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Language of the unheard: police-recorded protests in South Africa, 1997–2013

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ABSTRACT

South Africa remains beset by protest. Notwithstanding an impressive literature, quantifying protests remains problematic; most attempts extrapolate from samples or media-derived data sets. Applying machine learning to the world's largest publicly available, single-country public-event database – the South African Police Service's Incident Registration Information System – the article classifies 150,000 events into type and levels of 'tumult'. The author provides the first holistic picture of all police-reported protest in South Africa over a given period (1997–2013), showing a count increase (partly confirming the 'rebellion of the poor' thesis), while more nuanced measures (i.e. protestors per capita) demonstrate a less urban and tumultuous phenomenon than previously theorised.

Le langage de ceux qui ne sont pas entendus : les manifestations recensées par la police en Afrique du Sud entre 1997 et 2013

RÉSUMÉ

L'Afrique du Sud demeure assaillie par les manifestations. En dépit d'une littérature impressionnante, la quantification des manifestations reste problématique; la plupart des tentatives extrapolent à partir d'échantillons ou d'ensembles de données dérivés des médias. En appliquant l'apprentissage machine à la plus grande base de données au monde accessible publiquement répertoriant tout cas d'événement public dans un même pays – le « système d'information d'enregistrement des incidents » du service de police sud-africain – l'article répertorie 150 000 événements selon leur type et leur degré de « tumulte ». L'auteur fournit la première vision globale de toutes les protestations signalées par la police en Afrique du Sud sur une période donnée (1997–2013), montrant une augmentation des dénombrements (confirmant en partie la thèse de la « rébellion des pauvres »), tandis que des mesures plus nuancées (c'est-à-dire le nombre de manifestants par habitant) montrent un phénomène moins urbain et moins tumultueux que ce qui avait été théorisé auparavant.

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Background

South Africa is a land of protest. Daily, millions of South Africans awake to a country they experience as fundamentally unjust, evidenced by their own hardship, landlessness and unemployment or, for those employed, by the exploitative nature of jobs that labour in the humiliating face of proximate wealth in a highly unequal society. It is in this context that thousands take to the streets, arguably moved by a sense of injustice.

Such protests are increasing. Between 1997 and 2013, on average, more than 11 protests occurred every day across the country (Alexander et al. 2018) with scholars projecting increases since 2013 (Powell, O'Donovan, and De Visser 2015; Runciman et al. 2016; SAIRR 2015). Indeed, scholars project that the number of protests in South Africa has nearly doubled over the 20 years since 1997 (Runciman et al. 2016) or increased by 96% between 2010 and 2015 (SAIRR 2015). As such, South Africa has been dubbed 'the world's protest capital',[1] with the apparent rise of protests in the early 2000s understood as a 'rebellion of the poor' (Alexander 2013).

South Africa is also a violent society by several measures (Seedat et al. 2009), and theorists suggest that protests have become increasingly violent in the post-apartheid period (Düvenhage 2016; Heese and Allan 2012; Hough 2008; Powell, O'Donovan, and De Visser 2015; Tsheola 2012). Important discussions about the role played by police in fuelling violence through so-called crowd containment tactics aside, claims of increasing violence are often asserted, but not demonstrated.

Finally, South African protest is often described as having an urban character (Alexander 2015; Booysen 2007; Noble and Wright 2013). This perception is sometimes viewed as a continuation of 'township rebellion' tactics of 'ungovernability' (Deegan 2001; Sales 1984) witnessed during the struggle for liberation, particularly in the 1980s. Suggestions of a preponderance of urban protests are, of course, likely to be accurate – one expects more protests where there are more people. However, such discourses sidestep the population-density dimension. What might be the theoretical and policy implications if, proportionally, there are more people protesting in *rural* South Africa?

Thus, while existing theory suggests that South African protest is on the rise, increasingly violent and predominantly urban, we lack an authoritative estimate for protests in any period in South Africa, never mind their levels of tumult or geographic tendencies. To best answer these questions, scholarship has indicated that data sets based on police-reported protest incidents are likely to be more thorough than media-derived incident records, as the former are unconstrained by the strictures of what is deemed newsworthy, while the latter might systematically (and vastly) underreport small and rural protests (Duncan 2016).

The increasing availability of machine-learning (ML) applications for the social sciences has made it possible to classify a data set such as the South African Police Service (SAPS)'s Incident Registration Information System (IRIS) into cases of non-protest and protest, and to analyse the protest records by level of disruption (violence). Event records contained within IRIS also convey information, albeit cryptically and sometimes poorly expressed, about the type of protest (i.e. labour-related, community, student-led, etc.), as well as the location in which the protest took place. Moreover, protest records captured by the SAPS often include estimations of crowd sizes at events: this may permit scholars of protest event analysis in South Africa to measure

protestors per capita, instead of just counts of protest, which is significant because the latter tends to obfuscate the true quantum of protest.

A context-appropriate working definition of protest

While mass protest played an important role in overturning the erstwhile apartheid regime, the country's transition to democracy has not resulted in a restoration of material and social relations. Instead, apartheid-era patterns of wealth, employment, education and housing have, in the main, persisted, and in some cases appear to have been reproduced by the post-apartheid state. Several development indices, such as employment levels and inequality measures, suggest that at least some socio-economic dimensions have worsened since 1994. Socio-economics continue to be stratified by race, and consequently continue to play an important role in South Africa's electoral politics (Mattes 2014). It is thus no surprise that neither the practice nor the culture of protest vanished with the advent of democracy. On the contrary, present-day protests can be viewed to a certain extent as evidence of the state's failure to deliver the promised 'better life for all', even as some protests 'attempt to defend and deepen the victory against apartheid' (Ngwane 2011, 15).

Protest is often presented as a means of last resort (Nyar and Wray 2016), inasmuch as it implies that other, official channels for addressing collective grievances are unavailable or exhausted. Overtones of desperation and neglect, and discourses around the changes protest may presage – be they emancipatory, bloody revolutionary, or harbingers of increased repression – permeate the burgeoning protest literature describing twenty-first-century South Africa. Runciman and colleagues persuasively argue for 'a protest' to be regarded as any 'popular mobilisation in support of a collective grievance' (Runciman et al. 2016, 19), a conceptual widening of Tarrow's 'disruptive direct action of collective interest, in which claims are made against some other group, elites or authorities' (Tarrow 1989, 359). I retain the former as my working definition, and, in line with convention, abstractly limit a protest event to a single day (so that a protest lasting two days is classified as two protest events).

Previous estimates of South African protests

To study protest, scholars traditionally have relied on case studies (a common approach is examining three to five protest-prone sites) and media-aggregated data (Alexander 2010; Langa and Kiguwa 2013; Leonard and Pelling 2010; Ngwane 2011). In 2015, Alexander and colleagues altered the South African protest studies landscape by analysing a 4000-case sample from administrative data routinely collected by the SAPS on 'crowd incidents'. In a follow-up study, Runciman et al. (2016) reported that South Africans participated in over 71,000 protests between 1997 and 2013. They further found that only around 10% of police-reported protests in their 4000-sample set were 'violent', while 80% were classified as 'orderly' and the other 10% 'disruptive'.

Although administrative data sets like IRIS offer invaluable insight, they are not without their problems.[2] Moreover, given possible sampling biases, data errors due to imprecise data capturing, and organisational changes at SAPS, estimating the full quantum of protest in South Africa based on an analysis of IRIS's 150,000 events

between 1997 and 2013 is risky (Alexander, Runciman, and Maruping 2015, 88). That said, the sample-based approach to IRIS persists.[3] Despite the above-mentioned inroads, IRIS has not been studied in its entirety, in part owing to its sheer volume.

In addition to the above-mentioned IRIS analyses, other reports support the notion that protests in post-apartheid South Africa have increased in levels of violence. Such reports can be found from commentators recording quantitative (SAIRR 2015) and qualitative analysis (Tsheola 2012) alike. Duvenhage, another proponent of the increased turmoil thesis, colours contemporary South African society in the menacing terms of Huntington's 'Praetorian society' – that is, one that increasingly 'lacks law, authority and discipline and consensus, where private interests dominate public ones, where there is an absence of civic duty, where … political institutions are weak and social forces strong' (Düvenhage 2016, 921). Here, increasingly violent protests represent an alternate form of governance, a way for the masses to hold the African National Congress (ANC) government ransom, and a condition in which levels of turmoil will inexorably rise.

The rebellion of the poor

One compelling interpretation of the increase in frequency, size and turmoil attending protest is the 'rebellion of the poor' thesis, as advanced by Peter/Kate Alexander. Based on the scale of South African protests in the post-2004 period, Alexander described them as confrontational, radical and sufficiently common to herald an insurrectionist 'rebellion of the poor'.[4] Alexander also invoked a 'twin-rebellion', where workers and communities formed separate wings or tiers of this rebellion (Alexander 2015). Perhaps intentionally polemically, Alexander claimed South Africa to be unmatched in terms of 'a similar level of ongoing urban unrest', and, comparing it to 39 other countries (ILO Online 2012), asserted[5] that South Africa had 'more strike days per capita than in any other country' (in 2012).

However, Alexander used 'rebellion' to describe neither the levels of turmoil witnessed nor the influence protests hitherto had on state hegemony (by 2012), but rather the sheer number of protest incidents, which experienced a geographically widespread surge around 2004 (Alexander and Pfaffe 2014) that may eventually 'threaten the rule of the state'. Alexander motivates for using the word 'rebellion', on the basis of the protests being militant and representing a massive movement. While many protests post-2004 have a combative character, Runciman and Alexander (with colleagues) also suggest that protest violence is generally avoided and unplanned (2016), and largely the outcome of police heavy-handedness. The rise in protest militancy clashing with police oppression conceivably culminated in the 2012 Marikana massacre, which Alexander sees as a turning point in South Africa's history (Alexander 2013). Since Alexander's first use, the rebellion nomenclature has been adopted by other social scientists (Pithouse 2011).

Methods

The IRIS data set is generated by the SAPS from logged callouts or planned events involving crowds of people. Described as 'the most comprehensive source of protest or

crowd-gathering data in South Africa' (Lancaster 2018, 31), IRIS is captured by public-order police at the unit level, and is used to monitor public-order interventions, to inform policy and 'motivate for increased funding' (Alexander, Runciman, and Maruping 2015, 10). At the risk of oversimplification, IRIS chronicles 'assemblies, demonstrations, and all gatherings … whether recreational, peaceful, or of an unrest nature' (SAPS 2014, 2). A 'gathering' is defined in The Regulation of Gatherings Act of 1993, which describes it as 'any assembly, concourse or procession of more than 15 persons in or on any open road … or any public place or premises wholly or partly open to the air' (Republic of South Africa 1993). Via the Centre for Social Change at the University of Johannesburg, I obtained access to an IRIS data set comprising over 150,000 event records from 1997 to 2013.

Unlike media-reported protest data sets, administrative data such as IRIS is gathered without regard for newsworthiness. The preference for 'blood-and-flames' reporting, so prevalent in journalistic accounts of protest, has led Duncan to refer to such reporting as 'riot porn' (2016, 147). Such reports also generally omit a critical scrutiny into causes, oversimplify nuance when grievances are reported and neglect the development of events prior to the actual protest event (e.g. meetings, correspondences, the mechanics of mobilisation and the dialectic of persuasion and intimidation). Moreover, media-derived data sets are generally reliant on media being present at protest events in the first instance. As such, protest cases will be underreported in countries where media is censored, protest reporting is proscribed in some way or the media is simply not present. In contrast to media coverage, the capturing of protest incidents by police is more likely to inform a holistic picture of protest (Bruce 2016). Police are incentivised to include all possible events they attend, and they are unlikely to omit certain events for convenience's sake, as the relevant reporting unit is likely to be vying for funding vis-à-vis alternative units in constrained budget environments.

A discussion on the central value of IRIS, and caveats in approaching the data, is presented by Alexander et al. (2018). Omar (2007) notes important changes in South African public-order policing during the 1997–2013 period, while Runciman et al. (2016) further explore the advantages and limitations of using police-recorded data. Notwithstanding its merits, IRIS does contain many inconsistencies and errors, and – as is true with most raw data – requires extensive processing before analysis can occur.

To analyse the whole of IRIS, I developed an event coder, the Machine Learning Protest Event Analysis Keyword Enumerated Recoding (ML-PEAKER), alongside which I proposed a set of ML protocols to read and classify each record. The ML-PEAKER process, which produced the findings presented below, is now discussed in brief. For the development of ML-PEAKER, see Bekker (2021).

To begin, I prepared the data on an air-gapped computer following common practices of data assembly and cleaning, including combining scores of data sets, standardising the formatting and removing obvious mistakes and incomplete records. With the conclusion of these 'pre-processing' steps, I applied the event coder.

The first step was identifying keywords of interest. This required an appreciation of the way police reporting is conducted in IRIS. I spent three months reading cases, initially thematising each, and later adding 21 features (e.g. binary indicators for the presence of labour unions, community associations, weapons or barricades, and multiclass categories for grievance, main tactics, trigger events, etc.). Using 1022 keywords, I identified 36

grievance categories, 13 trigger categories, 14 tactic categories, four actor categories, seven location categories and 11 categories of non-protest. I vectorised these categories to add 105 features to the IRIS set. I allowed for multiple grievances, triggers, actors, locations and non-protest themes per event, but ensured that the tactic for a given event was one-hot-encoded, based on the level of disruption (so that only the most disruptive tactic would be retained). After randomising the records in IRIS, I read and labelled just over 1000 cases as 'non-protest', 'orderly protest', 'disruptive protest' or 'violent protest', thus returning a matrix of dimensions (1008, 106) to train potential learners.

ML represented the second step. ML is a process of discovering labels for hitherto unseen cases. 'Labels' refers to the thing the user wants to affix to data, such as a y-variable, a topic, the desired interpretation or any discrete value that implies membership in some conceptual group (Raschka and Mirajalili 2017). In ML parlance, independent variables are regarded as 'features'. Thus, data is regarded as either labelled (when the labels are already present), or unlabelled, where a labelled record includes both features and labels. 'Supervised learning' is ML based on labelled samples, with the aim of predicting the labels of unlabelled data.

With 1000 labelled cases, I used a train/test split of 70%/30%, iterating over various learners, guided by acceptable classification and misclassification scores. I used, among other types, multiclass models (classifying the cases according to the level of tumult), utilising Naïve Bayesian models, multiclass logistic regressions, decision trees, a support vector classifier and a bootstrap aggregation learner in turn. Once I was satisfied with learner performance, I used the algorithm to 'score' the remainder of IRIS – that is, to classify the remainder of the roughly 100,000 cases.

The third step involved the 'postprocessing' data manipulation, comprising the allocation of protest events to 'type', estimating the aggregate size of protest events, and the time-consuming tasks of assigning each event to a (local or metropolitan) municipality and assigning a 'municipal tumult score' to estimate levels of upheaval within the municipal frame. See Bekker (2021) for the specifics of these procedures.

Count and the general propensity

Studies that report an increase in protest in South Africa have hitherto commented on frequency – that is, they have perceived an increase in the *number* of protests (Alexander 2010; Bond and Mottiar 2013; Booysen 2007; Runciman et al. 2016). Reporting frequencies, also known as count models, are most likely the result of relying on media reports by journalists, which, unlike police reports, generally do not include crowd sizes (especially for small gatherings), or if they do, report what appear to be rounded figures. However, count models do not take the local population size into account, and thus perceive protest to be a principally urban tactic. Differently put, while they are helpful in locating areas of protest, count models will, almost inevitably, focus one's attention on areas with high populations. If, instead, one sought to understand where people are, per capita, 'most protesting', a measure elucidating the 'propensity to protest' might be more appropriate. Recent literature (Biggs 2018) argues persuasively that counting participants enriches students' understanding of the significance of given protest events. Perhaps the closest one can get to measuring the local 'propensity to protest' is to consider the number of participants across all protests, per capita – that is, the 'general propensity' to protest.

Taking crowd sizes into consideration largely corrects the biases introduced by treating small and large protests equally. For example, one might consider municipality A hosting 10 protests, each attended by 20 people in a year, contrasted to municipality B, with 5 protests of 100 people each in the same year. Common approaches would see this example as a case of 10 protests against 5 (suggesting A has more protests), instead of 200 protesters (or participants) versus 500 (which shows that B has more protesters). In addition to this, the per capita calculation ensures that municipal population size is also factored in.

With the ML-PEAKER method revealing both the number of protests per municipality and the average number of participants (per municipality or per protest type, depending on the frame of analysis), it became possible to use respective municipal populations (from the most recent national census, 2011) to calculate a 'general propensity' for protest for each of South Africa's 234 local and metropolitan municipalities.

Findings

Scale

By my analysis of IRIS data, South Africa had 89,052 (police-reported) protests in the period 1997–2013. This figure exceeds the 67,750 police-reported protests for the same period offered by Runciman et al. (2016), even taking into account their suggestion that once undercounts are offset, the best estimate is around 71,000 events. Based on my finding, there were at least 14 protest events, on average, per day in South Africa. Additionally, over the period considered (1997–2013), that daily average rises, with just under 22 per day, or 152 per week, observed in 2013.

Figure 1 depicts this upward trend. While the decline in police-recorded protests for the period between 2006 and 2008 is, as Alexander, Runciman, and Maruping (2015) discuss, a function of a temporary diversion of police resources rather than a decline in events (i.e. less data capturing, not fewer protests), the upward trend, similar to that depicted by Runciman et al. (2016), is self-evident.
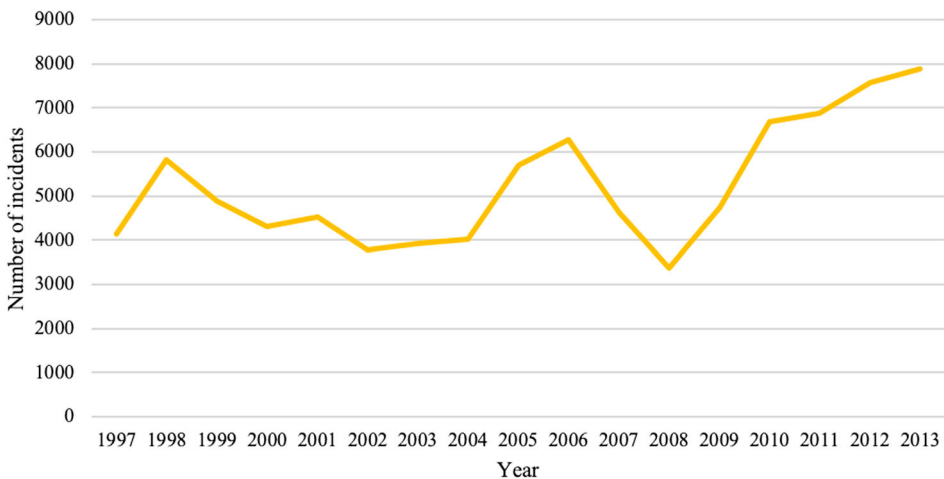

Figure 1. Total police-reported protests, South Africa, 1997–2013.

Community protests, a subset of all protests, followed the same pattern. In 1997 there were 1064 events, whereas in 2013, 2137 were recorded. *Labour-related protests* increased, too. While, to some degree, there remains a cyclical pattern regarding intra-industry protest (with local peaks in 1998, 2001, 2005/06, and 2011 – perhaps related to wage renegotiation schedules), the general trend is also upwards, ranging from 681 in 1997 to 2413 in 2013. Table 1 shows the escalation of the various types of protests over time.

Looking at Table 1 and Figure 2, one notes there are roughly commensurate numbers of community protests and labour-related protests over the observed timespan, and that a sharp increase occurs around 2008 for both classes. *Destination protests*, where actors take their protest to a landmark that may be outside the local municipality (e.g. protests at courthouses, the union buildings or parliament), as well as *other protests* (a category for events that the models could not classify), will also include both community- and labour-related protests. Notwithstanding the underreporting that took place from 2007 to 2009, Figure 2 further shows a general upsurge in all protest types from 2004 onwards. Figure 2 also visualises what appears to be a local inflection point in 2009, where community- and labour-related protests trade positions. It should also be noted that the overall reduction in protests recorded between 2007 and 2010 appears mostly to have affected the recording of labour-related protests, with other classes seemingly less severely affected over this period.

In accordance with protest event analysis protocol, I treated a protest that lasts for three days as three protest events. The use of a 'day' to frame protest events, while practical, carries certain analytical drawbacks. Foremost is the difficulty presented by the crescendos and diminuendos that are the nature of a multi-day protest. By removing and analysing any day-slice without regard for events before and after, one may present an incomplete picture of said instance, not to mention the increased risk of making fallacy-of-composition-style inferences about the entire phenomenon.

Distribution

Protests were found in every municipality of South Africa. Protest counts ranged from two in Ndwedwe Local Municipality (and four in Kamiesberg Local Municipality) to 6564 in the City of Tshwane (with 6274 in the City of Johannesburg) for the 1997–2013 timespan. Kamiesberg and Ndwedwe are small municipalities by population, while Tshwane and Johannesburg are among the most populous municipalities in the

Table 1. Police reported protests by type, South Africa 1997–2013.

|	Community related	Labour related	Destination	National government directed	Health and education related	Police and crime related	Other
1997	1064	681	381	187	456	85	1292
1998	1169	1324	624	230	623	113	1738
1999	1082	1050	497	198	445	61	1539
…	…	…	…	…	…	…	…
2011	1436	2349	861	384	344	138	1356
2012	2108	2226	984	376	468	170	1236
2013	2137	2413	1016	394	416	181	1336
Total	**19,403**	**23,564**	**11,030**	**4809**	**6914**	**1821**	**21,511**
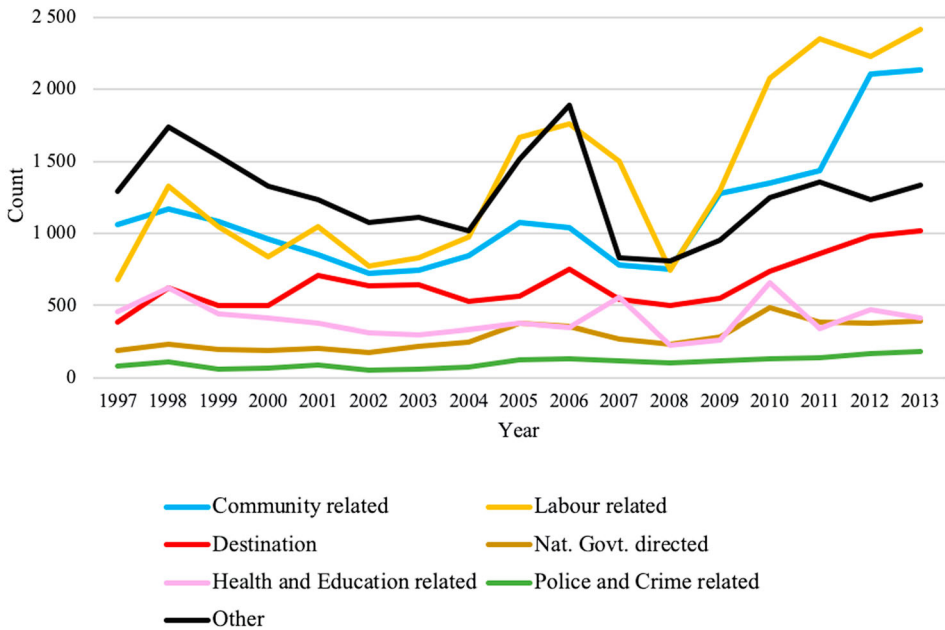
Figure 2. Trends of police-reported protests by type, South Africa, 1997–2013.

country (fifth and first most populated, respectively). Protests recorded in Tshwane include protests at the union buildings (seat of the executive branch of government), and protests at the headquarters of various government departments and agencies, most of which are located in the capital, which helps explain why it hosts more protests than the more-populated Johannesburg.

It is instructive to consider the distribution of protests by municipality. Plotting the number of protests against the municipal tumult score, Figure 3 considers protest events for 2009–13. The plot in Figure 3 illustrates the variation between municipalities, in terms of the number of protests, the levels of tumult and the more obvious variation: municipal size. The uppermost pink bubbles represent Tshwane and Johannesburg, respectively. The small blue bubbles in the bottom right-hand corner represent three municipalities in the Northern Cape – small by population but, based on disorder attendant to local protest, highly tumultuous. While one can see that the number of protests increases broadly with municipal size (i.e. bigger bubbles tend to be higher), the level of tumult is unrelated to population size (i.e. the size of the bubble does not determine whether it will sit to the left or right – that is, whether it is peaceful or violent). Some provinces appear concentrated in one area of the plane; for example, most municipalities in the Northern Cape (blue) and Mpumalanga (red) tend to be located to the right, or on the more violent side of the spectrum. There are also several municipalities (located in Kwazulu-Natal and the Eastern Cape) where none of the protests was disruptive or violent (for these, I calculated a score of 0.1). The most palpable inference, however, is that protest is ubiquitous in South Africa, and not confined to metropolitan or urban settings.

A nationwide map offers another view on the changes in protest patterns. As orientation, Figure 4 depicts South Africa, split (by colour) into provinces.
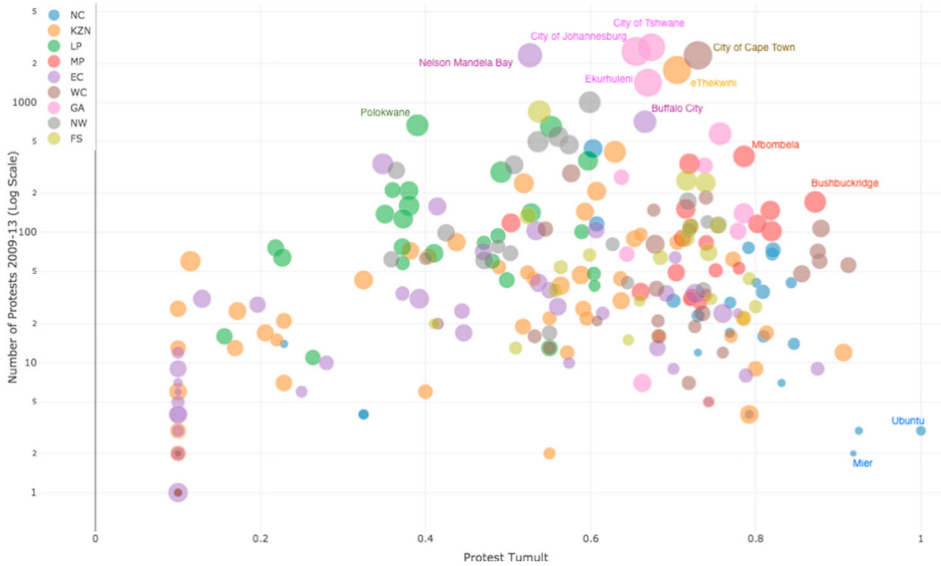
Figure 3. Scatterplot of the frequency of protest against mean tumult of protest, 2009–2013, from the ML set. Source: withheld.

Comparing the population distribution of South Africa (left side of Figure 5) with the distribution of counts of protest (right side of Figure 5), we see a strong overlap. The population centres in Cape Town (and surrounding areas in the South West), and Johannesburg and Tshwane (Pretoria) in the Northern interior. The dark patch on the East Coast is eThekwini (Durban), and the maroon municipality in the Eastern Cape is
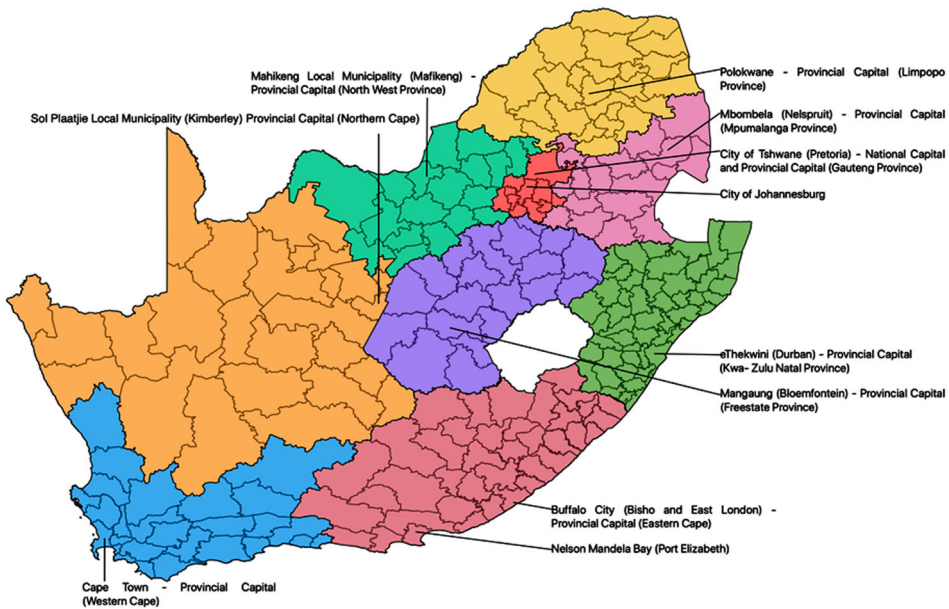

Figure 4. Map of South African provinces, local municipalities and major cities (2011 demarcation).
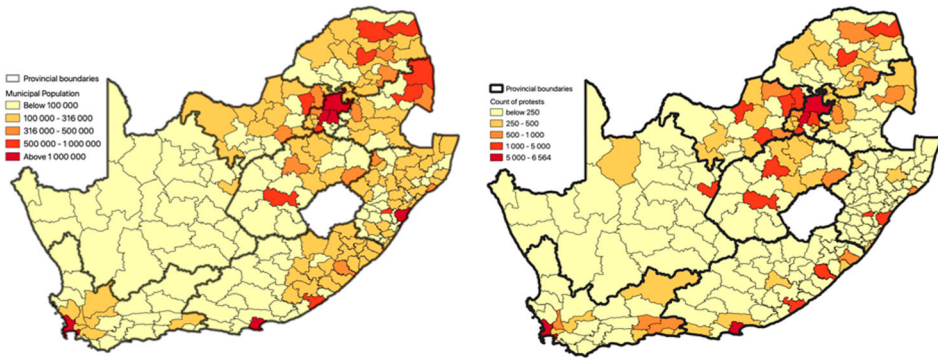
Figure 5. Choropleth maps comparing population of South African Municipalities (2011) to total count of protests (1997–2013).

Note: the geographic units represent local municipalities using their 2011 demarcation. Colour grading runs from light to dark.

Nelson Mandela Bay (Port Elizabeth). Note also the high population along the coast in the municipalities to the South of eThekwini, and the contrast with the municipalities in the Western half of the country (save for those near Cape Town). In other words, Figure 5 confirms the assumption that more protests occur in places that are more populous. Below is a reproduction of only the right half of Figure 5.

Figure 6 may be the first depiction of its kind from South Africa, representing cartographically IRIS's 89,000 protest events. The most prominent protest locations are the municipalities hosting provincial capitals (Bhisho, Bloemfontein, Johannesburg, Pietermaritzburg, Polokwane, Mbombela, Mahikeng, Kimberley and Cape Town) and those comprising sites of major industry or mining (Port Elizabeth, East London, Richards Bay, Rustenburg and Welkom).

Viewed through the lens of provinces, the more populous provinces (e.g. Gauteng, with more than 10 million inhabitants) see more protests than more sparsely populated provinces, such as the Northern Cape (population 1.15 million in 2011). About one in five of all protests in South Africa takes place in Gauteng (Table 2).

The statistics on protests per capita tell an important story. Among provinces, the Northern Cape has the most protests per capita (along with having a profile of violent
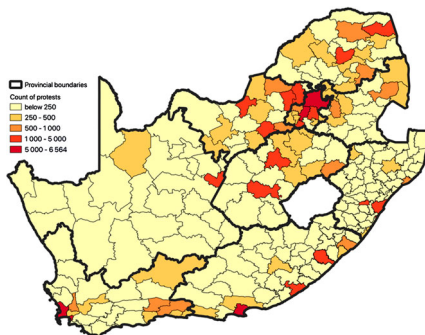

Figure 6. Choropleth map of South Africa depicting protests, 1997–2013, from the ML set.

Note: the geographic units represent local municipalities using their 2011 demarcation.

Table 2. Police-recorded protests per province (South Africa 1997–2013).

	Eastern Cape	Free State	Gauteng	Kwazulu-Natal	Limpopo	Mpuma-langa	North West	Northern Cape	Western Cape
1997	701	662	785	475	251	180	446	124	521
1998	1076	645	1247	533	370	293	634	114	909
1999	1103	414	847	416	262	224	632	101	873
…	…	…	…	…	…	…	…	…	…
2011	815	514	1710	816	722	453	829	271	738
2012	1024	482	1521	879	939	507	1041	278	897
2013	1352	427	1953	1006	807	340	772	173	1063
Total	**14,430**	**7156**	**19,346**	**10,588**	**8204**	**4370**	**11,459**	**2735**	**10,763**
Per capita[a]	**2.2**	**5.3**	**1.2**	**1.4**	**2.7**	**3.6**	**4.1**	**12.6**	**2.5**

[a]Protest per capita is multiplied by 1000 in each case, to facilitate interpretation.

protests). This may be due to the presence of extractive industries (at Alexander Bay and Kathu, among other locations), the influx of economic migrants from the Eastern Cape, poor government service extensions and the lack of state recognition of the Khoisan population as an official ethnic or language group. Communities in the sparsely populated Northern Cape may also feel most disconnected from the state and polity. Thus, neglect, exploitation and alienation are all possible explanations for this high rate of protest. Conversely, the urban, populous and densely inhabited Gauteng has the lowest per capita measure of protests, possibly for similar reasons – a wider variety of jobs, relatively more government services, and a more connected polity. In short, the above data question the impression of protest as a quintessentially urban phenomenon.

Size

Over the 17 years of data I analysed, the size of protests increased almost negligibly. The estimated average crowd size was 435 people per protest in 1997, rising to 452 in 2013. Despite regional variation, the increase in the number of protests did not appear to translate directly into bigger protests.

Crowd size calculations allow for a depiction of 'person-days of protest' (or possibly 'workdays lost') over the period of consideration, calculated as the product of the average crowd size and the number of protests.

Figure 7 shows that protest gatherings in the east of the country were distinctly larger than those in the west. In particular, the Eastern Cape appears to be divisible into eastern (larger crowds) and western (smaller crowds) halves. Similarly, the largest average crowd size was observed in uMhlabuyalingana, the country's easternmost local municipality. In total, South Africa had over 22.4 million person-days of protest over a 17-year period, at an average of 1.3 million person-days per year. This calculation assumes a negligible number of people joined multiple protests on the same day, which may not be the case.

For the various types of events, average crowd-sizes presented as follows. Table 3 shows that *protests against the national government* – typically large rallies and processions – had the largest groups, followed by *education and health-related protests*. Destination protests, despite their high numerical frequency, had the smallest crowds, possibly owing to numerous, small (less than 100 people) gatherings at court proceedings.
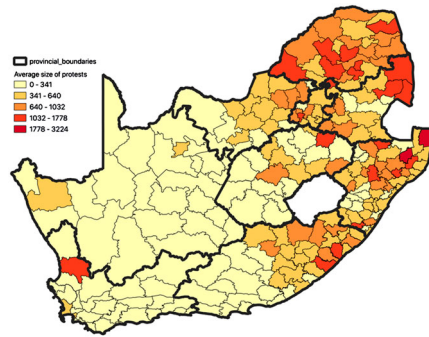
Figure 7. Choropleth map of average crowd size for protests per municipality, 1997–2013.

Table 3. Average size of protest by types (only considering protests where size < 11,000; N = 40,972).[a]

Type of protest	Average size
Community	436.9
Labour related	382.7
Destination	369.8
National government	639.4
Education or health related	533.1
Crime or police related	459.3
Other	408.9

[a]A prudency measure, as large protests may skew averages, despite N counts.

Disaggregated for community protests, person-days of protest came to 4.8 million, and labour-related protests accounted for 5.3 million person-days over the study period. These figures exclude the very significant 'other' type (including all events where type is unidentified), which is likely to contain a large number of both community and labour types of protest, and which could change the ratio significantly. However, based on these statistics, and judging by the large, often countrywide turnouts mobilised for labour-related protests, trade unions appear to be more effective in rallying people to protest than are community structures.

Unsurprisingly, the average size of protest varies widely among municipalities. My method of calculating protest size artificially limits the size of protests at 100,000 people. However, several church gatherings, which are typically not devoid of political content (which I regarded as non-protest events and generally removed from the IRIS set, thus excluding them from consideration) exceeded this limit – for instance, both factions of the Shembe church in Kwazulu-Natal routinely report more than a million attendees at their annual New Year's services.

Tumult

Viewed over time, tumult increased gradually, but almost negligibly. In the period between 1997 and 2013, the average municipal tumult level was 0.351; for 2009–13, this figure rose to 0.356.[6] Table 4 presents the overall class frequencies, again showing that most protest in South Africa is peaceful and, more specifically, orderly.

Table 4. Frequencies of levels of tumult in South African municipalities, 1997–2013.

Level	Frequency
Orderly	73,502
Disruptive	6718
Violent	8832

Returning to the overall levels of tumult, when disaggregated by province, one notes that in every province there are more orderly protests than disruptive or violent protests.

Table 5 also shows that among disorderly protests (i.e. disruptive and violent protests), there is not a uniform pattern: in five (of nine) provinces, there are more violent protests than disruptive ones. As previously established, Gauteng has the most protests, followed by the Eastern Cape. From Table 5, we now also see that the Free State has very few disruptive protests, and that, notably, the Western Cape has more disruptive and violent protests than does the populous Kwazulu-Natal. Moreover, the Western Cape is host to the second highest number of violent protests of all provinces (Figure 8).

Viewed per capita, certain trends are confirmed: the North West, Free State and Northern Cape – provinces that could be typified as predominantly rural – present the most protests. The North West also has the highest per capita number of violent protests over the period under consideration. On the other end of the spectrum, Kwazulu-Natal and Mpumalanga Province (no less rural) have the fewest protests per capita.

Turning to levels of tumult associated with different types of protest, we see in Table 6 that community protests and labour-related protests account for over half of all orderly protests, as well as half of all disruptive protests, and over 60% of all violent protests, when the effects of destination and other/unidentified protests are discounted. Table 6 confirms that 90% of destination protests are peaceful, and that peaceful protests are the most common category for all types of protest. Of the various types, labour-related protests made the biggest contribution to disruptive protests, perhaps surprisingly given the public association between community protests and the blocking of thoroughfares. Equally arresting is the finding that a randomly selected *crime/police-related protest* is almost as likely to be disruptive or violent as it is to be orderly, perhaps suggesting that those protesting against the police are more likely to do so violently, or that protesting against the police is demonstrably more perilous than protesting against employers or local government.

Table 5. Frequency and proportion of aggregated tumult of protests in South Africa, per province, 1997–2013.

|	Frequency				Per 100,000 people			
	Orderly	Disruptive	Violent	Total	Orderly	Disruptive	Violent	Total
Gauteng	15,901	847	2598	**19,346**	129.6	6.9	21.2	**157.7**
Kwazulu-Natal	8652	967	969	**10,588**	84.3	9.4	9.4	**103.1**
Eastern Cape	12,481	1093	856	**14,430**	190.2	16.7	13.0	**219.9**
Western Cape	8437	994	1332	**10,763**	144.9	17.1	22.9	**184.9**
Limpopo	6665	1155	384	**8204**	123.3	21.4	7.1	**151.8**
Mpumalanga	2843	1088	439	**4370**	70.4	26.9	10.9	**108.2**
North West	10,104	143	1212	**11,459**	287.9	4.1	34.5	**326.5**
Free State	6341	55	760	**7156**	231.0	2.0	27.7	**260.7**
Northern Cape	2077	376	282	**2735**	181.3	32.8	24.6	**238.7**
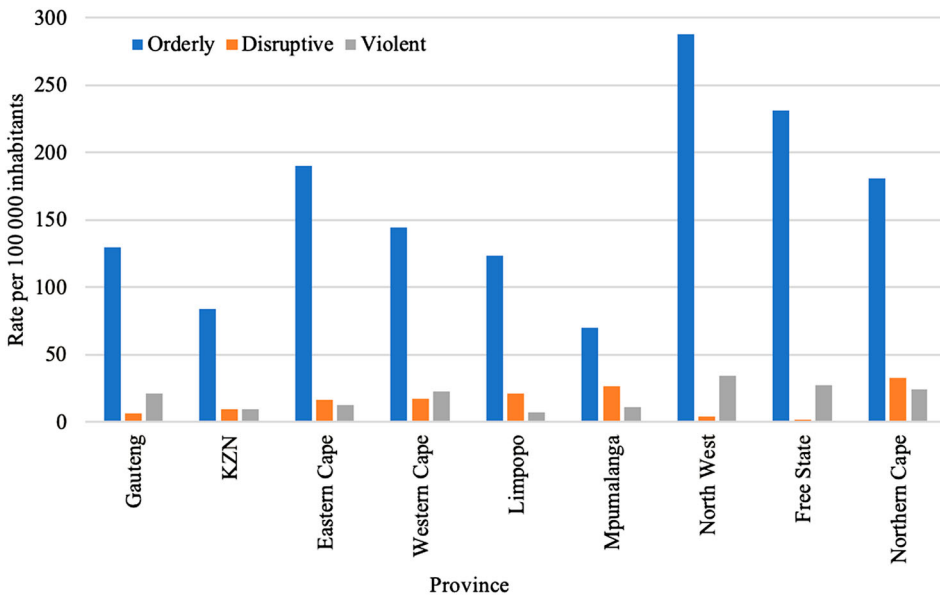
Figure 8. Count of protest by levels of tumult per 100,000 inhabitants, per province, South Africa, 1997–2013.

Discussion: was there ever a 'rebellion of the poor'?

In light of the above descriptive findings, Alexander's 'rebellion of the poor' thesis bears revisiting. To the question 'Did something change in the South African protest landscape around 2004?', the answer must be yes. In line with Alexander's anticipation of a massive rise in popular mobilisation, I found that annual counts of protest events within the IRIS data hovered around 4000 per year from 1997 to 2004; but that over the decade that followed, the counts steadily increased, ending at around 8000 per year. Akin to Naipaul's 'million little mutinies' (1990), the spirit of resistance, as expressed through the number of popular protests of all types, increased sharply.

Nevertheless, some of Alexander's claims may benefit from modification. First, with the benefit of hindsight, it is not clear whether protests really have presented a challenge to the state, especially since the rise in protests failed to coalesce into a united front forcing changes to either the system or style of governance. In fact, the ruling ANC's majority has largely remained unscathed, despite a general increase in the quantum of protest events over the period from 1997 to 2013. It may also be possible that the protests contain an element of the phatic (that is, protest for recognition, not revolution); or a longing for (re)integration into the state, and that they accept the current ideological coordinates of the state, disheartening as they may be. As such, calling the 'rebellion of the poor' 'militant' may be more ideologically aspirational than reflective of its manifest nature or direct effect.

Second, as discussed above, the tendency of the discourse around the 'rebellion of the poor' is to place an emphasis on urban protest. Nevertheless, during the post-2004 period, the distribution of protest shifted, and events in non-urban localities were seen to increase. As can be seen in Figure 9, protest events increased within the country's northern provinces between the two periods.

Table 6. Types of protest in South Africa by levels of tumult, 1997–2013.

	Count of type			Percentage of type (%)		
	Orderly	Disruptive	Violent	Orderly	Disruptive	Violent
Destination protests	9965	491	574	90	5	5
Community protests	14,495	1537	3371	75	8	17
Labour-related protests	19,571	2217	1776	83	9	8
National government protests	4001	396	412	83	8	9
Health/education protests	5439	762	713	79	11	10
Police/crime protests	975	304	542	54	17	30
Other/unidentified	19,056	1011	1444	89	5	7
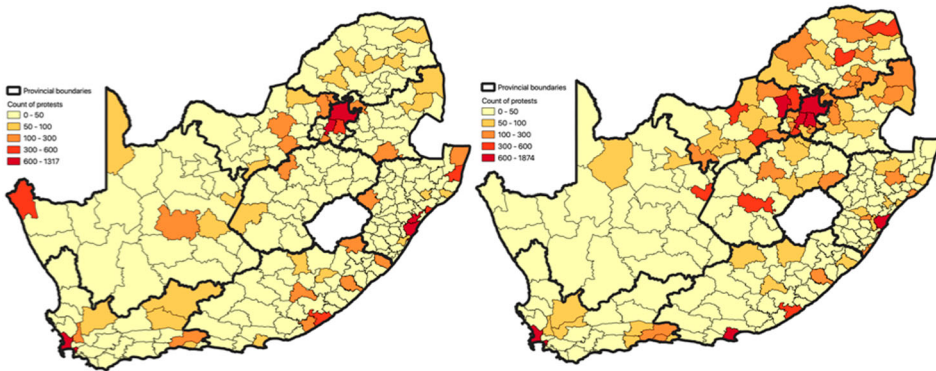
Figure 9. Choropleth maps of counts of protests, South Africa, 1999–2003 (left) and 2004–2013 (right), from the ML model.

Thus, the figures above support Alexander's assertions that protest patterns are complex, but also suggest that depictions of protest as a quintessentially urban phenomenon must be re-examined. That is, even count maps support the observation that a metropole-dominant profile has been supplanted by one showing frequent protests in several rural municipalities, as evidenced in certain flare-up locations, especially in the northern provinces of the North West, Limpopo and Mpumalanga.

Conclusion

Machine learning, as harnessed by the ML-PEAKER series of steps, allowed for the analysis of IRIS, an important and previously only partially studied resource on protest in South Africa. By my calculations, South Africa had 89,052 police-recorded protests between 1997 and 2013. This presents a refinement of Runciman et al.'s (2016) estimation of around 71,000 protests in the same period. The figure presented implies an average of 5238 protest events per year. Over this period there were, on average, 3562 people protesting every day.[7] Each of South Africa's 234 local/metropolitan municipalities hosted at least one protest event between 1997 and 2013, while the country as a whole experienced an average of 1.3 million person-days of protest per year. This quantum appears justification enough for political concern and, moreover, for arguments suggesting some sort of breakdown in normal political discourse. Considering its sheer volume, calling South Africa's protest phenomenon a 'rebellion' appears not to be a hysterical reaction.[8]

At the same time, only 9.9% of South African police-recorded protests were violent. Based on a three-way typology, labelling events as orderly, disruptive or violent, I found the vast majority of protests involved ordinary people voicing grievances in an orderly fashion. Contrary to some (Heese and Allan 2012; Powell, O'Donovan, and De Visser 2015; Tsheola 2012), I found that mean levels of disruption or protest violence have not increased since 1997. The provincial lens further highlighted notable trends, with some provinces (e.g. Mpumalanga) appearing, on the whole, much more tumultuous than others (for example, Limpopo).

By shifting from counting the number of protests per municipality to counting protestors per capita (per municipality), the national profile of protest shifts from predominantly urban to very much rural – a finding that I have illustrated through maps. In addition, a map representing 'average crowd size' of protests (yet another way of thinking about the subject) displays larger crowd sizes in the more populous eastern half of the country. That protests are not prototypically urban (contrary to Booysen 2007) was an unexpected finding. That said, I predictably observed that where there are more people, more people protest (Fox and Bell 2016), a finding that supports claims that the untransformed spatial logic of apartheid may play a strong role in animating protest (e.g. Alexander 2010; Dawson 2014; Pithouse 2008).

My findings also revealed that patterns of protest differed across South Africa's nine provinces. While it was beyond the scope of this study to surmise causes, the results ask us to question the patterns among local characteristics, such as the link between protest metrics and the qualities that translate into a province being an attractive host for commercial agriculture or a chain of mines. Such economic modalities (particularly in the latter case) affect the social landscape, as they are typically attended by factors like migrant labour populations, a high percentage of males and/or very high-income inequality. To wit, the 'mining province' of the North West registered the most community-actor-led protests per capita, with the agriculture-focused Free State and Northern Cape also featuring prominently (the Northern Cape presented the most political-actor-led protests). Provinces are, of course, also subject to different political forces, including governing parties, which may also have a bearing on governance and local willingness to protest.

Finally, the idea of the 'rebellion of the poor' is supported by the data, but with some qualifications. Protests are common and have increased in frequency over time, but have not gained in militancy, if by this one is to read 'increased disruption', a tipping point in ungovernability or a sharp rise in support of opposition parties at the electoral polls. In addition, the rural character of the 'general propensity' to protest requires further exploration.

The ML process did not yield perfect accuracy (and other metrics of fidelity), and there will have been many misclassifications of both protest and non-protest, and of the three-way tumult scores. I take some comfort in the overall volume of events, and the fact that, when considered in aggregate, the trends were consistent.

Moving beyond the present data and expanding the data set to include the period 2014 to the present would not only allow one to review feature performance given new data, but also measure how the nature of protest has changed in the intervening years. Additionally, further research into the suggested rural character of protests may provide insight into this pattern, advancing our understanding of links among protest,

population density and traditional governance, and perhaps even extending to the influence of weather patterns and other seasonal effects. In fact, the processed data is now available to link the 'general propensity' to protest with local conditions, which could provide further insight into the factors leading to protest.

Notes

1. See for instance Rodrigues (2010) or Odendaal (2016).
2. Runciman et al. point out that in 2013, Police Minister Mthethwa announced that South Africa experienced over 46,000 protests between 2009 and 2013, all of which were 'successfully stabilised', conflating crowd events and protest events. They also note that other scholars (Bond and Mottiar 2013) make the same mistake.
3. See, for example, De Juan and Wegner (2019) for an analysis of the role of inequality in animating 'service delivery protest'.
4. This phrase comes from Hannah Arendt's *On revolution* (1963), which Alexander reclaims for the Left.
5. Alexander suggests that South Africa has the world's highest number of 'days lost' per capita per annum. This appears to be false: the same International Labour Organization data set suggests that Cyprus had 0.33 protests per 1000 workers, whereas South Africa had 0.15 (in 2012).
6. Where a score of 1 implies that all protests were violent. This calculation (see Bekker 2021) applies a uniform weighting to municipalities.
7. Even this is likely to be an undercount; conservatively, I equated protests of 'uncertain' size to 15 people gathering.
8. For example, Friedman's (2013) rebuke: 'Calm down, the poor are not about to revolt.'

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