Online Appendices: Legacies of Wartime Order

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1. Surveys and interviews

The Post-Conflict Attitudes for Peace (PAP) survey was designed by Karin Dyrstad, Kristin M. Bakke, Helga Malmin Binningsbø, and Arne Henning Eide. It was fielded by Perceptive Insight. The interviews were conducted face-to-face on respondents' doorsteps/in their homes, in May–July 2016. The average interview lasted for 40–50 minutes.

The Northern Ireland Postcode Address File provided the sampling frame for a nationally representative sample, stratified by age. Households were drawn at random, and individuals within the household were selected based on the "next birthday" rule. Interviewers informed all potential respondents about the nature of the survey and asked if he or she would be willing to participate. Respondents were assured that the survey was conducted strictly for academic purposes and that all answers were confidential and anonymous, and that they could refuse to answer any questions they did not want to answer or withdraw from the interview at any time. The survey questions were tested in pilots to assess sensitivity and were registered and approved by the Norwegian Data Protection Authority.

Kit Rickard and Kristin M. Bakke conducted fifteen semistructured interviews in Northern Ireland in August 2018. Interviewees included people working in civil society organizations engaged in conflict resolution and restorative justice (some of whom are former members of paramilitary groups); people who live in areas where practices of informal justice happen; and members of the PSNI.

When contacted (via email or phone), potential interviewees were informed about the purpose of the project and assured that their participation was anonymous and confidential, unless they wished to be named in their professional or public capacity. All interviewees were

based on oral informed consent. The data collection was registered and approved with University College London's Data Protection and Ethics Committee (ID 4931/002).

2. Alternative measures for paramilitary groups' social control

Although we are confident that the measure for informal 'justice' from the Troubles in the paper, in-group killings, is the most appropriate, we run the analysis for proposition 1 using two alternative measures:

(1) We geo-code Michael McKeown's dataset of conflict-related deaths during the Troubles.[1] The full dataset includes 3,601 deaths, but we restrict it to those coded as 'enforcement' deaths, as they best capture paramilitary groups' informal 'justice' systems. This is a stricter measure for attacks (N = 106) than our measure of in-group killings. For more information, see Online Appendix 4 below.

(2) Drawing on the mission outline and land force directives of Operation Motorman in 1972, we geo-code streets, estates, and neighborhoods identified by the British Army as no-go

[1] Michael McKeown, "Post-Mortem: An Examination of the Patterns of Politically Associated Violence in Northern Ireland during the Years 1969–2001 as Reflected in the Fatality Figures for Those Years" (Conflict Archive on the Internet, 2009), http://cain.ulst.ac.uk/mckeown/mckeown01.pdf.

areas (N = 48). The mission outline and directive are available at The National Archives of the UK.[2] For more information, see Online Appendix 4 below.

The results of these models support the findings for our key independent variables, except for the Protestant no-go area variable in the negative binomial specification. The no-go area measure is potentially problematic because Operation Motorman targeted predominantly Catholic areas. In the mission outline, it is clear that contact would be made with Loyalist paramilitaries for them to remove the barricades themselves or with help from the army. Therefore, it is likely that the Protestant areas that were controlled by Loyalist paramilitaries are underreported. This may explain why the finding is not statistically significant.

[2] Mission outline by Lieutenant-General Sir Harry Tuzo, "Northern Ireland: Operation Motorman; Military Operations in the Event of a Renewed IRA Campaign of Violence, 1 July 1972–31 July 1972," DEFE70/2501, The National Archives (TNA) of the UK, London, UK.

Table 1: Logistic regression models for paramilitary-style assaults (2016-2018), using 'enforcement' killings as key independent variable.

	Republican assaults	**Loyalist assaults**
Catholic in-group punishment killings (1969-1998)	1.22***	
	(0.33)	
Protestant in-group punishment killings (1969-1998)		0.96***
		(0.27)
Total population	0.30	0.18
	(0.17)	(0.13)
Urban	1.86**	1.03**
	(0.61)	(0.33)
Catholic stronghold	1.91***	
	(0.35)	
Protestant stronghold		1.61***
		(0.26)
Income deprivation rate	14.69***	10.72**
	(4.44)	(3.51)
Violent crime rate	0.02	-0.03
	(0.02)	(0.02)
Anti-social behavior rate	-0.01	0.02**
	(0.01)	(0.01)
AIC	291.34	528.26
Log Likelihood	-137.67	-256.13
Deviance	275.34	512.26
Num. obs.	890	890

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 2: Negative binomial models for paramilitary-style assaults (2016-2018), using 'enforcement' killings as key independent variable.

	Republican Assaults	**Loyalist Assaults**
Catholic in-group punishment killings (1969-1998)	0.88**	
	(0.27)	
Protestant in-group punishment killings (1969-1998)		0.55**
		(0.18)
Total population	0.25	0.17
	(0.15)	(0.12)
Urban	1.59**	0.90**
	(0.52)	(0.31)
Catholic stronghold	2.22***	
	(0.33)	
Protestant stronghold		1.38***
		(0.24)
Income deprivation rate	11.16**	8.23*
	(3.91)	(3.20)
Violent crime rate	0.04*	-0.02
	(0.02)	(0.01)
Anti-social behavior rate	-0.02	0.03***
	(0.01)	(0.01)
AIC	421.76	737.09
Log likelihood	-201.88	-359.54
Deviance	190.02	338.41
Num. obs.	890	890

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 3: Logistic regression models for paramilitary-style assaults (2016-2018), using no-go areas as key independent variable.

	Republican Assaults	**Loyalist Assaults**
Catholic no-go area	1.81***	
	(0.44)	
Protestant no-go area		0.56
		(0.55)
Total population	0.30	0.23
	(0.17)	(0.13)
Urban	1.58**	1.14***
	(0.60)	(0.33)
Catholic stronghold	1.72***	
	(0.36)	
Protestant stronghold		1.69***
		(0.26)
Income deprivation rate	13.78**	12.17***
	(4.53)	(3.41)
Violent crime rate	0.02	-0.03*
	(0.02)	(0.02)
Anti-social behavior rate	-0.01	0.03**
	(0.01)	(0.01)
AIC	288.75	542.22
Log likelihood	-136.37	-263.11
Deviance	272.75	526.22
Num. obs.	890	890

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 4: Negative binomial models for paramilitary-style assaults (2016-2018), using no-go areas as key independent variable.

	Republican Assaults	**Loyalist Assaults**
Catholic no-go area	1.39***	
	(0.35)	
Protestant no-go area		0.74
		(0.48)
Total population	0.27	0.21
	(0.15)	(0.12)
Urban	1.33**	1.01**
	(0.51)	(0.31)
Catholic stronghold	2.06***	
	(0.33)	
Protestant stronghold		1.43***
		(0.25)
Income deprivation rate	8.25*	10.21**
	(3.79)	(3.17)
Violent crime rate	0.04*	-0.03*
	(0.01)	(0.01)
Anti-social behavior rate	-0.01	0.03***
	(0.01)	(0.01)
AIC	416.99	743.17
Log likelihood	-199.50	-362.58
Deviance	195.23	335.20
Num. obs.	890	890

Notes: *** p < 0.001, ** p < 0.01, * p < 0.05.

3. Analysis of geographic persistence

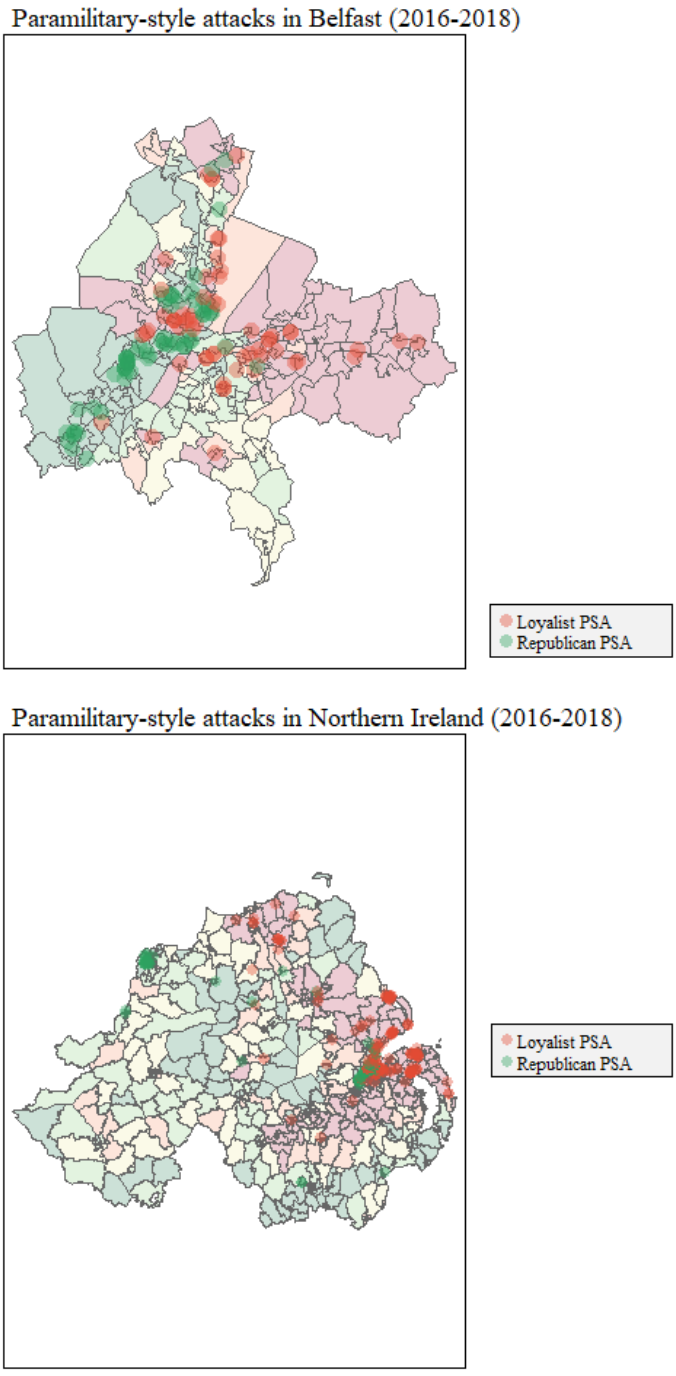

Figure 1: Republican and Loyalist paramilitary-style assaults (2016-2018).

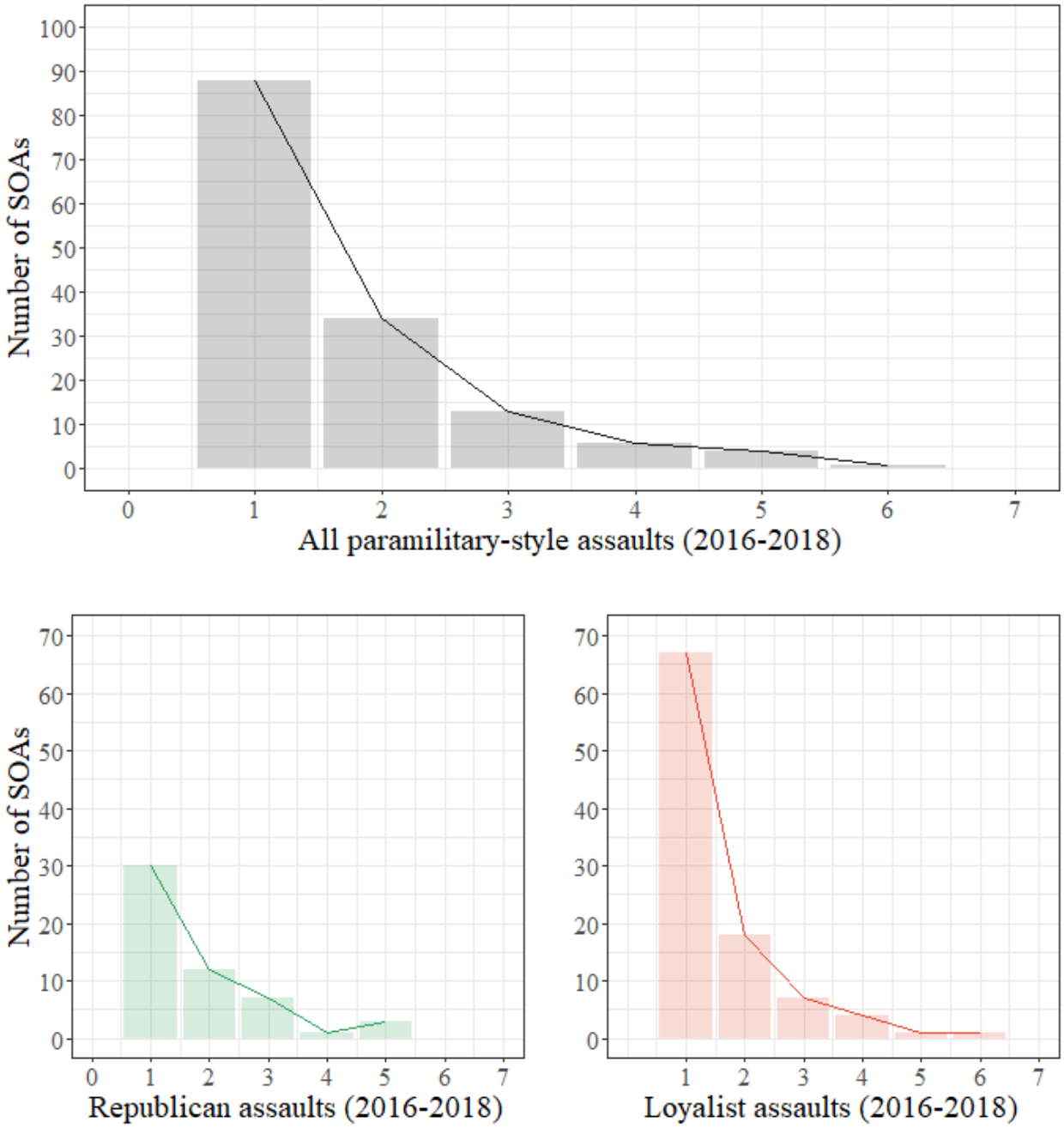

Figure 2: Distribution of dependent variables for the logistical and negative binomial models in tables 1 and 2 in the manuscript.

Key independent variables

Catholic in-group killings (1969-1998)

This is a continuous variable of the number of killings of Catholics by Republican paramilitaries during the Troubles (1969-1998). It is the total number of Catholics who died at the hands of Republican paramilitary groups (IRA, INLA, and "other Nationalists") per super output area (SOA). The data is collected by Malcom Sutton and geo-coded by Neil T. N. Ferguson.[3] We update Ferguson's data to include in-group deaths to 10 April 1998, the signing of the Good Friday Agreement. We first identified in-group deaths in the Sutton Index of Deaths for the extended period (twenty-five deaths), then used the descriptions of each death to determine location. If the exact location was unclear, we consulted news articles from Irish and British media outlets.

Protestant in-group killings (1969-1998)

This is a continuous variable of the number of killings of Protestant by Loyalist paramilitaries during the Troubles (1969-1998). It is the total number of Protestants who died at the hands of Loyalist paramilitary groups (UDA, UVF, UFF, and "other Loyalists") per SOA. The data is

[3] Malcolm Sutton, *Bear in Mind These Dead: Index of Deaths from the Conflict in Ireland, 1969–1993* (Belfast, UK: Beyond the Pale, 1994); Neil T. N. Ferguson, "Just the Two of Us? Civil Conflicts, Pro-State Militants, and the Violence Premium," *Terrorism and Political Violence* 29, no. 2 (2017): 296–322.

collected by Malcom Sutton and geo-coded by Neil T. N. Ferguson.[4]

Control variables

Total population

Total population of SOA from the 2011 Northern Ireland census.

Urban

A binary variable that is 1 if coded as "urban" in "Look-up" tables by the Northern Ireland Statistics and Research Agency (NISRA). The dataset is available here: https://www.nisra.gov.uk/support/geography/northern-ireland-super-output-areas.

Catholic stronghold

A binary variable based on the 2011 Northern Ireland census. SOAs are coded as 1 if proportion of "Catholics" versus "total Christians" is over 0.9 and 0 if the proportion is less than 0.9.

Protestant stronghold

A binary variable based on the 2011 Northern Ireland census. SOAs are coded as 1 if proportion of "Other Christians" versus "total Christians" is over 0.9 and 0 if the proportion is less than 0.9.

[4] Sutton, *Bear in Mind These Dead*; Ferguson, "Just the Two of Us?".

Income deprivation rate

This is a continuous variable from the 2017 Northern Ireland Multiple Deprivation Measures.[5] Collected from April 2015 to March 2016, it is the number of people living in households whose equivalised income is below 60 percent of the Northern Ireland median per SOA. The variable is scaled to improve model interpretability. The dataset is available here: https://www.nisra.gov.uk/statistics/deprivation/northern-ireland-multiple-deprivation-measure-2017-nimdm2017.

Violent crime rate

This is a continuous variable based on the 2017 NIMDM. Collected from 2011 to 2016 by the Police Service Northern Ireland (PSNI), it is the number of violence, sexual offences, robbery and public order offences divided by the "at risk" population (total population plus non-resident workplace population) per SOA. The dataset is available here: https://www.nisra.gov.uk/statistics/deprivation/northern-ireland-multiple-deprivation-measure-2017-nimdm2017.

Anti-social behaviour rate

This is a continuous variable based on the 2017 NIMDM. Collected from 2011 to 2016 by the PSNI, it is the number of anti-social behaviour incidents divided by the "at risk" population (total

[5] NISRA, "Northern Ireland Multiple Deprivation Measures 2017" (Belfast: NISRA, 2017), https://www.nisra.gov.uk/statistics/deprivation/northern-ireland-multiple-deprivation-measure-2017-nimdm2017.

population plus non-resident workplace population) per SOA. The dataset is available here: https://www.nisra.gov.uk/statistics/deprivation/northern-ireland-multiple-deprivation-measure-2017-nimdm2017.

4. Analysis based on survey

Key independent variables

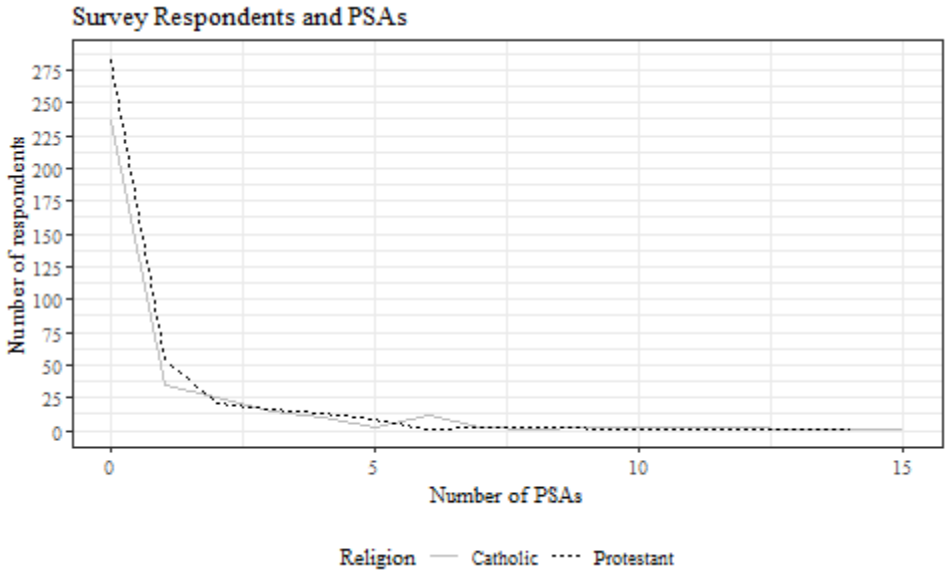

Figure 3: Distribution of survey respondents affected by paramilitary-style attacks in their SOA.

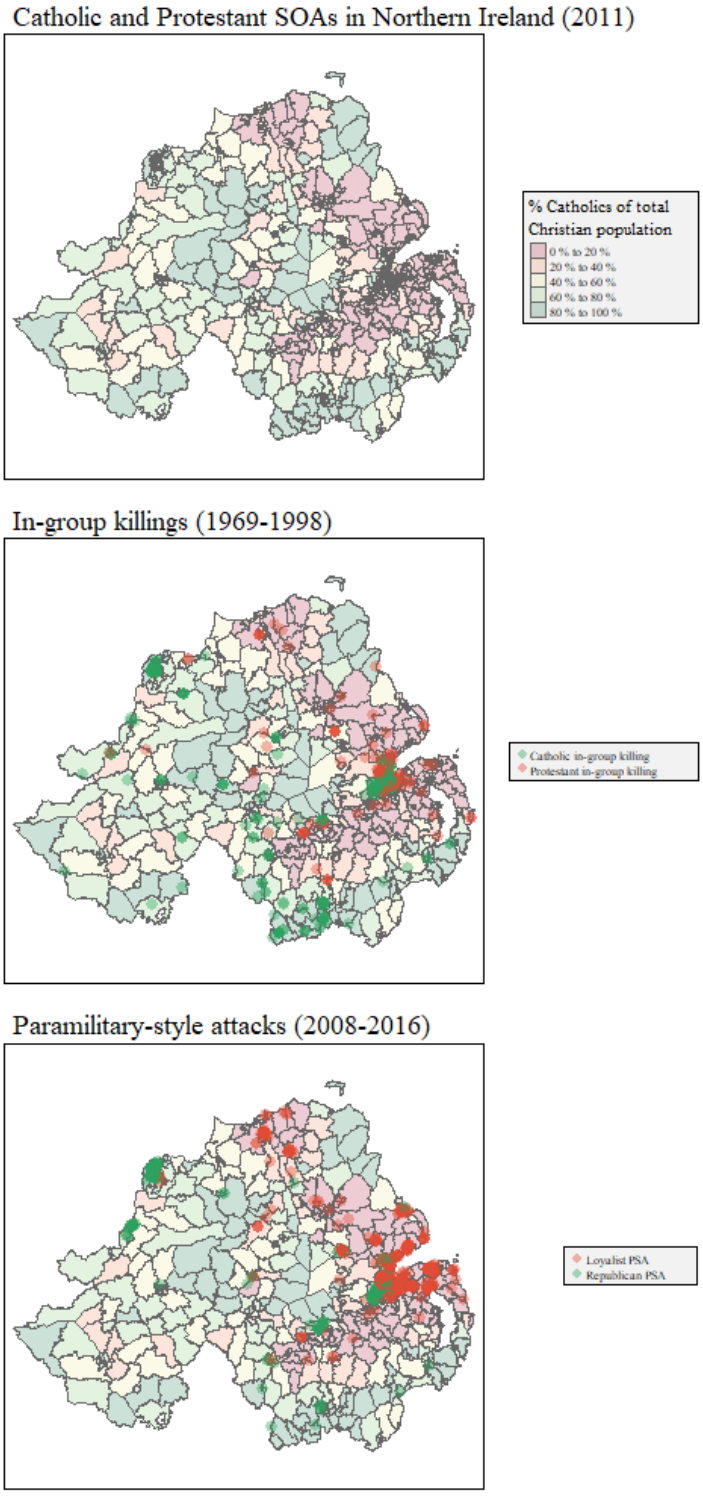

Figure 4: Catholic and Protestant in-group killings during the Troubles and Republican and Loyalist paramilitary-style attacks in the post-war period (2008-2016).

Control variables

General trust

Survey question: *Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?*

The binary variable is coded as 1 if respondent reported "most people can be trusted" (N = 375) or 0 if a respondent reported "need to be very careful" (N = 431).

Trust in neighbourhood

Survey question: *I'd like to ask you how much you trust people from various groups. For each option, could you tell me whether you trust people from this group completely, somewhat, not very much, or not at all?*

Table 5: Trust in "people in your neighbourhood or village"

	All respondents
"Do not trust at all"	1.6%
"Do not trust very much"	6.9%
"Trust somewhat"	63.5%
"Trust completely"	27.4%

The scale was reversed to improve model interpretability, i.e. a higher score means more trust.

Experienced discrimination

Survey question: *Would you describe yourself as being a member of a group that is currently discriminated against or being treated unfairly in Northern Ireland? If yes, on what grounds is your group discriminated against?*

We use a dichotomous variable, scored 1 for respondents who reported being discriminated against on the bases of "religion or community background" and "ethnic group" (N = 104) and 0 if not (N = 707). Community and ethnic background are the most relevant forms of discrimination for the purposes of our analysis. The 0 category includes respondents who experienced no discrimination or were discriminated based on other characteristics, such as gender or disability.

Victim of state violence (1968-1998)

This is a binary variable constructed from the following two questions:

Survey Question: *Disregarding events like accidents, did you experience any of the following events during "the Troubles" /the conflict? Were you / did you (have)…*

(3) Displaced

(4) Goods/property stolen

(5) House destroyed

(6) Threatened with violence or death

(7) Arbitrarily detained [detained without reason]

(8) Attacked, beaten, tortured, or otherwise injured

(9) Forced to commit violence

(10) Victim of sexual violence

(11) Disabled as a consequence of violence or injuries

(12) Witnessed violence

(13) Family member displaced

(14) Family member injured

(15) Family member killed

(16) Family member forcibly disappeared

(17) Family member arbitrarily detained [detained without reason]

Survey question: *Who did this to you?*

(18) The British Armed Forces

(19) Royal Ulster Constabulary

(20) Northern Ireland Prison Service

(21) The Provisional Irish Republican Army (IRA)

(22) The Official IRA (OIRA)

(23) The Irish National Liberation Army (INLA)

(24) Ulster Volunteer Force (UVF)

(25) Ulster Defense Association (UDA)

(26) Criminals or criminal groups

(27) Family member or acquaintance

(28) Other

The binary variable is coded as 1 if respondents reported being a victim of any type of violence (4-9 for Q1) and if respondents reported that the perpetrator was state forces (1-3 for Q2) (*N* = 53). The variable respondents answered anything else they are coded as 0 (*N* = 758).

Community stronghold (SOA level)

As described above (Online Appendix 2).

Income deprivation (SOA level)

As described above (Online Appendix 2).

Urban (SOA level)

As described above (Online Appendix 2).

5. Further information on robustness tests

Proposition 1: Geographic persistence

Restricting McKeon's dataset

We geo-code Michael McKeown's dataset of conflict-related deaths during the Troubles.[6] The full dataset includes 3,601 deaths, but we restrict it to those coded as "enforcement" as they best capture paramilitary groups' informal 'justice' systems: attacks "directed against individuals who it was alleged were engaged in criminal and anti-social behaviour in a local milieu."[7] Using the detailed accounts of each killing in *Lost Lives*,[8] we geo-coded the location of each killing to present-day geographic units. The location of the killing is either the place where it occurred or body was found, or the address of the victim if the victim was abducted and killed far from their home. In total, our data includes 106 intra-communal punishment killings between 1969 and 1998.

Michael McKeown's dataset is an incredibly detailed and valuable resource. However, the coding of "enforcement" killings did not always match up with the stories in *Lost Lives*. We did

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[6] Michael McKeown, "Post-Mortem: An Examination of the Patterns of Politically Associated Violence in Northern Ireland during the Years 1969–2001 as Reflected in the Fatality Figures for Those Years" (Conflict Archive on the Internet, 2009), http://cain.ulst.ac.uk/mckeown/mckeown01.pdf.

[7] McKeown, "Post-Mortem", 9.

[8] David McKittrick, Seamus Kelters, Brian Feeney, Chris Thornton, and David McVea. *Lost Lives: The Stories of the Men, Women and Children who Died as a Eesult of the Northern Ireland Troubles*. Random House, 2001.

not check all deaths, but of 132 killings that were coded as enforcement, 24 were doubtful. We suspect that some punishment killings are also under-reported and captured in the other categories in the dataset, such as "intimidation" (N = 72), "retaliation" (N = 179), "internal security" (N = 104), "victimisation" (N = 62) and "reprisal" (N = 32).

For example, in 1972 Jean Smith was shot dead by a sniper while travelling in car at bus terminus, Glen Road, Andersonstown, Belfast. 17-year-old Joseph Adair died in 1973. He was in a pub with his best friend. Adair's friend, "half canned" (drunk), accidently shot him in the head when Adair asked to see the gun. We do not believe that these deaths were "enforcement" killings. Others were clearly the result of feuding between armed actors.

Despite these examples, much of the coding seems correct. For example, Sean McAstocker was from the Falls area, Belfast. In 1974, the Provisional IRA disciplined him by "shooting him in the foot," but two weeks later a Republican kangaroo court decided that he should be killed for attacking a young girl.[9] His body was found in the Markets area of Belfast. In 1970, UDA members broke into David Murray's house in the predominately Protestant Shankill, Belfast. He was shot in the chest and killed for alleged antisocial behaviour, having "been the subject of numerous complaints from the immediate neighbourhood."[10] In 1974, Daniel Harkin was found dead in his back garden in Strabane. Two hooded men broke into his home, beat him, and threw him out of the first-floor window. His death was the likely result of a "punishment beating".[11] In

[9] McKittrick et al, *Lost Lives*, 433.

[10] McKittrick et al, *Lost Lives*, 57.

[11] McKittrick et al, *Lost Lives*, 465.

1982, the IRA "punishment squad" broke into Colm Carey's home in a predominantly Catholic area of Derry. According to an orthopaedic surgeon:

> He died even before the ambulance arrived. His attackers couldn't find a pistol so they used a rifle instead. It blew off one of his legs completely and left the other one barely hanging on. The men panicked and ran off. An ambulance wasn't called for an hour and the victim bled to death on the street.[12]

In 1997, David Templeton, a Presbyterian minister, became known as the "gay porn cleric" after he was stopped by customs returning from Amsterdam with gay pornographic video. He died six weeks after a group of masked UVF members armed with studded wooden clubs broke into his home in the predominantly protestant area of Newtownabbey.[13] In 1998, Andrew Kearney, from the predominantly Catholic area of New Lodge in North Belfast, had a reputation for getting into fights. His mother approached the IRA to get threats against him lifted, but one night he was taken to the elevator in the tower block where he lived with his girlfriend and new-born, and he was shot in both knees and one ankle. He was taken to hospital but died on the way in the ambulance.[14]

These are all examples of the type of social control that we wish to measure. Future work should use both resources to cross-check each of the 3,601 deaths in *Lost Lives*, thus increasing the

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[12] McKittrick et al, *Lost Lives*, 907.

[13] McKittrick et al, *Lost Lives*, 1405.

[14] McKittrick et al, *Lost Lives*, 1436.

validity of these specific variables.

The no-go areas of Operation Motorman (1972)

Drawing on the mission outline and land force directives of Operation Motorman in 1972, we geo-code streets, estates, and neighbourhoods identified by the British Army as no-go areas. The mission outline and directive are available at The National Archives of the UK.[15]

Estates are linked to present-day SOAs by first identifying their present-day location on google maps. From google maps, we identify their postal code. Finally, the postal code is matched to the SOA using Doogal.co.uk.[16] This works well in smaller towns, where SOAs are relatively large and streets can be easily matched to SOAs. For example, Obin Street is matched to Corcrain_1 (95LL08S1) and Corcrain_2 (95LL08S2) in Portadown.

In urban areas, the British Army sometimes identified entire neighbourhoods (such as Ardoyne) and sometimes referred to specific estates and streets. Estates and streets were first matched to neighbourhoods, and then neighbourhood names were used to match with present-day SOAs (sometimes more than one but never more than three). For example, Westrock and Turf lodge are

[15] Mission outline by Lieutenant-General Sir Harry Tuzo, "Northern Ireland: Operation Motorman; Military Operations in the Event of a Renewed IRA Campaign of Violence, 1 July 1972–31 July 1972," DEFE70/2501, The National Archives (TNA) of the UK, London, UK.

[16] Google maps is available here: https://www.google.com/maps. Doogal is available here: https://www.doogal.co.uk/.

both in Whiterock in Belfast. We use the word 'Whiterock' to fuzzy join these estates with SOAs that have Whiterock in their SOA label.[17] This means that they are matched to Whiterock_1 (95GG48S1), Whiterock_2 (95GG48S2), and Whiterock_3 (95GG48S3). In the same way, Unity Flats and Newington St were matched to New Lodge_1 (95GG35S1), New Lodge_2 (95GG35S2), and New Lodge_3 (95GG35S3).

In some instances, entire villages or towns were mentioned, such as Castlewellan, Coalisland, and Dungannon. These were not coded in the dataset, as it was not possible to identify the exact neighbourhood or areas.

The areas mentioned were in the archived materials were (in alphabetical order):

Ballymurphy	Unity flats
Beechmount Ave	Watson St
Clonard Gardens	Westrock
Derrybeg Estate	Andersonstown
Divis	Ardoyne
Drumarg Estate	Ballymacarrett
Gransha Ave	Ballynafeigh
Kilwilkier Estate	Bogside
Lenadoon Ave	Brandywell

[17] This was conducted using the 'fuzzyjoin' package in R. It allows users to join tables together based not on whether columns match exactly, but whether they are similar by some comparison. In our case, strings contain similar expressions.

Markets	Creggan
New Barnsley	Gobnascale
Newington St	Ligoniel
Obin St	New Lodge
Ramoan Gardens	Orangefield
Riverdale	Rosemount
Sandy Row	Shankill
Shankil estate	Shatallow
St James Rd	Waterside
The Bone	Woodvale
Turf Lodge	

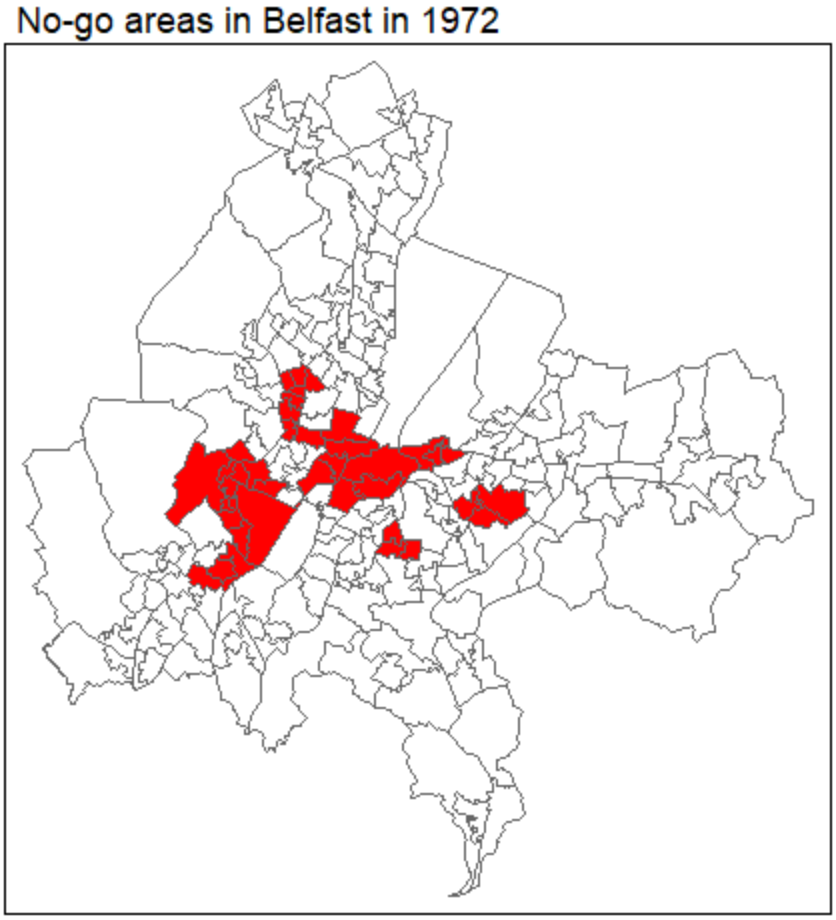

Figure 5: Map of no-go areas in Belfast based on coding of archival evidence.