Intergroup Violence and Political Attitudes: Evidence from a Dividing Sudan

— Online Appendix —

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A.1 Further information about the Black Monday riots

More than seven years after its outbreak, vivid descriptions of the Black Monday riots continue to surface in the popular press in Sudan. In April 2012, a journalist writing for the daily newspaper *Sudan Vision* described being haunted by memories of the "worst wave of racial violence" he had ever witnessed: "On Black Monday, a group of South Sudanese young men captured three Northerners in a cotton store after pouring benzene on cotton sacks, and setting them on fire. The flames crashed the roof and reached more than five meters. The smoke was getting higher for the whole day!"[1]

In the lead-up to the referendum, the events of "Black Monday" became a rallying cry for some Northern elites, especially Al-Tayeb Mustafa (the uncle of Sudan's President Omar al-Bashir and owner of one of the most widely read newspapers in Khartoum, Al-Intibaha), who regularly invoked the riots as evidence that Northerners and Southerners could not live together. In an interview with one of the authors, Mustafa described Black Monday as "another Torit mutiny" (referring to the first acts of revolt by Southerners against the central government when Southern soldiers mutinied in 1955, the year before Sudanese independence) and evidence that "fifty years after the mutiny Southern hatred for the North has not decreased. Instead war is now breaking out in the [capital]."[2] In the wake of partition, Mustafa celebrated the South's secession for creating a "more homogeneous" country with people living in "greater harmony." Even as Sudan's economy began to deteriorate and fighting gripped its periphery, Mustafa rejoiced at what he described as "the best time since independence in Sudan." Elite attempts to use Black Monday to promote a Northern ideology of separation suggest that the 2005 riots continued to loom large in the public consciousness five years after the events.

[1] *Sudan Vision*, "Public Anger and the Worst Scenario," April 13, 2012.
[2] Interview in Khartoum, January 2012.

A.2 Additional information about sampling procedures

Sampling proceeded as follows. We first randomly sampled a set of five administrative units, which we stratified by dominant region of origin. For each AU, we obtained an estimate of which group dominates from 24 individual assessments made by locally knowledgeable research assistants. In a given AU, we considered a group dominant if (a) it has a plurality in a given AU, and (b) constitutes at least one-third of the population in that AU. If no group makes up at least one-third of the population, the AU was coded as mixed. AUs were grouped in five strata (North-Central, Darfur, Nuba, South, and mixed), and we selected one AU from each stratum, with selection probabilities proportional to AU population shares.

Second, we sampled 62 popular administrative units (PAUs), which we stratified by wealth and dominant region of origin within each AU. We only make inferences about areas under PAU administration, which excludes certain refugee camps under the supervision of the Humanitarian Affairs Commission (HAC). We oversampled PAUs where Darfurians, Nuba, or Southerners dominate, and otherwise allocated sampling units in proportion to stratum size. Figure A.1 highlights sampled PAUs in Haj Yousif, an administrative unit in which Southerners dominate.

Third, we randomly sampled households within PAUs by drawing target coordinates that were then found by GPS-equipped enumerators in the field. Fourth, enumerators asked the head of each sampled household to construct a roster of adult household members, and individual respondents were sampled from this roster. Figure A.2 shows an example of coordinates drawn in Al Shigla Central in Haj Yousif. Sampling points beginning with S had to be visited by enumerators, while replacement points begin with R and were visited if a sampled household declined participation.

Table A.1 shows the distribution of our sample across self-reported regions of origin and illustrates the extent to which we oversampled Southerners, Darfurians, and Nuba. For each listed region of origin, we indicate the group's sample size and share of the total sample as well as the group's estimated population share and size in greater Khartoum.

	Sample size	Share of sample	Estimated population share	Estimated population (in million)
North-Central	491	36%	61%	2.55
Darfur	191	14%	9%	.38
Nuba Mountains	258	19%	7%	.30
Kordofan	141	10%	10%	.40
South	205	15%	6%	.23
East	54	4%	4%	.17
Other	35	3%	4%	.16

Table A.1: Sample and population shares by region of origin

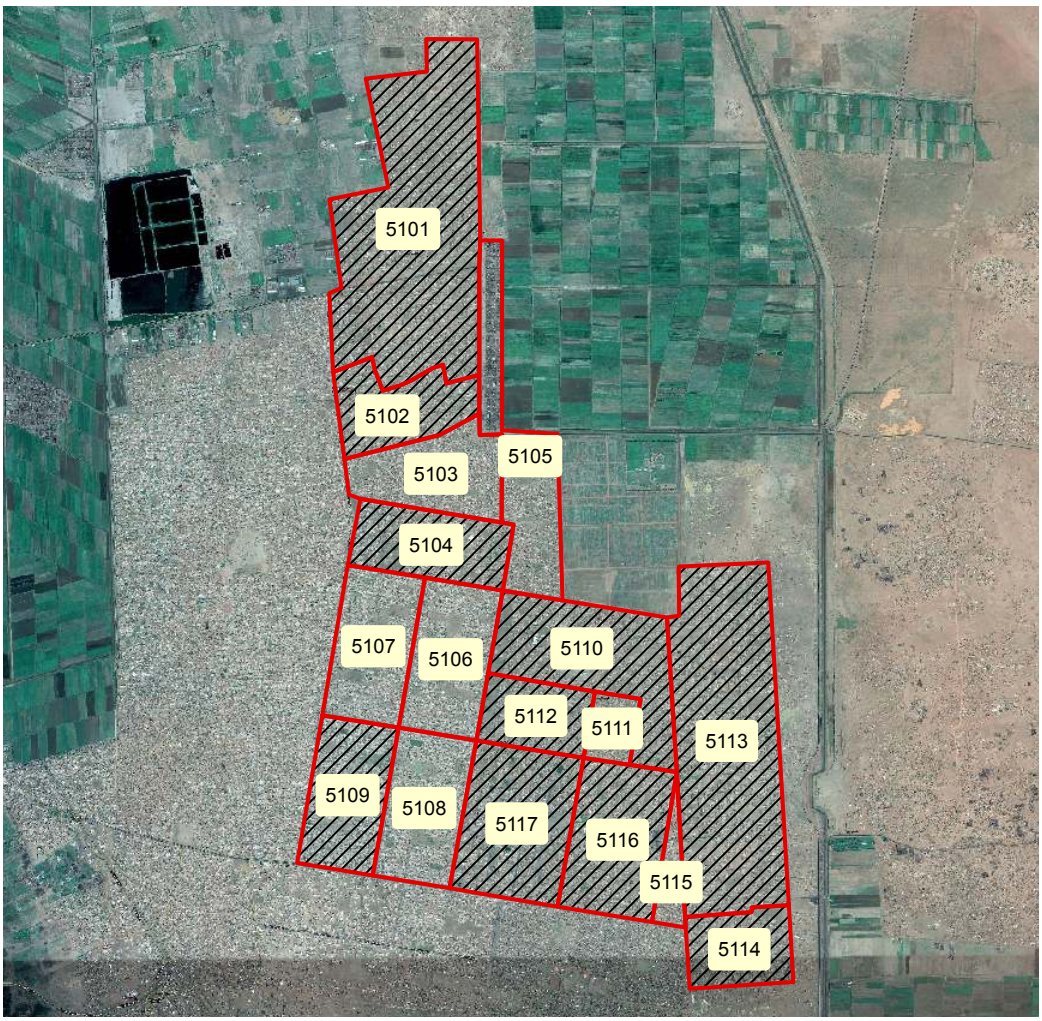

Figure A.1: Popular administrative units in Haj Yousif (sampled PAUs in black)

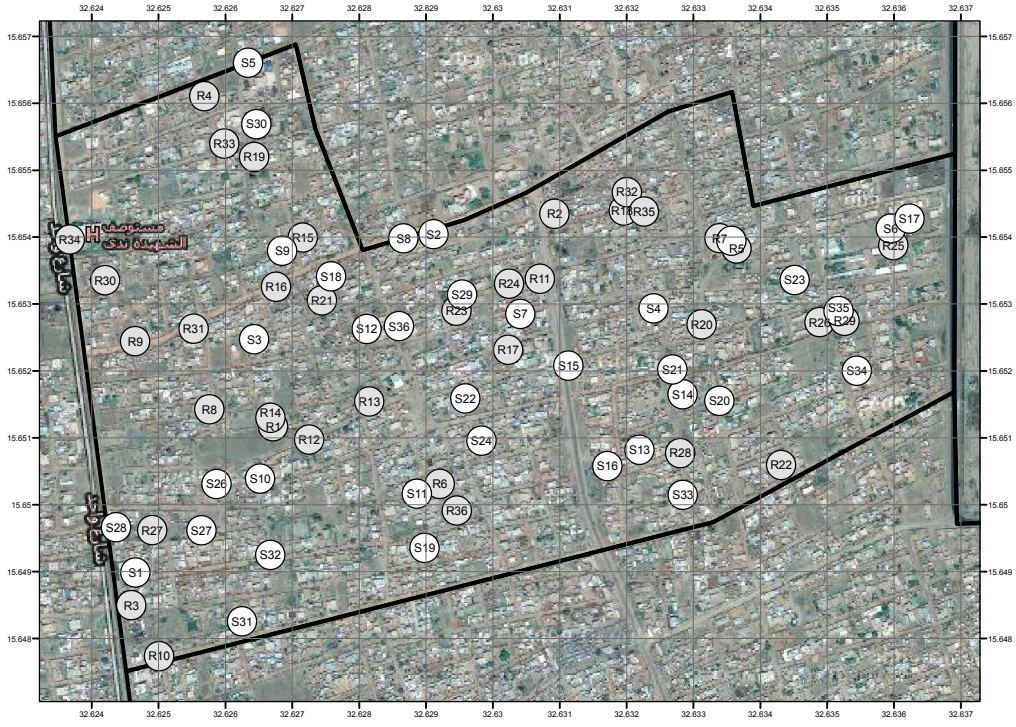

Figure A.2: GPS-driven sampling within a popular administrative unit

A.3 Economic concerns and the effect of riot exposure

While riot exposure has a robust positive and substantively as well as statistically significant effect on support for separation, proponents of the notion that economic costs and benefits drive the demand for partition might object that this result reflects the opinions of Northerners who either have little to lose economically as partition unfolds or who are for other reasons unconcerned about partition's economic repercussions, perhaps because Khartoum residents have long been insulated from the hardships experienced by Sudan's periphery. Table A.2 shows that our data is inconsistent with this logic. First, models (1) to (3) show that the effect of riot exposure on support for partition persists if we separate respondents by employment status. Unemployed individuals, those who are not unemployed (i.e. who are either working or not participating in the labor force), and those who are working are all responsive to riot exposure, even though they presumably differ in their sensitivity to changes in economic conditions.

Second, models (4) to (6) take advantage of the fact that we asked respondents what they believed the effect of partition on their personal economic status would be. If concerns about economic costs did in fact override the effect of riot exposure, we should be able to locate the effect of riot exposure only among those who are optimistic about the economic impact of partition. The opposite is the case: We find a correlation between riot exposure and opinions on partition for those who think partition will either have a negative or no effect on their economic status. In the eyes of these respondents, partition may be economically costly but the specter of violence in their neighborhoods makes it nevertheless worthwhile. Conversely, we find no effect of riot exposure on support for separation in the sample of respondents who are optimistic and think partition will have a positive effect on their economic status, because they are substantially more likely to favor partition with or without riot exposure: 32% of those optimistic about economic effects favor separation, compared to 9% of those who are pessimistic. Riot exposure thus appears to sway those who might otherwise be predisposed to oppose partition.

Probit model			
Dependent variable: Support separation			
	(1)	(2)	(3)
Fighting in neighborhood	.625	.785	.997
	(.297) **	(.272) ***	(.395) **
Observations	303	535	321
Sample	Unemployed	Not unemployed	Working
	(4)	(5)	(6)
Fighting in neighborhood	.761	1.290	.041
	(.313) **	(.328) ***	(.425)
Observations	316	177	117
Sample	Pessimistic	Neutral	Optimistic
Models include gender, age, logged years of education, logged years of father's education, and AU and region of origin indicators. Models (4)–(6) also include employment and self-employment indicators, asset index, and relative wealth. *** significant at the 99% level, ** 95% level.			

Table A.2: Economic indicators and the effect of riot exposure on support for separation

A.4 Sensitivity analysis

Figure A.3 shows results from a sensitivity analysis that quantifies the extent to which the effect of riot exposure on support for separation is robust to the presence of unobservable confounding variables. We repeatedly simulate a potential confounder, include it in our model, and reestimate the relevant coefficients and standard errors. Each circle or triangle represents a simulated variable, where its correlation with riot exposure is shown on the horizontal axis and its correlation with support for separation on the vertical axis. The simulated regressor is included in baseline model (5) from Table 1, and we plot a circle if the reestimated effect of riot exposure continues to be positive and statistically significant at the 95% level, and a triangle otherwise.

Not surprisingly, we need not worry about any unobserved confounder that is positively correlated with either the potentially endogenous regressor or the outcome and negatively correlated with the other, because such an omitted variable would bias us against finding a positive effect of riot exposure. But the sensitivity analysis shows that we should be concerned about spuriousness if the correlations between the omitted variable on the one hand and our dependent and independent variables of interest on the other hand have the same sign and are substantial, with a correlation coefficient of roughly .2 or higher.

It seems unlikely that such a confounder exists. For comparison's sake, Figure A.3 plots a number of crosses to indicate the relevant correlations for all of the control variables included in the baseline model. None of the correlations reach a level at which we would need to be concerned if we had failed to observe and condition on one of these variables. Noise in our data does not appear to be solely or even primarily responsible for these relatively low correlations, since we do observe high correlations involving the same variables, for example between father's education and a respondent's own education. In any case, if our data was particularly noisy, this should bias us against finding statistically significant results.

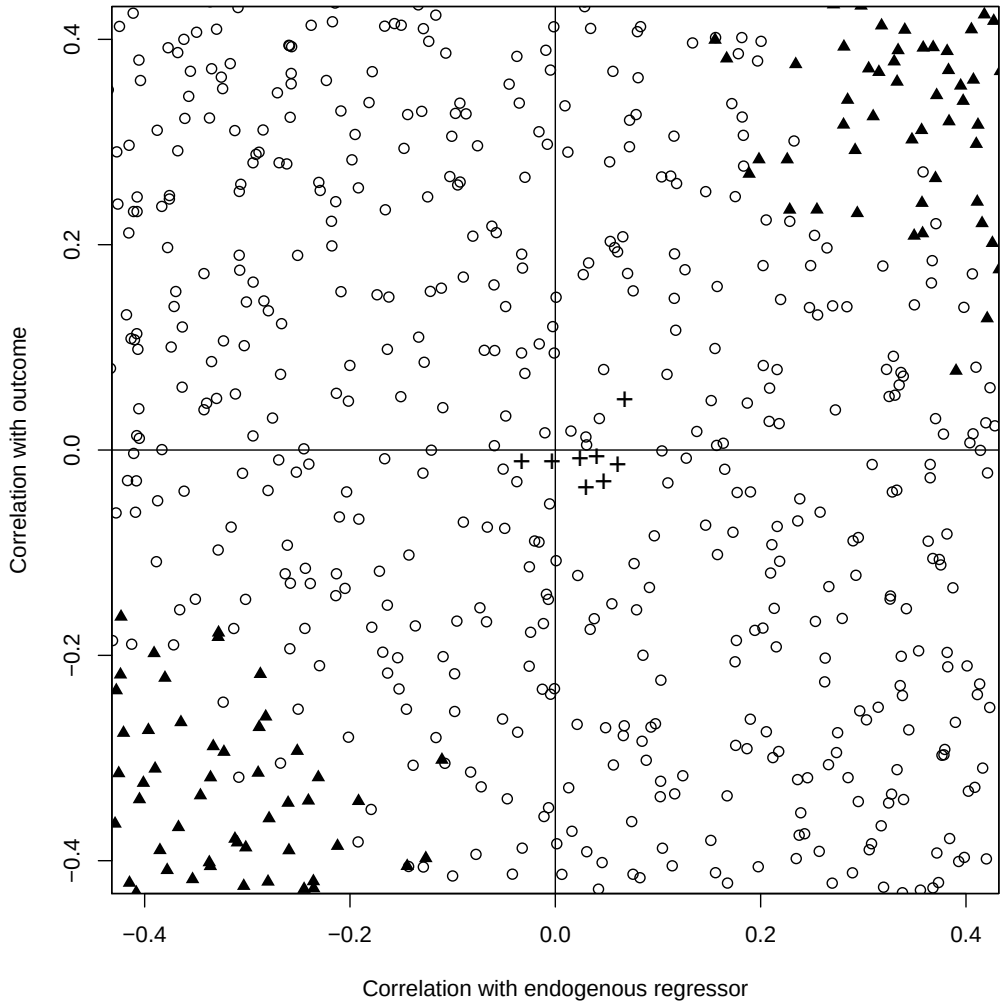

Figure A.3: Sensitivity analysis

A.5 Survey items

Below we provide the exact wording of questions and response options analyzed in the paper. We list questions approximately in the order in which they are referred to in the article, but list those used to construct outcome variables first, those used for explanatory variables of interest second, and end with questions used for control variables. For all questions, subjects were provided with the option to respond that they "don't know" or "don't want to answer this question," in addition to the response options listed below.

Question identifier:	D4
Question text:	Do you support unity of North and South Sudan or separation for South Sudan?
Response options:	• Unity • Separation
Question identifier:	D9
Question text:	If the South separates, do you think Southerners living in the North should be allowed to retain their Sudanese nationality?
Response options:	• Yes • No
Question identifier:	D14
Question text:	If the South separates, do you think this will have a positive, negative or no effect on your economic status?
Response options:	• Positive • Negative • No effect
Question identifier:	D15
Question text:	If the South separates, do you think this will have a positive, negative or no effect on your physical security?
Response options:	• Positive • Negative • No effect
Question identifier:	D10
Question text:	If the South separates, do you think other regions will call for self-determination?
Response options:	• Yes • No
Question identifier:	D6
Question text:	If the South separates, do you think separation will help to maintain peace in North Sudan?
Response options:	• Yes • No

Table A.3: Question wording for outcome variables

Question identifier:	E4
Question text:	Was there any fighting in your neighborhood during the August 2005 riots in Khartoum?
Response options:	• Yes • No
Question identifier:	EN14
Question text:	In what ways were you personally directly affected by the August 2005 riots? [Tick all that apply.]
Response options:	• Not directly • Physical injury • Physical injury to family member(s) or friend(s) • Death of family member(s) or friend(s) • Displacement • Separated from family member(s) or friends • Loss of job • Damage or loss of property • Intimidation/threats • Destruction of friendships • Other [specify]
Question identifier:	E1
Question text:	In what ways have you personally been directly affected by war in the South? [Tick all that apply.]
Response options:	• Not directly • Physical injury • Physical injury to family member(s) or friend(s) • Death of family member(s) or friend(s) • Displacement • Separated from family member(s) or friends • Loss of job • Loss of business • Loss of property • Other [specify]
Question identifier:	E2
Question text:	In what ways have you personally been directly affected by the war in Darfur? [Tick all that apply.]
Response options:	[Same as for E1]

Table A.4: Question wording for explanatory variables of interest

Question identifier:	X7
Question text:	[Interviewer observation: What is the respondent's gender?]
Response options:	• Male • Female
Question identifier:	A10
Question text:	How old were you at your last birthday?
Response options:	[Open-ended]
Question identifier:	A15
Question text:	What region are you from?
Response options:	• North-Central • Darfur • Nuba Mountains • Kordofan • South • East • Other [specify]
Question identifier:	A22
Question text:	What is your tribe?
Response options:	[Open-ended]
Question identifier:	A48
Question text:	Are you currently working full-time, part-time, or are you not working?
Response options:	• Full-time • Part-time • Not working

Table A.5: Question wording for control variables

Question identifier:	A47
Question text:	What is your current occupation? [Do not prompt.]
Response options:	• Self-employed: Farmer • Self-employed: Trader/hawker • Self-employed: Professional (mechanic, carpenter) • Self-employed: Businessman/woman • Self-employed: Other [specify] • Private sector: Employee (e.g., in company) • Private sector: Unskilled labor • Private sector: Other [specify] • Government employee • Unemployed • Pensioner • Student • Other [specify]
Question identifier:	B5
Question text:	Does the household or any member of the household own or have these items?
Response options:	Electricity: • Yes • No Refrigerator: • Yes • No Radio: • Yes • No Television: • Yes • No Mobile phone: • Yes • No Non-Mobile phone: • Yes • No Computer: • Yes • No Internet: • Yes • No Satellite dish: • Yes • No Mattress: • Yes • No Bicycle: • Yes • No Motorcycle or scooter: • Yes • No Animal-drawn cart: • Yes • No Car or truck: • Yes • No
Question identifier:	B18
Question text:	How wealthy do you consider your household compared to other households in your neighborhood?
Response options:	• Poor • Below average • Above average • Rich

Table A.6: Question wording for control variables (ctd.)

Question identifier:	A39
Question text:	What is the highest grade-level of education you have completed up to now?
Response options:	• P1 • P2 • P3 • P4 • P5 • P6 • P7 • P7 (or JS1) • P8 (or JS2 / JS3) • S1 • S2 • S3 • 1 year post-secondary • 2 years post-secondary • 3 years post-secondary • 4 or more years post-secondary • Quranic School • Never attended school
Question identifier:	A40
Question text:	What is the highest grade-level of education your father completed?
Response options:	[Same as for A39]
Question identifier:	A29
Question text:	How many years ago did you first move to this neighborhood?
Response options:	[Open-ended]
Question identifier:	A36
Question text:	If someone met one hundred people from all over your neighborhood, how many of those people would be from each of the following regions: Southern Sudan
Response options:	[Open-ended]
Question identifier:	D36
Question text:	Did you fight in the war in South Sudan?
Response options:	• Yes • No

Table A.7: Question wording for control variables (ctd.)

Question identifier:	X9
Question text:	[Interviewer observation: Are the following services present in this PAU?]
Response options:	Electricity grid that most houses could access: • Yes • No Piped water system that most houses could access: • Yes • No Cell phone service: • Yes • No
Question identifier:	X11
Question text:	[Interviewer observation: Are most roads inside this PAU paved / concrete / tarred?]
Response options:	• Most of them • Some of them • Few • None

Table A.8: Question wording for control variables (ctd.)