Supporting Information:

State violence, party formation, and electoral accountability: The political legacy of the Marikana massacre

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Abstract

This supporting information for "State violence, party formation, and electoral accountability: The political legacy of the Marikana massacre" presents detailed information about the data used in the papers, a series of empirical exercises and visualizations to probe the validity of the empirical design, alternative empirical approaches to estimation, and supplementary analyses.

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A. Replication Data Availability

There are two limitations on the availability of our replication data.

A.A. Twitter Data

Due to Twitter's Terms of Service, we are unable to make publicly available the raw replication data underpinning our Twitter analyses. Instead, following Barberá et al. (2019), we provide in our replication archive two variants of the data that can be used to reproduce our results. First, we provide a version of the data where each tweet is a row, but we remove the text of the tweet and other meta-data, leaving only the date, the handle/screen name, the party, and whether we code this tweet as being about Marikana. Second, we include an aggregated dataset for each party in the 1-month period before and after the massacre occurred. This includes six rows of data - one row per party-month. We provide the party, whether the data is pre- or post-massacre, and a concatenated string of all (cleaned, stemmed) words observed for that party in that month long period. We also provide two chunks of code related to this. First, we include the (dummy) code that generates the above party-month aggregation. Second, we include the code that was used to gather the Twitter data from the Twitter API, though depending on changes to Twitter's API and the `rtweet` package, we cannot guarantee that this code will not become obsolete over time. Please contact d.n.de-kadt@lse.ac.uk if you have any questions about the above.

A.B. SASAS Data

The survey data we use, from the South African Social Attitudes Survey produced by the Human Sciences Research Council (HSRC) of South Africa, includes the enumeration area for each respondent. From this we generate the respondents' latitude and longitude as the centroid of their EA. This data was provided to us directly by the HSRC on condition that we not share the EAs (and the latitudes and longitudes) of respondents, for privacy reasons. Our replication materials include all code for reproducing all results in the paper and appendix, but the EAs and latitudes and longitudes are not included in the replication data. To access this data, we would recommend approaching the HSRC (www.hsrc.ac.za), specifically Dr. Benjamin Roberts (broberts@hsrc.ac.za) who leads SASAS.

B. Twitter: Sample Selection

The Twitter data was gathered using the Twitter Search Tweets: Full Archive API, accessed via the `rtweet` package in `R` (Kearney, 2019). The earliest recorded tweets in our data are from January 2009, and the most recent tweets we analyze are from the 1st of December 2020. We only pull initial tweets by handles – we exclude retweets of others' tweets and responses to tweets as the costs of including these data points is high, and we feel the value added by included them is low. Our dataset includes 234,853 tweets, 63,396 from ANC handles, 87,767 from DA handles, and 83,690 from EFF handles.

How did we select our 20 handles? We began with an exclusive focus on the EFF, and our first task was capturing the data from the EFF's official handle. Having done this, it became apparent that we would need to supplement the EFF data with the personal accounts of those who would become major politicians in the party. The first two accounts, Julius Malema and Floyd Shivambu were clear choices. We rounded out these two choices with other EFF handles that were, first, central and important voices in the EFF for as much of the period of study as possible, and second, reasonably active on Twitter. The most obvious additional choices were the handles belonging to Dali Mpofu and Mbuyiseni Ndlozi. Mpofu has sat on the EFF's central command team since 2013, and represented the Marikana families both in court and during the Farlam commission. Ndlozi is a central figure in the party, and was the party spokesperson for much of the period under study, with over 700,000 followers. We completed the EFF sample with the handles from three more people, all of whom are members of the EFF's central command team and have been for a long period: Leigh Mathys, Hlengiwe Mkhaliphi, and Gardee Godrich. All seven of the EFF handles tweet regularly and have numerous followers, and only Mkhaliphi and Mathys have fewer than 100,000 followers.

We then collected comparative data for both the incumbent ANC and the official opposition party, the DA. We again began with the official handles of both parties, but, to enhance comparability with the EFF data, also collected data for major politicians. For the DA, we selected Helen Zille, Mmusi Maimane, Lindiwe Mazibuko, Athol Trollip, and John Steenuisen. Since 2006, Zille has been the most central figure in the DA, leading the party from 2007 - 2015, and since late 2019 serving as the party's Federal Chairperson. Maimane was Zille's successor as party leader, having served as the party's national spokesperson from 2011 - 2014. During his tenure he served as the parliamentary Leader of the Opposition, eventually departing the party in late 2019. Maimane's predecessor was Mazibuko, who served as the parliamentary Leader of the Opposition from 2011 - 2014, before leaving the party. Steenhuisen is as of 2020 the current leader of the party, having succeeded Maimane, and was the party's Chief Whip from 2014 - 2019. Athol Trollip was the parliamentary Leader of the Opposition from 2009 - 2011, and the party's Federal Chairperson from 2015 - 2019, after which he retired from party politics. The DA handles are particularly prolific, and all except Trollip have over 100,000 followers, with Zille and Maimane both having over 1,000,000.

The ANC handles were more challenging to choose, as the party does not engage in much non-official communication. The party handle itself is prolific and has over 700,000 followers. Beyond this handle, there are very few senior ANC politicians who are active on Twitter. We first focus on five central figures in the ANC during the period of study: Cyril Ramaphosa, Gwede Mantashe, Jackson Mthembu, Nathi Mthethwa, and Fikile Mbalula. Ramaphosa was Secretary General of the ANC during the transition and much of Mandela's first presidency. He has been a member of the ANC's National Executive Committee (NEC) since 2007, the deputy president of the party from 2012 - 2017, and was the deputy president of South Africa from 2014 - 2018. Since 2017 he has been the president of the ANC, and has been the president of South Africa since 2018. Ramaphosa was also embroiled in the Marikana massacre: in 2012 he served on the board of directors for Lonmin, and the day before the massacre occurred had called for the government (which he was not yet part of, though he was a member of the ANC and on the NEC) to take action against the strikers. Mantashe was the secretary general of the ANC from 2007 - 2017, one of the"top six" most powerful positions in the party. In 2017 he became the chairperson of the party (another top six position), and in 2018 he was appointed Minister of Mineral Resources, the ministry that oversees the mining sector. Mthembu was the ANC's national spokesperson from 1995 – 1997 and then again from 2009 - 2014. He served as the parliamentary Chief Whip for the ANC from 2016 - 2019. From 2019 he has served as a Minister in the Presidency. Nathi Mthethwa was Minister of Police (previously "Safety and Security") from 2008 - 2014, and is currently the Minister of Arts, Culture, & Sports. He was thus Minister of Police during the massacre, and directly responsible for the actions of the Police. Finally, Fikile Mbalula was Minister of Sport & Recreation from 2010 - 2017, Minsiter of Police from 2017 - 2018, and is currently Minister of Transport. We include him as he has almost 2,000,000 followers, and is a central figure in South African political Twitter.

Notable absences from our ANC sample are Jacob Zuma, President of South Africa and the ANC during the massacre, Kgalema Motlanthe, Deputy President at the time, and Susan Shabangu, Minister of Mineral Resources at the time. Zuma and Shabangu do not have Twitter accounts, and Motlanthe's Twitter account is essentially abandoned: it has only 31 tweets, the last of which was posted on November 4th 2012. None of the 31 tweets mentions Marikana, with just one tweet being potentially relevant, a quote reading "NUM remains the union of choice for mine workers in the country" posted on October 30th 2012.

C. Twitter: Handle Attributes

D. Twitter: ANC and DA Word Clouds

Figures D.1 and D.2 present the word clouds for the ANC and DA, respectively, in the months prior to and immediately following the massacre. These can be directly compared with the EFF word clouds presented in the paper. The ANC makes almost no mention of Marikana in the month after the massacre, and its communications remain very similar to the month prior. The DA does mention Marikana in the month following the massacre, but tellingly its core political slogan of the period – "working for jobs" – remains the dominant message in the post-massacre period.

Table C.1: Summary Statistics for Twitter Handles (as of December 2020)

Handle	Real Name	Party	First Tweet	Followers	Tweets #	Marikana #	M/T
MbalulaFikile	Fikile Mbalula	ANC	2019-03-29	2300000	6764	1	0.00015
AtholT	Athol Trollip	DA (ex)	2015-03-28	43200	4537	3	0.00066
GwedeMantashe1	Gwede Mantashe	ANC	2013-07-11	437800	2728	3	0.00110
CyrilRamaphosa	Cyril Ramaphosa	ANC	2015-01-29	1700000	2114	5	0.00237
jsteenhuisen	John Steenhuisen	DA	2009-02-17	160600	3744	5	0.00134
HhMkhaliphi	Hlengiwe Mkhaliphi	EFF	2013-08-14	29700	2710	7	0.00258
JacksonMthembu_	Jackson Mthembu	ANC	2012-11-30	420800	1859	7	0.00377
NathiMthethwaSA	Nathi Mthethwa	ANC	2014-11-17	90600	5888	9	0.00153
LindiMazibuko	Lindiwe Mazibuko	DA (ex)	2009-02-17	480200	5127	13	0.00254
helenzille	Helen Zille	DA	2009-02-11	1400000	11438	14	0.00122
GardeeGodrich	Gardee Godrich	EFF	2014-06-18	190400	4360	34	0.00780
Julius_S_Malema	Julius Malema	EFF	2010-04-07	3300000	5493	44	0.00801
MmusiMaimane	Mmusi Maimane	DA (ex)	2010-09-20	1500000	8124	60	0.00739
MbuyiseniNdlozi	Mbuyiseni Ndlozi	EFF	2012-01-17	1200000	6349	74	0.01166
FloydShivambu	Floyd Shivambu	EFF	2010-07-05	1000000	4515	76	0.01683
AdvDali_Mpofu	Dali Mpofu	EFF	2013-09-07	752100	5687	86	0.01512
MYANC	African National Congress	ANC	2009-01-09	904800	44043	109	0.00247
LeighMathys	Leigh Mathys	EFF	2010-07-26	104800	7982	136	0.01704
Our_DA	Democratic Alliance	DA	2009-03-10	638700	54797	347	0.00633
EFFSouthAfrica	Economic Freedom Fighters	EFF	2013-06-11	1200000	46594	662	0.01421

Figure D.1: Word Clouds of ANC Handles, 1 Month Before (Left) and After (Right) the Massacre
Note: Minimum frequency for inclusion is 3.

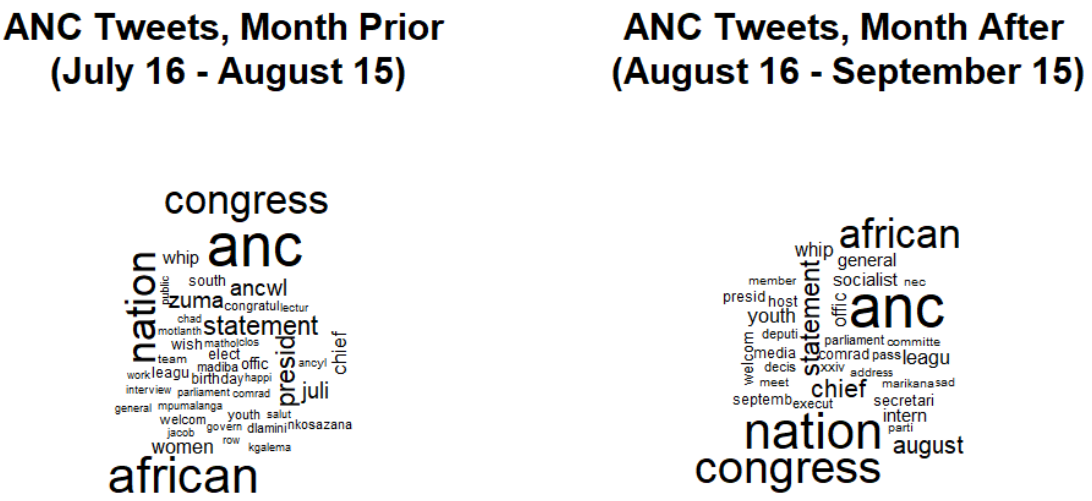
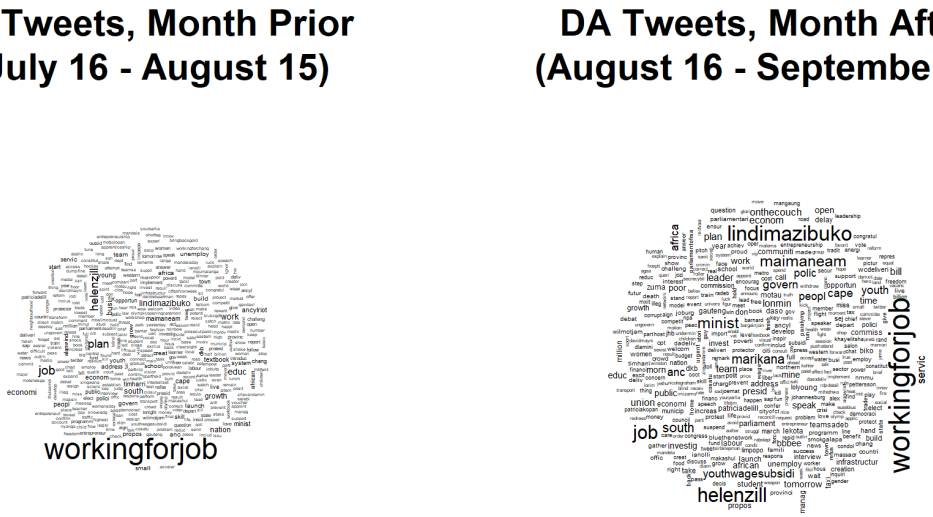


Figure D.2: Word Clouds of DA Handles, 1 Month Before (Left) and After (Right) the Massacre
Note: Minimum frequency for inclusion is 3.



E. Aggregate Validity: Placebo Tests

The following figures demonstrate pre-trend plausibility of the research design. Essentially, there are no meaningful pre-trends that suggest electoral returns were already deviating in the Western Limb prior to the massacre. Maps are excluded for reasons of space, but are available upon request, and demonstrate the same patterns.

Figure E.3: Visualizing the Electoral Pre-Trends 2004 - 2009 (National and Provincial Elections)
Note: This replicates Figure 2 in the paper for the 2004 - 2009 pre-treatment period.

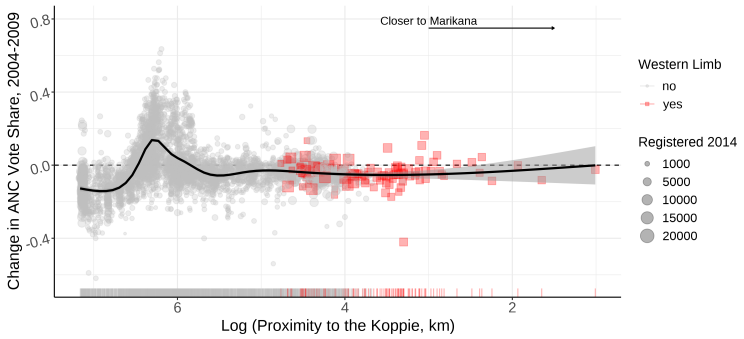


Figure E.4: Visualizing the Electoral Pre-Trends 1999 - 2004 (National and Provincial Elections)
Note: This replicates Figure 2 in the paper for the 1999 - 2004 pre-treatment period.

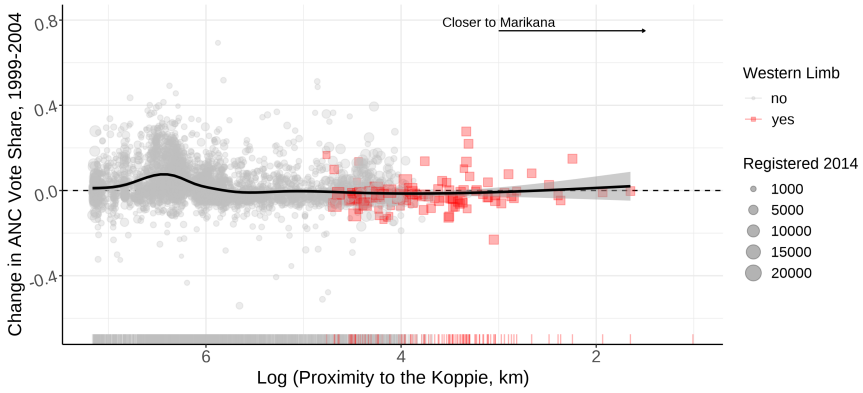


Figure E.5: Visualizing the Electoral Pre-Trends 2006 - 2011 (Local Government Elections)
Note: This replicates Figure 2 in the paper for the 2006 - 2011 pre-treatment period.

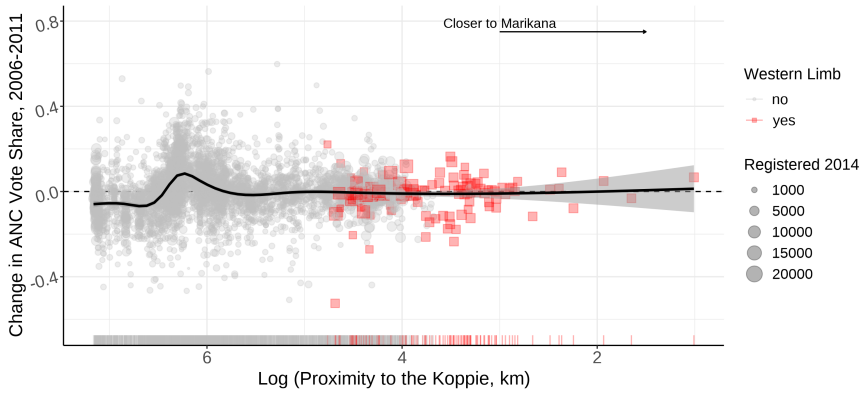


Figure E.6: Visualizing the Electoral Pre-Trends 2000 - 2006 (Local Government Elections)
Note: This replicates Figure 2 in the paper for the 2000 - 2006 pre-treatment period.

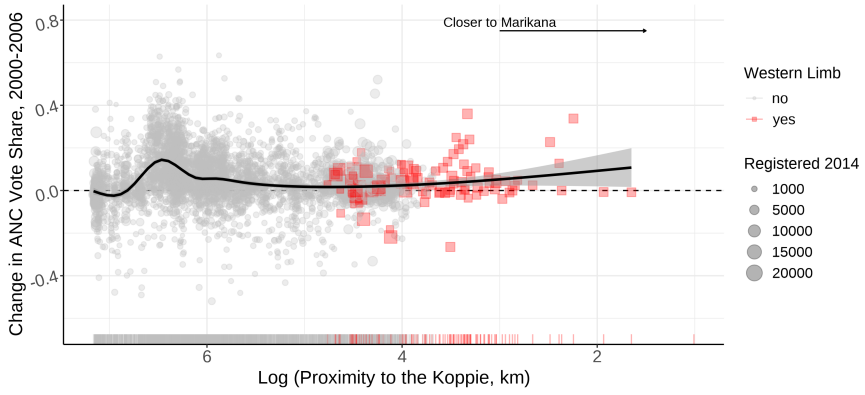
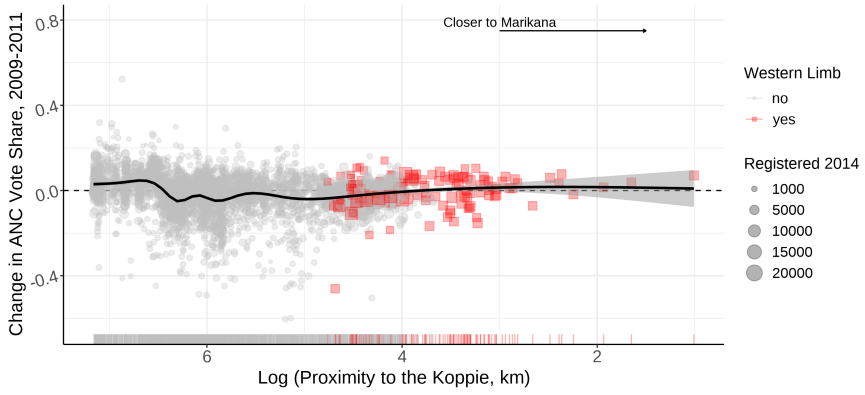


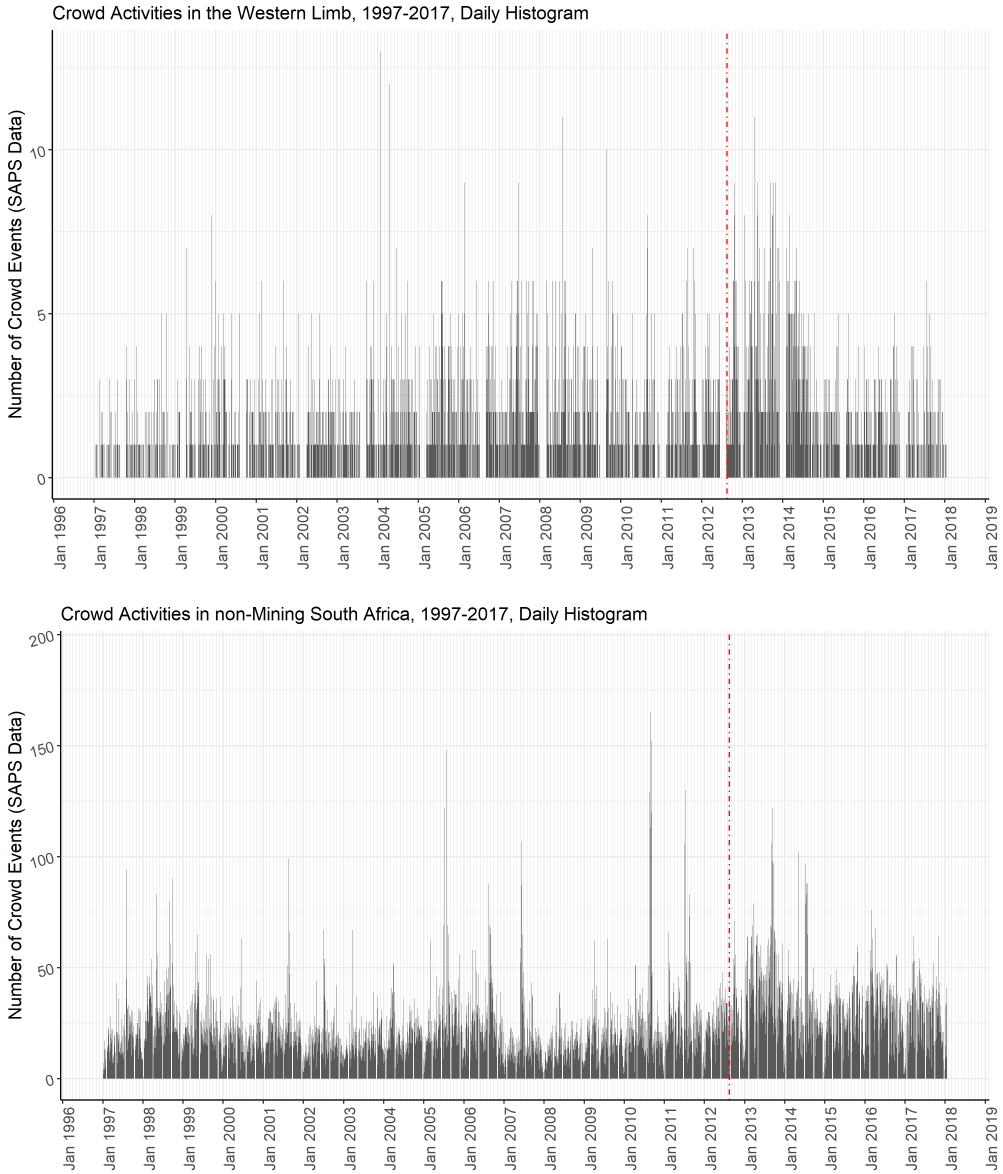
Figure E.7: Visualizing the Electoral Pre-Trends 2009 - 2011 (Both Election Types)
Note: This replicates Figure 2 in the paper for the 2009 - 2011 pre-treatment period.



F. Aggregate Validity: Crowd Activities Over Time

The following figures present crowd activities over time in the Western Belt (top) and in the rest of South Africa (bottom). These events are gatherings of people at which public order police (the branch of SAPS involved in policing riots, protests, strikes, and public gatherings) were deployed. The figures show no meaningful uptick in events of any kind in the period preceding the massacre, suggesting that the massacre was not, say, the culmination of a recent period of changing political and protest dynamics. These data were provided by the South African History Archive (`https://foip.saha.org.za/`), who gained access to them through a Promotion of Access to Information Act, and raw data can be requested from the SAHA.

Figure F.8: Crowd Event Frequency, South African Police Service IRIS Data



G. Aggregate Validity: Missing Data Due to Spatial Merge

The process of aggregating the polling station data from the years 1999 - 2014 to the 2016 wards means that for some years there are some wards that do not have data (there is no polling station that falls within the boundary), and are thus missing. The degree of missingness is very minor: 0.09% of observations in 2014, 0.14% in 2011, 0.34% in 2009, 0.64% in 2006, and 1.7% 2004. The missingness is most severe in 1999 (3.4%) and 2000 (3.6%), though these years feature in few of our analysis. Given missingness is extremely low from 2009 onward, the primary threat this missingness poses to our analyses is that it may contribute to the "clean" placebo results that we present. That is, the sample being used to conduct the pre-trend analysis is, due to missingness, slightly different to the sample being used to produce the effect estimates. As such, in Table G.2 we replicate the main effect analyses but exclude the observations that are missing in 1999, 2000, 2004, and 2006 respectively. Reassuringly, the results, especially when dropping observations missing in 2004 and 2006 which are our main pre-trend years, are extremely similar to the main effect estimates presented in the paper.

Table G.2: Regressions Excluding Missing Data from the Pre-Period

	DV = Δ ANC Vote Share 09-14				DV = Δ ANC Vote Share 11-16			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Western Belt Community	-0.077***	-0.079***	-0.081***	-0.089***	-0.079**	-0.080**	-0.084***	-0.087***
	(0.021)	(0.021)	(0.019)	(0.023)	(0.025)	(0.025)	(0.023)	(0.025)
Missing in 1999 Excl.	✓				✓			
Missing in 2000 Excl.		✓				✓		
Missing in 2004 Excl.			✓				✓	
Missing in 2006 Excl.				✓				✓
Spatial Controls	✓	✓	✓	✓	✓	✓	✓	✓
Covariates	✓	✓	✓	✓	✓	✓	✓	✓
Observations	4234	4228	4318	4363	4237	4230	4318	4363
R^2	0.357	0.356	0.358	0.361	0.335	0.335	0.341	0.343

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

H. Aggregate Results: Spatial Donuts

To guard against the risk of spatial spillovers in "treatment," we exclude all non-Western Limb wards first within 100km, and then 200km of the Koppie. We re-estimate the main specifications on this subset:

$$\Delta Y_w = \alpha + \tau_{DID} WesternLimb_w + \delta \mathbf{X_w} + \gamma \mathbf{G_w} + \epsilon_m$$

For ward w, we regress the first difference of Y our outcome variable between the time pre- and post-Marikana periods (2009 and 2014 for the National and Provincial Elections (NPE), 2011 and 2016 for the Local Government Elections (LGE)), on an indicator of whether the ward intersects with the $WesternLimb$. $\mathbf{X}$ are optional time-invariant census covariates (unemployment rate, formal, informal, and traditional housing stock, racial population shares, and language group population shares). $\mathbf{G}$ are optional spatial covariates (longitude + latitude + longitude×latitude). Standard errors ϵ_m are clustered by municipality, the geographic unit above the ward, which helps to account for spatial auto-correlation in the treatment assignment.

H.A. 100km Donut

Table H.3: 100km Donut (NPE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 09-14			DV = Δ ANC Vote Share 04-09		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.126***	-0.099***	-0.102***	-0.039**	-0.002	-0.005
	(0.022)	(0.022)	(0.023)	(0.012)	(0.012)	(0.012)
100km Radius Excluded	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	3930	3930	3930	3877	3877	3877
R^2	0.075	0.221	0.343	0.002	0.352	0.666

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table H.4: 100km Donut (LGE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-16			DV = Δ ANC Vote Share 06-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.153***	-0.108***	-0.103***	-0.021	-0.011	-0.020
	(0.029)	(0.028)	(0.026)	(0.016)	(0.018)	(0.017)
100km Radius Excluded	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	3938	3938	3938	3916	3916	3916
R^2	0.051	0.155	0.318	0.001	0.097	0.298

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

H.B. 200km Donut

Table H.5: 200km Donut (NPE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 09-14			DV = Δ ANC Vote Share 04-09		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.134***	-0.110***	-0.116***	-0.043***	-0.003	-0.011
	(0.022)	(0.022)	(0.024)	(0.013)	(0.014)	(0.014)
200km Radius Excluded	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	3408	3408	3408	3368	3368	3368
R^2	0.096	0.213	0.332	0.003	0.361	0.691

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table H.6: 200km Donut (LGE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-16			DV = Δ ANC Vote Share 06-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.162***	-0.119***	-0.124***	-0.022	-0.008	-0.013
	(0.029)	(0.029)	(0.029)	(0.017)	(0.018)	(0.018)
200km Radius Excluded	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	3416	3416	3416	3395	3395	3395
R^2	0.066	0.153	0.324	0.001	0.113	0.330

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

I. Aggregate Results: Proximity to Marikana as "Treatment"

As an alternative approach, we use a continuous version of treatment, the proximity to Marikana. We measure this as the negative log of the distance in kilometers from the centroid of each ward to the Koppie. The specification is as follows:

$$\Delta Y_w = \alpha + \tau_{DID} ProximityToMarikana_w + \delta \mathbf{X_w} + \gamma \mathbf{G_w} + \epsilon_m$$

For ward w, we regress the first difference of Y our outcome variable between the time pre- and post-Marikana periods (2009 and 2014 for the National and Provincial Elections (NPE), 2011 and 2016 for the Local Government Elections (LGE)), on $ProximityToMarikana$. $\mathbf{X}$ are optional time-invariant census covariates (unemployment rate, formal, informal, and traditional housing stock, racial population shares, and language group population shares). $\mathbf{G}$ are optional spatial covariates (longitude + latitude + longitude×latitude). Standard errors ϵ_m are clustered by municipality, the geographic unit above the ward, which helps to account for spatial auto-correlation in the treatment assignment.

Table I.7: Proximity to Marikana (NPE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 09-14			DV = Δ ANC Vote Share 04-09		
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	-0.051***	-0.042***	-0.053***	-0.002	-0.005	-0.012*
	(0.003)	(0.005)	(0.005)	(0.008)	(0.004)	(0.005)
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	4377	4377	4377	4318	4318	4318
R^2	0.291	0.410	0.421	0.000	0.654	0.658

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table I.8: Proximity to Marikana (LGE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-16			DV = Δ ANC Vote Share 06-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	-0.050***	-0.033***	-0.053***	0.005	-0.005	-0.007
	(0.005)	(0.006)	(0.006)	(0.005)	(0.004)	(0.006)
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	4386	4386	4386	4363	4363	4363
R^2	0.139	0.356	0.369	0.001	0.287	0.289

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

J. Aggregate Results: Matching on Pre-Massacre Covariates

We match treated wards to untreated wards using nearest neighbor matching with Mahalanobis distance and estimate the difference-in-difference in ANC vote share between treated and untreated wards. We estimate the effect of the massacre on the change in ANC vote share from the 2009 elections to the 2014 national and provincial elections and from the 2011 local government election to that in 2016. We use the `Matchit` package in R to match our data, and produce two matched datasets. The first includes 242 one-to-one matched wards, matched on the following covariates: unemployment rate, separate demographic shares for Black African, Colored, Indian or Asian, and "Other," the share of formal, informal and traditional housing, the shares of the population that speak Afrikaans, English, Isindebele, Isixhosa, Sepedi, Sesotho, Setswana, Signlanguage, Siswati, Tshivenda, Xitsonga, and latitude, longitude and their product. The second includes 212 one-to-one matched wards, matched on the same covariates but excluding latitude, longitude and their product.

With the matched datasets, we then re-estimate the change in vote share as a result of a ward falling in the Western Limb These results, displayed in Tables J.9 and J.11, mirror our original difference-in-difference results. The ANC vote share decreases after the massacre and EFF vote shares are positive for both national and local government elections. To make sure we are only observing the effects of the massacre, we re-estimate our placebo tests for ANC vote share using elections that occurred before the massacre. Those results are presented in Tables J.10 and J.12, showing that within the matched datasets wards in the Western Limb were not trending in a statistically different way than others before the massacre.

Table J.9: Difference-in-Differences Analysis of Electoral Effect of the Massacre with Matched Observations Including Spatial Covariates

	PANEL A: National and Provincial Elections DV = Δ Vote Share 09-14		
	ANC	DA	EFF
	(1)	(2)	(3)
Western Belt Community	−0.068**	−0.012	0.042**
	(0.029)	(0.007)	(0.021)
Observations	212	212	212
R^2	0.117	0.015	0.089
	PANEL B: Local Government Elections DV = Δ Vote Share 11-16		
	ANC	DA	EFF
	(1)	(2)	(3)
Western Belt Community	−0.046	−0.016*	0.049
	(0.030)	(0.009)	(0.032)
Observations	212	212	212
R^2	0.047	0.017	0.058

Note: Municipality clustered SEs in parenthesis. *p<0.1; **p<0.05; ***p<0.01

Table J.10: Placebo Diff-in-Diff Analysis of Electoral Effect of the Massacre with Matched Observations Including Spatial Covariates

	DV = Δ Placebo ANC Vote Share			
	National and Provincial		Local	Combined
	04-09	99-04	06-11	09-11
	(1)	(2)	(3)	(4)
Western Belt Community	0.007	−0.016	−0.021	−0.010
	(0.008)	(0.013)	(0.014)	(0.016)
Observations	212	212	212	212
R^2	0.005	0.015	0.017	0.004

Note: Municipality clustered SEs in parenthesis. *p<0.1; **p<0.05; ***p<0.01

Table J.11: Difference-in-Differences Analysis of Electoral Effect of the Massacre with Matched Observations Excluding Spatial Covariates

	PANEL A: National and Provincial Elections DV = Δ Vote Share 09-14		
	ANC	DA	EFF
	(1)	(2)	(3)
Western Belt Community	−0.071***	−0.006	0.044**
	(0.027)	(0.007)	(0.021)
Observations	212	212	212
R^2	0.122	0.005	0.092
	PANEL B: Local Government Elections DV = Δ Vote Share 11-16		
	ANC	DA	EFF
	(1)	(2)	(3)
Western Belt Community	−0.049	−0.015	0.049
	(0.030)	(0.010)	(0.034)
Observations	212	212	212
R^2	0.055	0.018	0.056

Note: Municipality clustered SEs in parenthesis. *p<0.1; **p<0.05; ***p<0.01

Table J.12: Placebo Diff-in-Diff Analysis of Electoral Effect of the Massacre with Matched Observations Excluding Spatial Covariates

	DV = Δ Placebo ANC Vote Share			
	National and Provincial		Local	Combined
	04-09	99-04	06-11	09-11
	(1)	(2)	(3)	(4)
Western Belt Community	0.004	−0.018	−0.014	−0.008
	(0.009)	(0.012)	(0.015)	(0.016)
Observations	212	212	212	212
R^2	0.002	0.015	0.007	0.003

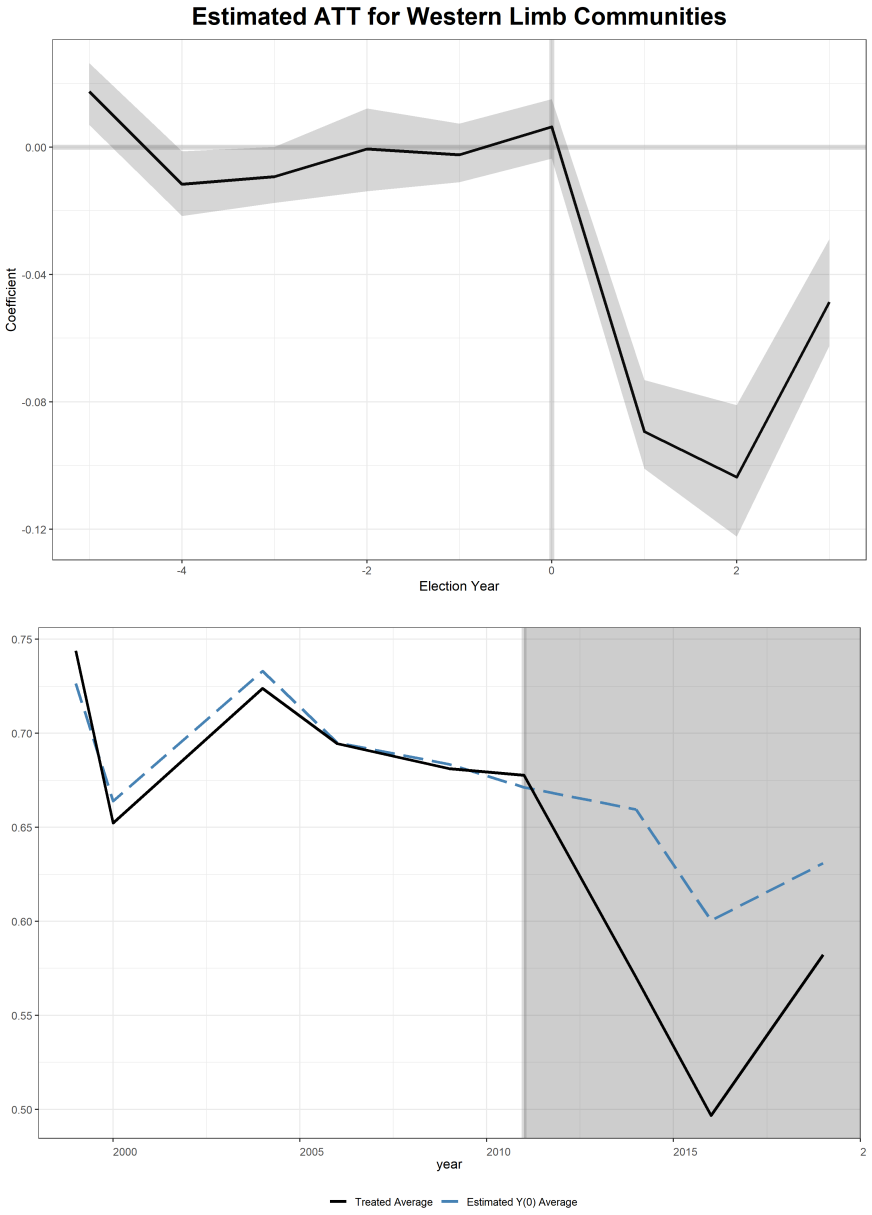
Note: Municipality clustered SEs in parenthesis. *p<0.1; **p<0.05; ***p<0.01

K. Aggregate Results: Generalized Synthetic Control Method

An alternative empirical approach is to use the generalized synthetic control method, developed by Xu (2017). To do so we combine all of the election data, both national and local, from 1999 through 2019, into a single panel. This approach estimates counterfactual outcomes for each treated unit separately, and yields an estimate of the Average Treatment Effect on the Treated (ATT), conditional on well-matching

pre-trends, robust to both time-invariant and time-varying cross-unit confounders. Using this approach we find an 8.9 percentage point effect for the national election and a 10.4 percentage point effect for the local election ($p < 0.001$). The results are presented visually in Figure K.9, and full results are available in the replication materials.

Figure K.9: Generalized Synthetic Control Method Estimates of ATT



L. Aggregate Results: Semi-Parametric Regressions

As a more conservative approach to estimating the electoral effect of the massacre, we first subset to 150km or 300km radii around the Koppie. In the 300km setting, we then also control for the cubic expansion of

latitude and longitude. These are extremely conservative specifications given the spatial spillover of the treatment.

$$\Delta Y_w = \alpha + \tau_{DID} WesternLimb_w + \delta \mathbf{X_w} + \gamma \mathbf{G_w} + \epsilon_m$$

For ward w, we regress the first difference of Y, which reflects the change in our outcome variable between the pre- and post-Marikana periods (2009 and 2014 for the National and Provincial Elections (NPE), 2011 and 2016 for the Local Government Elections (LGE)), on an indicator for whether the ward intersects with the $WesternLimb$. $\mathbf{X}$ are optional time-invariant census covariates (unemployment rate, formal, informal, and traditional housing stock, racial population shares, and language group population shares). $\mathbf{G}$ are optional spatial covariates (longitude + latitude + longitude×latitude in Tables L.13 - L.16, or in Tables L.17 and L.18, longitude + latitude + longitude×latitude + longitude^2 + latitude^2 + longitude^2 × latitude^2 + longitude^3 + latitude^3 + longitude^3 × latitude^3 + longitude × latitude^2 + longitude^2 × latitude + longitude × latitude^3 + longitude^3 × latitude + longitude^2 × latitude^3 + longitude^3 × latitude^2). Standard errors ϵ_m are clustered by municipality, the geographic unit above the ward, which helps to account for spatial auto-correlation in the treatment assignment.

L.A. 150km Radius with Linear Spatial Controls

Table L.13: 150km Radius Only (NPE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 09-14			DV = Δ ANC Vote Share 04-09		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.052*	-0.051$^+$	-0.042*	-0.005	0.005	0.003
	(0.023)	(0.026)	(0.020)	(0.009)	(0.009)	(0.007)
150km Radius Only	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	835	835	835	817	817	817
R^2	0.052	0.073	0.436	0.001	0.043	0.183

Standard errors clustered by municipality in parentheses
$^+$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table L.14: 150km Radius Only (LGE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-16			DV = Δ ANC Vote Share 06-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.071*	-0.053	-0.040	-0.017	-0.013	-0.025
	(0.030)	(0.032)	(0.025)	(0.016)	(0.018)	(0.015)
150km Radius Only	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	836	836	836	834	834	834
R^2	0.060	0.072	0.479	0.006	0.018	0.146

Standard errors clustered by municipality in parentheses
$^+$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

L.B. 300km Radius with Linear Spatial Controls

Table L.15: 300km Radius Only (NPE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 09-14			DV = Δ ANC Vote Share 04-09		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.067**	-0.066*	-0.064**	-0.001	-0.008	-0.001
	(0.023)	(0.026)	(0.020)	(0.008)	(0.008)	(0.007)
300km Radius Only	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	1519	1519	1519	1489	1489	1489
R^2	0.059	0.115	0.381	0.000	0.083	0.213

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table L.16: 300km Radius Only (LGE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-16			DV = Δ ANC Vote Share 06-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.084**	-0.070*	-0.052*	-0.011	-0.018	-0.024^{+}
	(0.030)	(0.030)	(0.022)	(0.016)	(0.016)	(0.014)
300km Radius Only	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	1520	1520	1520	1516	1516	1516
R^2	0.044	0.094	0.350	0.001	0.008	0.084

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

L.C. 300km Radius with Cubic Spatial Controls

Table L.17: 300km Radius Only, Cubic Spatial Controls (NPE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 09-14			DV = Δ ANC Vote Share 04-09		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.067**	-0.043^{+}	-0.048*	-0.001	-0.002	0.002
	(0.023)	(0.023)	(0.019)	(0.008)	(0.010)	(0.008)
300km Radius Only	✓	✓	✓	✓	✓	✓
Cubic Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	1519	1519	1519	1489	1489	1489
R^2	0.059	0.204	0.414	0.000	0.154	0.239

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table L.18: 300km Radius Only, Cubic Spatial Controls (LGE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-16			DV = Δ ANC Vote Share 06-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.084**	-0.042	-0.037^{+}	-0.011	-0.019	-0.024^{+}
	(0.030)	(0.027)	(0.022)	(0.016)	(0.016)	(0.014)
300km Radius Only	✓	✓	✓	✓	✓	✓
Cubic Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	1520	1520	1520	1516	1516	1516
R^2	0.044	0.142	0.366	0.001	0.045	0.109

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

M. Aggregate Results: Combined Election Types

We replicate the main specification but stack election types together, to study change in ANC vote share from 2011 (LGE) to 2014 (NPE), with the placebo years being 2009 (NPE) to 2011 (LGE). The results of this approach are presented in Table M.19, with the key point estimates being largely unchanged compared to the main results presented in the paper.

Table M.19: Effect of the Massacre on Incumbent Vote Share, All Election Types Combined

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-14			DV = Δ ANC Vote Share 09-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.130***	-0.093***	-0.095***	0.013	0.009	0.004
	(0.027)	(0.026)	(0.023)	(0.011)	(0.010)	(0.008)
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	4386	4386	4386	4377	4377	4377
R^2	0.046	0.135	0.300	0.001	0.118	0.196

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

N. Aggregate Results: Emergence of the EFF

Figures N.10 and N.10 visualize the emergence of the EFF over space.

Figure N.10: Visualizing Effects on Party Formation: National and Provincial Elections

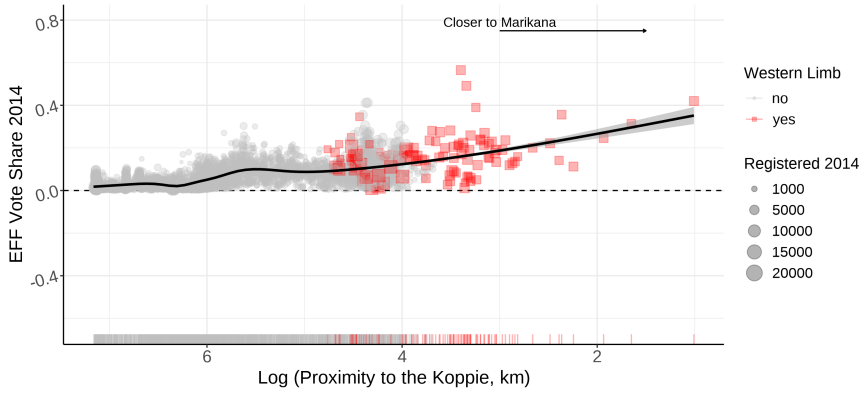
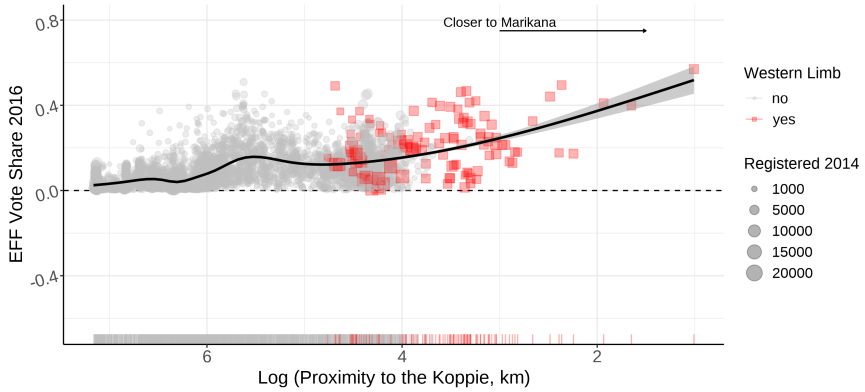


Figure N.11: Visualizing Effects on Party Formation: Local Government Elections



O. Aggregate Results: Turnout

Our first approach is to study effects on turnout in the aggregate. To do so we implement our core specification above but use for the dependent variable $turnout = \frac{votes}{registered}$. The results of this analysis are presented in Panel A of Table O.20. Column (3), our preferred specification, suggests that turnout decreased by 1 percentage point in the Western Limb communities as a consequence of the massacre, but we cannot statistically distinguish that effect from zero. Contrary to any demobilization story, we find that in the LGEs there is a statistically significant increase in turnout. This effect is consistent with the results we find for party formation, in Panel B of Table O.20.

Table O.20: Difference-in-Differences Analysis of Turnout Effects

	DV = Δ Turnout 09-14			DV = Δ Turnout 11-16		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt Community	-0.004	-0.009	-0.010	0.037***	0.033***	0.027**
	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)	(0.010)
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	4377	4377	4377	4386	4386	4386
R^2	0.000	0.006	0.058	0.011	0.033	0.175

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

P. Aggregate Results: All Regions of the Platinum Belt

It is possible that the electoral effects were felt not only in the immediate area around Marikana, but in other mining communities in South Africa. While it is not possible to geocode all mines in South Africa (we have attempted this with the help of the Department of Mineral Resources, but it has proved impossible), it is possible to explore the electoral effects of the massacre in the other "limbs" of the platinum belt. The platinum belt has three primary limbs – the Western limb (where Marikana is located), and the Northern and Eastern limbs (both of which are in Limpopo province).

We replicate our analyses in Tables P.21 and P.22 including three dummies, one for each limb. Generally, we find evidence consistent with a small negative electoral effect for the ANC, predominantly in the Northern belt. The effects we detect are much smaller than for the Western belt, suggesting that while other platinum mining communities did react negatively to the massacre, they did so with far less direct intensity (as measured by electoral change) than those in the Marikana area.

Table P.21: Analysis of All Regions of the Platinum Belt (NPE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 09-14			DV = Δ ANC Vote Share 04-09		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt	-0.118***	-0.085***	-0.090***	-0.036**	-0.000	-0.000
	(0.023)	(0.024)	(0.023)	(0.011)	(0.011)	(0.011)
Northern Belt	-0.051***	-0.001	0.027**	-0.042***	-0.037***	0.003
	(0.005)	(0.008)	(0.011)	(0.009)	(0.009)	(0.005)
Eastern Belt	-0.074***	-0.034**	-0.006	-0.023+	-0.053***	0.002
	(0.010)	(0.011)	(0.013)	(0.013)	(0.012)	(0.008)
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	4377	4377	4377	4318	4318	4318
R^2	0.069	0.230	0.364	0.003	0.352	0.656

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table P.22: Analysis of All Regions of the Platinum Belt (LGE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-16			DV = Δ ANC Vote Share 06-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Western Belt	-0.145***	-0.095**	-0.088***	-0.021	-0.013	-0.019
	(0.030)	(0.029)	(0.026)	(0.016)	(0.017)	(0.015)
Northern Belt	-0.129***	-0.077***	-0.028+	-0.010	-0.020*	0.016
	(0.008)	(0.011)	(0.015)	(0.007)	(0.008)	(0.012)
Eastern Belt	-0.040	-0.013	0.045	-0.046***	-0.070***	-0.024
	(0.033)	(0.032)	(0.028)	(0.010)	(0.011)	(0.017)
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	4386	4386	4386	4363	4363	4363
R^2	0.049	0.172	0.343	0.003	0.100	0.289

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Q. Aggregate Results: Victims' Birthplaces

Many mineworkers in the northern parts of South Africa are migrant laborers who were born in southern province of the Eastern Cape. How did the massacre affect the electoral performance of the ANC in those communities? We geocoded the birthplaces of those who were killed on August 16th (barring those victims who were born in Lesotho, and John Kutlwano Ledingoane whose birthplace is not recorded in any records we could find). We then replicated our statistical analyses using these areas as the "treated" units, excluding the Western Limb entirely from the analysis. That is, we look at how ANC performance shifted in the areas from which the murdered miners originally came, compared to ANC performance in the rest of the country excluding the Western Limb.

The results of this exercise are presented in Tables Q.23 and Q.24 below. Our findings are broadly consistent, we think, with there being no real electoral effect of the massacre in these communities. However, our confidence in these findings is limited in that the pre-trends (changes from 2004 – 2009, and 2006 to 2011) are not "clean." Instead, there are downticks in ANC support before the massacre, likely caused by the shift in the ethnic composition of the ANC leadership after 2007 (see De Kadt and Larreguy (2018) for more on this topic). As such, we urge caution in interpreting effect estimates for the post-massacre period, as these areas were clearly diverging from neighboring areas already.

What can we learn from this? We think that this finding provides further evidence for the main channel we investigate in this paper – party formation. Distance from the massacre provided the ANC with a strategic advantage over the EFF: those living in the Transkei did not witness the strike or the massacre firsthand. As Alexander et al. (2013) note, many mineworkers' immediate families live in the Marikana area, not back in the Transkei. So the strength of familial ties is likely also correlated with proximity to the site of the massacre.

Table Q.23: Analysis of Victims' Birthplaces (NPE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 09-14			DV = Δ ANC Vote Share 04-09		
	(1)	(2)	(3)	(4)	(5)	(6)
Victims' Birthplaces	0.040^{+}	0.011	0.026	-0.031^{+}	-0.068***	0.014
	(0.020)	(0.019)	(0.021)	(0.017)	(0.019)	(0.015)
Western Limb Excl.	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	4256	4256	4256	4202	4202	4202
R^2	0.001	0.196	0.344	0.000	0.352	0.661

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table Q.24: Analysis of Victims' Birthplaces (LGE)

	Main Effect			Pre-Trend Test		
	DV = Δ ANC Vote Share 11-16			DV = Δ ANC Vote Share 06-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Victims' Birthplaces	0.041^{+}	-0.001	0.049*	-0.061***	-0.071***	-0.022^{+}
	(0.023)	(0.024)	(0.021)	(0.012)	(0.015)	(0.012)
Western Limb Excl.	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	4265	4265	4265	4243	4243	4243
R^2	0.001	0.138	0.319	0.001	0.097	0.291

Standard errors clustered by municipality in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

R. Individual Validity: Placebo Tests

To test the validity of the individual-level design, we assign two placebo treatment years: 2010 and 2011. We then estimate whether there is an "effect" if we use these variables in our regression, and exclude all post-massacre data. The absence of any substantial and statistically significant effects shown in Table R.25 suggests that the parallel trends assumption holds.

Table R.25: Placebo Regressions Using Individual Data and 2010 and 2011 as Placebo Years

	PANEL A, DV = Prospective ANC Vote					
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	0.067***	-0.073***	-0.024**	0.062***	-0.077***	-0.026**
	(0.010)	(0.014)	(0.008)	(0.011)	(0.015)	(0.008)
Placebo [=2011]	-0.125	-0.022	-0.140			
	(0.227)	(0.215)	(0.142)			
Proximity × Placebo [=2011]	-0.009	-0.001	-0.010			
	(0.018)	(0.017)	(0.011)			
Placebo [=2010]				0.085	0.115	-0.028
				(0.183)	(0.169)	(0.105)
Proximity × Placebo [=2010]				0.006	0.009	-0.003
				(0.014)	(0.013)	(0.008)
Pre-2012 Sample	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	15881	15881	15867	15881	15881	15867
R^2	0.016	0.064	0.307	0.015	0.064	0.307
	PANEL B, DV = Retrospective ANC Vote					
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	0.056***	-0.030*	0.005	0.055***	-0.030*	0.006
	(0.009)	(0.013)	(0.008)	(0.010)	(0.013)	(0.008)
Placebo [=2011]	-0.040	0.028	-0.033			
	(0.220)	(0.212)	(0.134)			
Proximity × Placebo [=2011]	-0.002	0.003	-0.001			
	(0.017)	(0.017)	(0.011)			
Placebo [=2010]				-0.017	-0.001	-0.066
				(0.178)	(0.169)	(0.111)
Proximity × Placebo [=2010]				-0.001	-0.000	-0.005
				(0.014)	(0.013)	(0.009)
Pre-2012 Sample	✓	✓	✓	✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	14115	14115	14105	14115	14115	14105
R^2	0.011	0.037	0.310	0.011	0.036	0.310

Standard errors in parentheses
Standard errors clustered by EA in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

S. Individual Validity: Economic Satisfaction Placebo Test

We replicate the difference-in-differences analysis for economic satisfaction as the dependent variable, and find no effect of the massacre. This helps to rule out economic voting as an alternative explanation for the electoral results presented throughout the paper.

Table S.26: The Massacre Has No Effect on Economic Satisfaction

	DV = Satisfaction with the Economy		
	(1)	(2)	(3)
Proximity to Marikana (- log km)	0.011**	-0.018***	-0.014**
	(0.004)	(0.005)	(0.005)
Post Massacre	-0.048	-0.040	-0.012
	(0.062)	(0.061)	(0.061)
Proximity × Post	0.003	0.003	0.005
	(0.005)	(0.005)	(0.005)
Spatial Controls		✓	✓
Covariates			✓
Observations	29394	29394	29365
R^2	0.021	0.028	0.050

Standard errors clustered by EA in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

T. Individual Results: Replicating Aggregate Results

Table T.27: Diff-in-Diff Analysis of ANC Vote Choice as a Function of Proximity to Marikana

	DV = Prospective ANC Vote			DV = Retrospective ANC Vote		
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	0.065***	-0.052***	-0.011^{+}	0.055***	0.024***	0.025***
	(0.009)	(0.010)	(0.006)	(0.008)	(0.005)	(0.006)
Post Massacre	-0.702***	-0.662***	-0.562***	-0.537***	-0.384***	-0.389***
	(0.140)	(0.132)	(0.079)	(0.157)	(0.095)	(0.095)
Proximity × Post	-0.050***	-0.047***	-0.040***	-0.037**	-0.025***	-0.026***
	(0.011)	(0.010)	(0.006)	(0.012)	(0.008)	(0.007)
Donut Sample				✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	30568	30568	30536	22276	22262	22262
R^2	0.012	0.054	0.295	0.011	0.316	0.316

Standard errors clustered by EA in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

U. Individual Results: Emergence of EFF

The SASAS data unfortunately does not include an EFF option until the 2013 round. This is not surprising as the party did not form until October 2013, but it makes analysing the data more challenging. First, it means that we cannot use the difference-in-differences framework, as we have no data on EFF voting intentions in the pre-period. As a result there is no variation in the outcome variable (which is all 0s) in the

pre-period, and so the lower order terms are subsumed by the higher order terms. Our sample size is further reduced by the use of the donut sample when assessing retrospective vote choice. The same problem applies for the dynamic variables (entry to the EFF and switching to the EFF from the ANC), and is magnified in that we can only use data from before 2014 (as explained in the paper) and that we condition on prior behavior. In general, this analysis suffers from both (a) the identification strategy not being available, and (b) the sample sizes being much smaller. The best we can do is a simple cross-sectional regression as follows:

$$Y_{i,t} = \alpha_t + \beta Proximity_{ea} + \delta \mathbf{X_i} + \gamma \mathbf{G_{ea}} + \epsilon_{ea}$$

For individual i in survey year t, we regress our outcome variable Y on the $Proximity$ of their enumeration area ea to the Koppie. X are optional individual-level covariates (age, age squared, sex, a 15-item wealth index, and race group). W are optional spatial covariates (longitude + latitude + longitude×latitude). We include α_t time fixed effects, and ϵ_m are standard errors clustered by enumeration area, the sampling unit of the survey. The coefficient on the interaction term β represents the cross-sectional association between the proximity to the Koppie and Y.

Despite the limitations outlined above the results remain roughly consistent with our aggregate findings and our general narrative. Panel A of Table U.28 shows that, in general, proximity to Marikana is positively associated with both prospective and retrospective EFF vote choice, though the coefficients vary depending on covariate adjustment and sample choice. Columns 4 through 6 of Panel B, despite the dramatically reduced sample size, show that proximity to Marikana is generally positively associated with switching from the ANC to the EFF, while columns 1 through 3 suggest that there is little evidence of mobilization for the EFF. It is also worth noting, as a further caveat to these analyses, that the EFF only formed in October 2013, and the 2013 survey was conducted in November of that year. As such, it is plausible that many people surveyed in 2013 may not have been aware of the EFF, or may have been undecided at the time, either of which would attenuate effects in Panel A columns 1 through 3, and all results presented in Panel B.

Table U.28: EFF Individual-Level Vote Choice and Voting Dynamics

	PANEL A: EFF Vote					
	DV = Prospective EFF Vote			DV = Retrospective EFF Vote		
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	0.012***	0.001	0.003	0.007***	0.006**	0.002
	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)
2013-2016 Only	✓	✓	✓			
2014-2016 Only				✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	12196	12196	12186	8161	8157	8157
R^2	0.005	0.009	0.026	0.002	0.014	0.016
	PANEL A: EFF Vote					
	DV = Entry to EFF			DV = Switch to EFF from ANC		
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	0.011*	-0.011	-0.006	0.016**	0.012	0.012
	(0.004)	(0.011)	(0.011)	(0.005)	(0.008)	(0.008)
2013 Only	✓	✓	✓	✓	✓	✓
Prior Non-Voters Only	✓	✓	✓			
Prior ANC Voters Only				✓	✓	✓
Spatial Controls		✓	✓		✓	✓
Covariates			✓			✓
Observations	1111	1111	1110	1552	1552	1548
R^2	0.005	0.017	0.036	0.012	0.015	0.031

Standard errors clustered by EA in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

V. Individual Results: Attitudinal Changes

Our evidence suggests that there are electoral consequences to state violence in democracies. Yet state violence could have other consequences; there has been much speculation that the massacre led to disenchantment with democracy and electoral politics (Blanco and Ruiz, 2013). We consider changes in six core attitudinal variables: trust in government, trust in the police, democratic satisfaction, belief that democracy is the best system of government, belief that voting is one's duty, and belief that voting makes a difference.

Figure V.12: Trends in National Attitudes Over Time

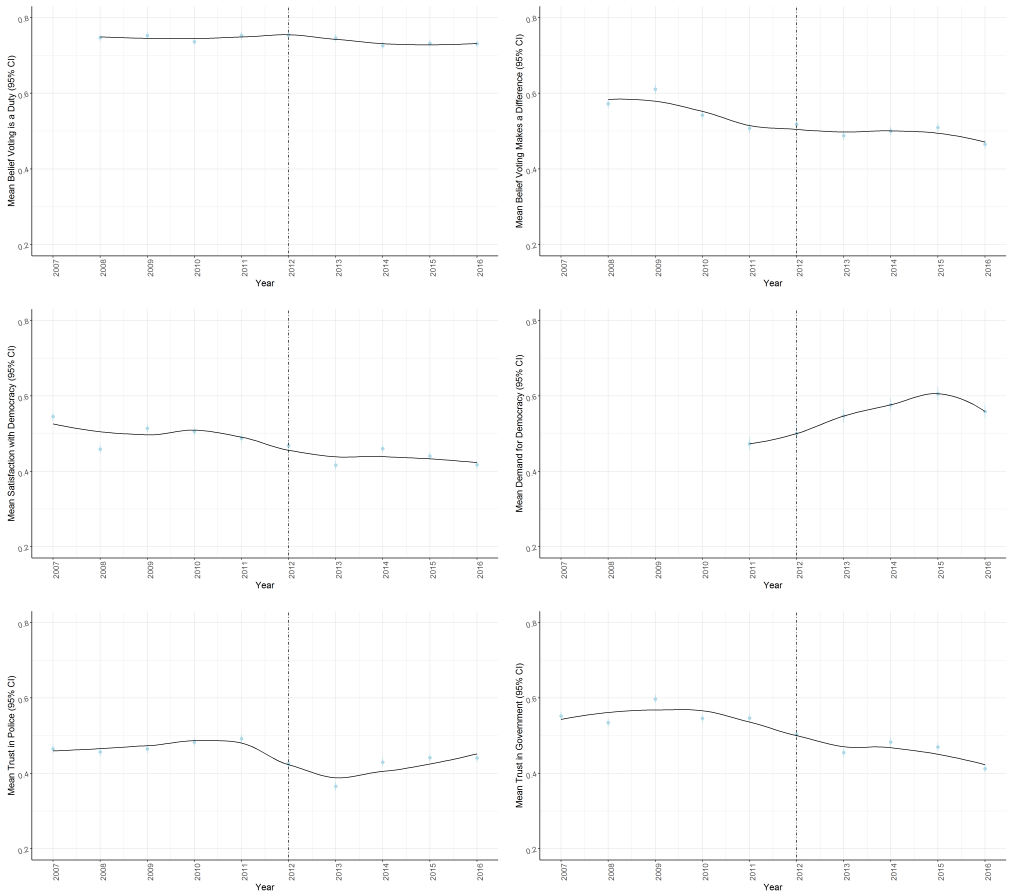


Figure V.12 shows a visible downward trend in five of these measures over time, with the only exception being belief that democracy is the best system of government. In the post-Marikana period, South Africans are less trusting of political and state institutions, less satisfied with democracy, and feel less political efficacious, compared to the pre-Marikana period. These trends are suggestive but hard to interpret. Many other things changed at the national level in South African politics during this period. The electricity crisis deepened, economic fallout from the Great Recession grew more acute, and the scope of Jacob Zuma's corruption became widely known.

We re-estimate our individual level specifications on the attitudinal variables. The results, shown in Table V.29, show precise zero estimates for the difference-in-differences coefficients. We interpret this as evidence that there were no geographically concentrated effects on attitudes as a result of the massacre. Any effects were fully dispersed throughout the country, but we are unable to differentiate those effects from broader trends and political influences.

Table V.29: Effects of the Massacre on Attitudes

	PANEL A: Attitudes About Voting					
	DV = Voting is a Duty			DV = Voting Makes a Difference		
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	-0.021***	-0.042***	-0.045***	0.002	-0.003	-0.014*
	(0.003)	(0.004)	(0.005)	(0.004)	(0.004)	(0.006)
Post Massacre	0.189***	0.198***	0.186***	-0.046	-0.058	-0.057
	(0.057)	(0.056)	(0.056)	(0.070)	(0.070)	(0.070)
Proximity × Post	0.016***	0.016***	0.016***	0.000	-0.000	-0.000
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
Observations	27063	27063	27041	27062	27041	27041
R^2	0.003	0.007	0.014	0.005	0.020	0.021
	PANEL B: Attitudes About Democracy					
	DV = Democratic Satisfaction			DV = Democratic Demand		
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	0.012**	-0.017***	-0.013**	0.007	0.005	0.029*
	(0.004)	(0.005)	(0.005)	(0.010)	(0.010)	(0.012)
Post Massacre	-0.113+	-0.102	-0.069	-0.098	-0.130	-0.131
	(0.063)	(0.063)	(0.063)	(0.151)	(0.149)	(0.151)
Proximity × Post	-0.003	-0.003	-0.000	-0.014	-0.017	-0.017
	(0.005)	(0.005)	(0.005)	(0.012)	(0.012)	(0.012)
Observations	30054	30054	30024	17709	17690	17690
R^2	0.014	0.022	0.048	0.004	0.010	0.015
	PANEL C: Attitudes Toward Institutions					
	DV = Trust in Police			DV = Trust in Government		
	(1)	(2)	(3)	(4)	(5)	(6)
Proximity to Marikana (- log km)	-0.020***	-0.048***	-0.041***	0.013**	0.002	-0.034***
	(0.004)	(0.005)	(0.005)	(0.004)	(0.003)	(0.005)
Post Massacre	-0.054	-0.047	-0.036	-0.122+	-0.056	-0.049
	(0.062)	(0.062)	(0.059)	(0.071)	(0.060)	(0.058)
Proximity × Post	0.000	0.001	0.002	-0.002	0.003	0.004
	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)
Observations	30258	30258	30228	30140	30110	30110
R^2	0.012	0.016	0.029	0.026	0.122	0.131

Standard errors clustered by EA in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

W. Vote Switching or Personal Vote? Analyzing Candidate Lists

Our findings suggest that Julius Malema and Floyd Shivambu found in the events that transpired on August 16th 2012 an issue vacuum that they were able to fill. Once officially formed, the EFF openly campaigned on issues related to the massacre. While communication and issue ownership surely matter in elections, parties also require people to function and thrive – a "ground game" or a "political machine." Two possibilities emerge: Either the EFF splintered the ANC's machine, capturing defecting local elites, or they recruited a new class of political intermediaries. If the former is true, then the switching we document may be evidence of a personal vote and elite defection, rather than typical electoral accountability.

Analyzing data from publicly available candidate lists for the 2011 and 2016 local elections (available for download in original from the IEC website, `https://www.elections.org.za`), it is clear that below the elite level, the EFF was not purely a splinter from the ANC, but instead introduced new political actors to the formal political process. Using name matching (exact and fuzzy), we link records from the 2016 and 2011 elections. We show in Table W.30 that, of the 8231 unique candidates that the EFF fielded in the 2016 local elections at both the ward and district level, only 70 of them had formerly run as ANC candidates in 2011. Of those ANC candidates, none were from the Marikana area. While the EFF did recruit some candidates from existing parties, the vast majority (nearly 95%) were new candidates. Analyzing the identification numbers of candidates, which give their date of birth, we also show in Table W.31 that the EFF candidates in 2016 were systematically younger than the candidates fielded by either the DA or the ANC, suggesting that the party's creation encouraged young people with little prior political experience to contest in formal politics.

Table W.30: 2016 Local Government Elections EFF Candidate Origins (Top 10)

Rank	Origin Party	Totals	Percent
1	New Candidate	7803	94.800
2	Congress of the People	82	0.996
3	African National Congress	70	0.850
4	Democratic Alliance	46	0.559
5	National Freedom Party	42	0.510
6	Independent Candidate	37	0.450
7	Pan Africanist Congress of Azania	21	0.255
8	Inkatha Freedom Party	17	0.207
9	African People's Convention	12	0.146
10	African Christian Democratic Party	9	0.109

Table W.31: 2016 Local Government Elections Candidate Age and Gender, ANC, DA, and EFF

Party	Gender	Mean Candidate Age	Median Candidate Age	Total Candidates
African National Congress	Men	44.45	44.00	4808
African National Congress	Women	46.17	46.00	4503
Democratic Alliance	Men	45.31	44.00	5640
Democratic Alliance	Women	45.28	45.00	2919
Economic Freedom Fighters	Men	38.22	37.00	4830
Economic Freedom Fighters	Women	36.22	35.00	4403

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