

Actor proliferation and the fragmentation of violent groups in conflict

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Abstract

This paper proposes a novel application of a measure of actor fragmentation drawn from electoral studies to the growing field of conflict event data. The application facilitates comparison of conflict environments over time and across cases, while enabling researchers to take account of the relative activity levels of diverse actors. Analysis of the measure suggests that a fragmentation index diverges from a simple count of active conflict agents in important instances, including in providing a more accurate measure of dominant and weaker conflict agents, capturing dynamics of escalation and continuation of conflict over time and across country cases, and reflecting the coalescence of conflict agents around dominant conflict cleavages. The findings suggest that future research may benefit from combining measures of the discrete count of groups and their relative activity levels in order to accurately capture evolving conflict dynamics.

Keywords

Fragmentation, politics, conflict, violence, data, Africa

Introduction

Violent conflicts differ dramatically in the number of active groups involved: some are dominated by a single non-state actor, such as the northern Nigeria conflict involving Boko Haram; others witness a proliferation of discrete agents, such as the conflict in the eastern Democratic Republic of Congo (DRC). How can researchers accurately measure this proliferation and the activity of diverse conflict actors?

Recent studies have revealed a relationship between the number of violent actors and several important features of conflict, including the duration of conflict, its intensity and the outcomes of attempted conflict resolutions (Pearlman and Cunningham, 2012). However, studies typically rely on a simple count measure of discrete violent agents, and may fail to account for the relative activity levels or strength of different groups.

This poses problems for analysis of complex conflict environments, as measures of actor proliferation typically treat as equivalent a wide array of groups whose activity levels may vary. To address this, I propose a measure drawn from party system fragmentation research, incorporating both the number of violent actors in a conflict and the relative share of violence attributed to each. I compare a simple count and fragmentation index in five high-violence African

states. The results indicate that a fragmentation index diverges from a count in several ways and illustrates important dynamics, particularly in the case of dominant actors and pluralistic conflicts, and periods of escalation and de-escalation of violence over critical periods.

Actor proliferation

A growing literature explores consequences of non-state actor proliferation, including implications for conflict onset (Cunningham, 2013), duration (Cunningham, 2006), intensity (Kydd and Walter, 2006), outcomes (Cunningham, 2011; Cunningham et al., 2009; Findley and Rudloff, 2012; Johnston, 2007; Nilsson, 2008) and particular modalities of violence, such as suicide bombing (Bloom, 2004). A smaller literature explores actor fragmentation as a consequence of political and conflict dynamics, including repression (McLaughlin and Pearlman, 2012), battlefield outcomes

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(Woldemariam, 2014) and political bargaining (Raleigh and Dowd, 2015).

The existing literature remains marked, however, by a lack of consensus on how to measure the multiplicity of actors. Some research focuses exclusively on the number of groups active in conflict, with less attention paid to relative strength or activity levels (Driscoll, 2012). Yet ‘simply counting the number of organizations assumes that each of these organizations is equivalent to one another and that the relationship between them is similar across different cases’ (Bakke et al., 2012: 269). A simple count of violent agents may include some groups that are active at much lower levels than counterparts. Research highlights the significance of agents’ relative strength – at least one measure of which may be their activity levels – to conflict more broadly, including anti-civilian violence by groups of differing strength (Raleigh, 2012), use of violence as part of elite bargaining strategies in the ‘conflict marketplace’ (de Waal, 2009), efficacy of peace agreements which incorporate ‘veto players’ or spoilers (Cunningham, 2006) and the effect of intra-movement power distribution on gaining concessions (Krause, 2014). As such, a measure of the number of groups which treats their activity levels as equivalent risks misrepresenting conflict environments, and mischaracterising the pluralistic contexts in which groups operate.

Fragmentation

One alternative to a simple count of violent groups is to analyse the proportion of violence attributed to each. I propose to modify and expand a concept of fragmentation originally applied to party systems, namely the number of effective parties (Laakso and Taagepera, 1979; Rae, 1971). The original formulation sought to provide a more accurate measure of the degree of fragmentation in party systems whereby, ‘rather than take the number of all existing parties, including even the very smallest, one visibly has a need for a number that takes into account their relative size’ (Laakso and Taagepera, 1979: 3). The calculation does not seek to estimate the real-world size of parties, but rather to provide a measure which represents ‘the number of hypothetical equal-size parties that would have the same total effect on fractionalization of the system as have the actual parties of unequal size’ (Laakso and Taagepera, 1979: 4). It has been used to explore whether a high degree of party fragmentation is politically destabilising, trace trends in fragmentation over time, compare fragmentation across contexts, estimate effects of changes in institutions on fragmentation (Laakso and Taagepera, 1979) and assess disproportionality of institutions (Gallagher, 1991).

I propose to apply this calculation to the conflict environment. Attributed violent events assume the place of votes, as a proxy for the relative strength of an actor, estimated by the violence in which they are involved. This is one of several possible means of estimating relative group strength, using

violence levels as a lens through which to assess activity, presence and relative position in the conflict environment. A related measure might take attributed fatalities as a point of departure to capture intensity of violence, while alternative indices might include troop size, funding or resources at a group’s disposal or the size of territory controlled.

These alternatives capture important dimensions of group capacity, but are subject to several limitations. First, reliable, cross-national and temporally specific data on these factors is often missing: it is difficult to accurately estimate the size or resource base of non-state armed groups which may be closed or clandestine, and particularly to do so consistently over time and facilitate detailed comparative analysis of variation across diverse contexts. For example, recent estimates of the size of the Nigerian militant group Boko Haram range from 6,000 to 15,000 (Amnesty International, 2015; Pérouse de Montclos, 2014). A second, related challenge is that control over territory is relevant only in cases where violent groups seek to seize and govern space, and does not reflect the proliferation of non-territory-seeking violent groups, such as militias, which are shown to have an important role in contemporary conflict dynamics (Jentzsch et al., 2015; Raleigh, 2014). Confronted with the challenge of information gaps and the importance of accurately capturing the range of non-rebel, non-state armed groups in our analyses of conflict, violence levels provide a consistent, cross-national and time-sensitive means by which to proxy, if not group strength directly, then group relevance as a viable security threat, important strategic player and potential rival for state power.

While party fragmentation has been studied in the African context (Lindberg, 2005), the limited applications of the measure of electoral fragmentation to violence concentrate on its use as an independent variable in models of conflict (Reiter and Tillman, 2002; Schneider and Wiesehomeier, 2008; Wilkinson, 2004). To my knowledge, this represents the first attempt to apply this measure to the disaggregation of conflict itself.

Methodology

In calculating the fractionalisation of party systems, the calculation is expressed as

$$N_v = \frac{1}{\sum (P_v)^2}$$

where v = the number of votes received by P , the number of parties. This involves calculating each party’s share of total votes, squaring each of these values, adding these to produce a sum of squares and taking the reciprocal of this sum (Gallagher and Mitchell, 2005: 598). The result is an index which differentiates between electoral institutions in which several parties equally share votes and ones in which the same

number of parties are, for example, dominated by a single power-holder, with a number of groups divided among the opposition. In some instances, the effective number of parties mirrors the actual distribution of votes: for example, where a single party receives all votes, this is calculated as an effective party of 1 (lower scores reflecting a more unitary distribution). By contrast, in a case where a single party receives 60% of the votes and the remainder are evenly split between four different actors, the effective number is calculated as 2.5, reflecting the greater fragmentation of that system.

This paper proposes modifying the use of this calculation by applying it to conflict. The revised formulation is thus expressed as

$$N_e = \frac{1}{\sum (A_e)^2}$$

where e = conflict events attributed to the non-state violent actor (A). When calculated, the resulting measure mirrors the original, with a smaller score reflecting the dominance of a single actor in conflict, while a higher score reflects more equal distribution of violence across groups.

Data for the test is drawn from the Armed Conflict Location & Event Dataset (Raleigh et al., 2010), and the unit for analysis is the country and Administrative Level 1 year. In order to accurately estimate actor fragmentation, several exclusions are applied: first, all non-violent events, such as peaceful protests, troop movement and the establishment of bases, are excluded, as these do not directly speak to the dynamics of inter-group violence under consideration here. Second, all violence except that attributed to named actors is excluded: this results in the exclusion of communal militia activity, such as violence attributed to collective ethnic and religious groups, as well as violence by undifferentiated groups such as ‘Rioters’. This exclusion is applied as these groups are coded in ACLED as singular actors, although for the purposes of understanding discrete group violence, this coding may underestimate the real-world diversity of these groups. The measure also excludes all unidentified armed groups. The full list of actors included in this analysis is available in online Appendix A.

This approach necessarily captures the proliferation of violent actors *across* discrete groups operating under different names, and cannot therefore address intra-group factionalism and splintering, which is extensively explored in existing literature (see Asal et al., 2012; Cunningham et al., 2012; Driscoll, 2012; McLauchlin and Pearlman, 2012; Staniland, 2012). The proposed measure focuses, rather, at the higher level of aggregation at which subgroups or cells within an organisation identify under a common group name, with the assumption that this reflects a degree of shared goals and command, the internal cleavages which characterise many (not only armed) political groups notwithstanding.

Proliferation, fragmentation and conflict in five African countries

The usefulness of this proposed measure is tested through comparison with a simple count of actors in five high-violence African countries: Central African Republic (CAR); DRC; Kenya; Nigeria; and Mali. The cases are chosen because each witnesses a high rate of violence and discrete types of violence, including electoral violence (Kenya), long-running civil war (DRC) and relatively sudden escalations of political violence (Mali, CAR). Additionally, they illustrate a range of discrete actor environments, including those in which a multitude of actors operate (DRC, Mali), those around which central cleavages form the primary mobilising basis for violence (CAR, Kenya) and those in which a single actor is dominant (Nigeria). A simple count of actors (*Count*), a measure of fragmentation (*Fragmentation*) and the total number of events attributed to actors (*Events*) are summarised in Table 1.

Dominant actors and nascent challengers

A fragmentation index is less sensitive to the presence of low-activity groups than a simple count. A measure which affords even groups active in only isolated incidents equal weight with those engaged in much higher levels of violence risks mischaracterising the conflict environment in important ways. For instance, in Nigeria, no fewer than 20 discrete groups were recorded as active in the country in 2014. At the sub-national level, the multiplicity of armed groups is also reflected in this single count measure: in Borno State, the stronghold of Boko Haram, a simple count indicates that in 2014, five discrete violent groups were active in the state. If taken to be equivalent, this suggests a highly fragmented conflict environment, even in a context known to be dominated by a single actor. However, a fragmentation index illustrates that nationally, fewer than three effective groups were involved in conflict across the country in 2014, while sub-nationally the index (with a score of 1.7) better reflects the binary division of the conflict between Boko Haram and state forces, with a small number of nascent, weaker actors (such as pro-state militias) active at a much lower level.

The reverse pattern is apparent in Mali: following insurgency in the north in 2012–2013, accompanied by an increase both in violent events and actors (by both measures), 2014 witnessed a sharp decline in overall violence levels. However, while a count of actors traces a decline in the number of violent groups, the fragmentation index increases. This growing fragmentation reflects the fact that while the absolute number of violent agents has fallen, the relative share of activity in 2014 was more equally divided between groups such as the MNLA, MUJAO and AQIM, and internecine conflict between these organisations has intensified.

Table 1. Measure of actors by distinct count, fragmentation and violent events in five African countries, 1997–2014.

Year	Central African Republic			Democratic Republic of Congo			Kenya			Mali			Nigeria		
	Count	Fragmentation	Events	Count	Fragmentation	Events	Count	Fragmentation	Events	Count	Fragmentation	Events	Count	Fragmentation	Events
1997	8	4.72	60	25	4.31	310	8	1.98	72	1	1.00	6	8	3.69	53
1998	6	5.76	11	18	4.74	426	6	2.05	50	2	2.00	2	11	2.10	53
1999	6	4.17	11	22	5.75	860	7	2.54	100	0	0	0	10	5.87	85
2000	2	2.00	6	13	4.44	247	7	2.23	61	1	1.00	1	14	2.61	64
2001	4	2.12	51	19	8.60	392	8	1.64	53	1	1.00	1	9	3.15	36
2002	9	3.58	70	21	6.25	552	10	3.48	105	0	0	0	13	2.69	83
2003	6	3.73	82	13	5.04	372	3	1.89	48	0	0	0	17	4.89	107
2004	6	3.51	22	20	5.30	212	5	1.64	30	2	2.00	4	21	6.30	144
2005	3	2.13	16	17	5.33	351	8	2.83	62	3	3.00	3	21	5.94	102
2006	7	3.61	67	19	5.30	523	5	2.24	35	4	3.38	14	14	4.78	86
2007	9	2.91	115	18	3.99	376	15	3.21	248	4	2.92	15	15	5.69	81
2008	11	5.36	76	22	4.54	682	8	1.54	181	4	2.23	37	8	4.14	129
2009	13	3.09	125	22	4.34	921	6	2.84	55	6	4.13	16	16	5.15	149
2010	11	2.33	175	20	3.52	346	11	2.87	70	6	3.41	22	30	4.67	233
2011	7	5.12	16	37	5.82	825	11	2.19	103	5	3.01	32	13	3.40	246
2012	11	5.08	81	47	5.83	1082	7	2.31	176	15	5.39	254	17	3.02	675
2013	23	4.53	448	53	8.14	943	13	2.17	236	14	6.42	363	23	3.33	612
2014	19	3.30	843	55	8.01	995	8	2.34	165	11	7.17	128	20	2.86	758

Violence levels across Mali are comparable to those recorded in Nigeria's Borno over the past three years, but divergence between actor measures in both cases illustrates that comparable levels of violence need not correspond to a comparable constellation of violent actors. A conflict which largely reflects a binary division between state and a relatively unitary, non-state opposition can be contrasted with contexts in which multiple, discrete and potentially competitive non-state agents vie both with one another and the state, constituting a 'dual contest' (Cunningham et al., 2012). In addition to informing analyses of the relative variation in the profile of actors and potential competition among non-state armed groups, the proposed measure has implications for theorising and applying negotiated resolutions to conflict. For example, a greater degree of fragmentation may create particular challenges in vesting a larger number of comparably active groups with 'spoiling' or veto power where a simple count of actors obscures differences in relative inter-group power.

Escalation and de-escalation

A second area in which a fragmentation index illuminates patterns otherwise obscured by a simple count is the dynamics of escalation and de-escalation of conflict over time. Observers of conflict in DRC might intuitively conclude that it is more fragmented than the neighbouring CAR. The proposed measurement confirms this: in 2014, DRC recorded a fragmentation index of 8, compared to CAR's 3.3. In this case, a fragmentation index roughly mirrors a count of discrete actors: DRC recorded 55 discrete violent groups, compared to 19 in CAR. Less clear, however, is how the constellation of actors changes over time, and whether the direction of change remains closely correlated between the two measures. For example, the intensification of violent conflict in CAR from 2011 to 2013 is accompanied by an increase in a distinct count of more than three-fold (7 to 23). However, a fragmentation index reveals a relatively steady rate of 4.5–5 over this period and a sharp decline in the conflict's most intense year to date (2014), with a score of just 3.3. While violent conflict has intensified and the overall number of violent actors increased, the majority of this violence is attributed to a stable, and relatively small, number of high-activity groups, primarily involving Anti-Balaka, Séléka and international forces, with a smaller share of violence attributed to other, relatively low-activity non-state armed groups such as the LRA. This reflects the coalescence of violence around dominant conflict divisions, and the persistence of that cleavage over time.

A similar pattern is evident in Kenya. During the escalation of violence in the 2007/2008 electoral period, a discrete count shows an increase in violent actors from 2006 to 2007 (from 5 to 15), followed by a decrease in 2008 (8), the year in which most of the country's post-election violence

is recorded. Similarly, a fragmentation index shows an increase from 2006 to 2007 (from 2.2 to 3.2) and a sharp decline in 2008 (1.5), with violence concentrated among state forces, and militias associated with electoral violence. However, in 2009, a discrete count of actors reveals a decline (6), while a fragmentation index reveals an almost two-fold increase (to 2.8). This divergence reflects the return to a more pluralistic conflict environment in which multiple actors, including state forces, Al Shabaab and numerous domestic political militias, engaged in a more evenly distributed share of violence, with less evidence of coalescence around a single central cleavage.

The differences in these scores reflect the ability of a fragmentation index to better capture the complexity of conflict over periods of intensification and de-escalation. High-violence contexts may, generally, host a larger number of discrete violent groups as existing groups splinter and nascent challengers emerge. However, the cases of both CAR and Kenya suggest that intense escalation of violence may instead be characterised by a declining rate of fragmentation, as most violence concentrates along binary or tripartite cleavages.

Limitations

In spite of several advantages, it is important to note that a fragmentation measure, as critics of its original application point out (Bogaards, 2004; Molinar, 1991), can produce identical measures for different environments. Because both level of activity and number of groups combine to form a concentration index, it is possible that an identical score could be assigned to conflicts with different numbers of groups or levels of activity. Distortion is particularly likely in cases of extreme disparity in party size, such that more than half of votes (or violent events) are attributed to a single actor (Taagepera, 1999). Future applications may seek to incorporate modifications to the effective number of parties' calculation in such contexts.

More broadly, a measure of the wider context of fragmentation of the conflict environment differs from that of electoral institutions in important ways: first, legal boundaries of jurisdiction do not automatically delineate the boundaries of violent conflict, in the way that electoral constituencies might. Violent actors may traverse national and sub-national borders. Similarly, violence is not bounded by a limited number of events, in the way that electoral competition centres on specific numbers of seats. Violence can hypothetically escalate *ad infinitum*, while the number of seats in contest is necessarily limited and – barring institutional reform – constant over time. Together, this means that the calculation of support for a number of actors is not informed by the same logics as those shown to influence voting behaviour (Cox, 1997). Finally, the use, or limitation of the use, of violence may differ from the way in which a

party leverages its share of votes, in that violent actors may be engaged in more violence when they are weakened (for example, being defeated in successive battles), and may choose to limit violence in times and areas where they exercise absolute control.

These challenges cannot be fully resolved, although some (including the differential interpretation of the use of violence) are common to several studies which take the count of violent activity as an indication of group presence or wider conditions of instability. The challenges suggest that the most relevant contexts for the measure's application are those in which violent conflict is relatively geographically contained, and that future research may seek to focus on the effects of fragmentation in conflict contexts.

Discussion

This paper has sought to address a gap in the literature on actor fragmentation that reflects a broader theoretical issue: conflict environments are typically not dyadic, but are complex phenomena (Kalyvas, 2003) in which discrete conflict agents not only proliferate but are also active at different levels. The findings illustrate that an alternative measure of actor proliferation in conflict which takes relative violent activity of groups into account diverges from a simple count in several instances: first, in the analysis of conflicts involving dominant and weaker actors; second, in periods of escalation and de-escalation of conflict over time and across contexts. These illustrations suggest that the growing field of research concerned with understanding the proliferation of armed groups in conflict could benefit from the application of a measure which considers both the relative activity of these discrete agents and their number.

The findings point to two particularly fruitful avenues for further research. First, a fragmentation index facilitates meaningful comparison across cases which may otherwise differ dramatically in their absolute levels of violence: a high violence context may have, as a rule, a larger number of small but largely insignificant factions active within it, the effect of which is reduced through this measure. Future research may seek to understand in which conditions violence centres on binary or tripartite divisions, and in which ones multiple micro-conflicts and bases of mobilisation emerge as potent organising principles. Relatedly, conflict environments or time periods which differ in their absolute levels of violence and in their discrete number of active agents, but share underlying characteristics such as the degree of fragmentation, may share other characteristics, such as the appropriateness of inclusion of different actors in peace negotiations or power-sharing agreements and the role of spoilers. A means by which to compare and analyse this underlying distribution provides opportunities for the expansion of this body of research in new directions.

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