.381

Decision Timing, Model (4)



Simulated Values (ATEs)
Randomization Inference (Exact) p−value: 0.144
Parametric (Asymptotic) p−value: 0.109

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