

Solidarity with a sharp edge: Communal conflict and local collective action in rural Nigeria¹

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HiCN Working Paper 183

September 2014

Abstract: This paper provides new insights into the link between the experience of violent conflict and local collective action. I use the temporal and geographical information from four rounds of survey data from Nigeria to relate measures of cooperation to past and future incidences of communal conflict. I show that local collective action, measured in terms of community meeting attendance and volunteering, is highest before the outbreak of violence – higher than both post-conflict levels and the generally lower levels of cooperation in regions not affected by violence. I develop a ‘mobilisation mechanism’ to explain these findings, arguing that, rather than being an indicator of ‘social capital’, collective action ahead of communal violence is inherently ambiguous, and driven by a form of situationally adaptive (and potentially aggressive) ‘solidarity with an edge’. I further show that the positive link between previous exposure to civil war-type violence and cooperation holds for Nigeria, too, but that it holds for rural areas only.

Keywords: violent conflict; collective action; Nigeria

¹ I would like to thank Paul Bauer, Philipp Chapkovski, Diego Gambetta, Pauline Grosjean, Matthias Rieger, Anjula Semmens, Andrej Tusicisny, Nan Zhang and seminar participants at the European Political Science Association’s annual conference 2014 for their valuable comments and suggestions. Further comments to max.schaub@eui.eu are very welcome.

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Introduction

On 15th May 2014, news from Kalabalge village, located in Borno State in the rural north of Nigeria, made it into international newspapers. Kalabalge villagers had ambushed and killed scores of fighters of the insurgent group widely referred to as ‘Boko Haram’ (Al Jazeera 2014).³ Several villagers were killed or wounded in the fighting, but they managed to prevent their village from being raided. According to all sources, the men from Kalabalge village were not trained soldiers. However, they told reporters that they had set up a vigilante group in response to the growing threat – a group that was well enough prepared to defeat fighters of a heavily-armed militia. Only days later, a similar attack of townsmen against Boko Haram fighters was reported from the town of Madagali in Adamawa state (The Punch 2014). In this paper I argue that these and similar incidents may provide insights into a question that in recent years has puzzled scholars studying violence and war: why is it that, rather than being atomised and their social fabric being torn apart, communities that experienced violence appear to be more cooperative and more willing to contribute to local public goods?

There is now relatively consistent evidence from an astonishingly wide range of cultural and geographical contexts that violent conflict is associated with increased levels of cooperation, and, arguably, more cooperative attitudes. Using household surveys, Bellows and Miguel (2009) demonstrate that in Sierra Leone, individuals that experienced violence during the country’s civil war attend community meetings more frequently, are more likely to register to vote and are more often members of social and political groups. They also found that chiefdoms that experienced violence were more successful in raising voluntary contributions to schools. Blattman (2009) similarly shows that Ugandans who were abducted to be deployed as child soldiers are more politically active later on, especially in terms of voting and organising community meetings. Gafaro, Ibanez and Justino (2014) broadly confirm these findings, though they link them to the presence of armed groups and not to exposure to violence as such. Other works have combined survey measures with lab-in-the-field methods. Voors et al. (2012) show that Burundians from villages that suffered relatively high numbers of casualties during the country’s civil war behave more pro-socially in experimental game-play, are more likely to participate in community meetings and more often are members of community organisations. Bauer et al. (2014) demonstrate that Georgian and Sierra Leonean children and adolescents who were affected by violence and displacement share more equally with members of their class or village. Similarly, Gilligan, Pasquale and Samii (2014) find that in post-war Nepal villagers previously exposed to violence live a more vibrant associational life and behave more pro-socially in experimental game-play. In a closely related paper drawing on data from post-war Tajikistan, Cassar, Grosjean and Whitt

³ Boko Haram has been held responsible for numerous attacks on cities, especially in the north of Nigeria, which have claimed at least 4,000 lives in the past 10 years. In the last year, attacks have grown increasingly deadly. While some large-scale urban bombings have received occasional attention, much of this violence has taken place in the countryside (Higazi 2013; International Crisis Group 2014).

(2013) confirm the finding that wartime victimisation is associated with increased participation in groups. However, they caution that this effect goes along with strongly undermined trust in other locals and an unwillingness to engage with unknown others. Most of the authors exploit data from rural settings collected several years after hostilities ceased. These papers therefore demonstrate a link between *past* exposure to violence and levels of cooperation in *rural communities*.

This paper builds on and adds to this recent literature by exploring the link between conflict and cooperation through survey and experimental data from Nigeria. Local collective action (here sometimes referred to simply as ‘cooperation’) is narrowly understood as the act of devoting individual resources in terms of time and energy to the local public good, and measured in terms of community meeting attendance and volunteering. This also means that, in line with the literature discussed, local collective action refers to *ingroup* cooperation – cooperation within a local community – as opposed to cooperation bridging communal or other (e.g. ethnic) divides.

This paper builds on and adds to this recent literature by contributing four points to the debate. First, I replicate the finding that violent conflict is followed by higher levels of cooperation in Nigeria, too – a case that previously had not been studied. Second, I show that the positive association between conflict and cooperation only holds in rural areas. In urban areas, the correlation is non-existent or even negative. Third, and most important, I show that higher cooperation levels not only proceed conflict events, but, in fact, precede them too. Indeed, the highest levels of local cooperation can be observed before the onset of violence. Finally, I show that local collective action ahead of conflict is likely a response to uncertainty and threat, rather than an expression of deep-lying preference changes. I put forward a ‘mobilisation mechanism’, which I conjecture is behind these results. At the core of the mechanism are the security dilemma arising where intergroup competition develops in the absence of a centralised sanctioning power, and the inherent potential for cooperation to turn aggressive towards outsiders. Faced with mobilisation of a rival group, the best response of the first group is to mobilise as well. This mechanism implies the possibility that a) cooperation actually causes conflict, and b) what we observe after the conflict might be carry-over effects from pre-conflict mobilisation.

The first part sums up ethnographic accounts of rural communal conflict in Plateau State, Nigeria. Nigeria, and particularly the centrally located Plateau state, has a legacy of communities – typically defined in geographic, ethnic and religious terms – fighting each other over resources and political control, with the Nigerian state often merely standing by. This type of violent conflict is particularly apt for studying social dynamics surrounding violent clashes. In the second part, I discuss mechanisms other scholars have put forward to account for the link between exposure to violent conflict and local cooperation, and outline the mobilisation mechanism that looks at pre-conflict mobilisation. Third, I will present my data, empirical strategy and results. I show that there is a positive relationship between cooperation and exposure to communal conflict. Exploiting the time differences between different survey rounds, I show that cooperation rates are highest among those individuals living in dis-

tracts where conflict is about to happen. In line with the literature, my case study and most of my empirical analysis is concerned with rural areas only. Indeed, extending my analysis to include data from urban areas, too, I can show that the results derived are geographically contingent – they only hold for rural areas. The fourth section discusses the implications of these results for our understanding of the interaction between conflict and cooperation. The fifth section concludes and gives some policy recommendations.

1. An illustration: Communal conflict in rural Nigeria

I start with an example of communal conflict in Nigeria's middle belt. The example demonstrates the social dynamics both preceding and accompanying the outbreak of violence. One defining characteristic of communal conflicts is their high degree of symmetry – it is communities that are the primary actors fighting each other, while the state with its superior firepower only intervenes at times, and often merely stands by. Another one is the conflicts' broad social base – large parts of the communities are involved in defence and attack. Therefore, the social dynamics underlying what I will later call the 'mobilisation mechanism' show particularly clearly here.⁴

Violent communal conflicts have been a recurrent phenomenon during the last two decades of Nigeria's history. In Africa's most populous country, the fault lines along which conflicts can arise are manifold: ethnicity, religion, politics, distribution of riches and modes of economic production. Nigeria is home to some 200–400 ethnolinguistic groups (Sklar 2004, 39), providing accessible markers for dividing friend from foe. An approximate north–south divide between predominantly Muslims in the north and mostly Christians in the south adds a combined religious-ideological dimension to many conflicts. Fierce battles between political parties (many of them with a distinct ethnic imprint) are also fought across this divide (International Crisis Group 2006). Enormous amounts of oil money – Nigeria was in 2012 the fifth-largest crude producer in the world (EIA 2014) – channelled by means of jaw-dropping corruption into the hands of the very few, fuels competition for a share of the spoils and widespread frustration (International Crisis Group 2006). In rural areas, conflicts between farmers and pastoralists have been exacerbated by divisive land-use legislation and strong population growth (Hi-

⁴ The focus on communal conflict, chosen here to demonstrate clearly the 'mobilisation mechanism' may limit the applicability of the argument to other forms of violence and war – e.g. repressive violence by the government, or full-out civil war. However, especially in rural areas, the communal violence described strongly resembles violence waged in civil wars as described by Kalyvas (2006) (where the government is typically involved as one of the actors). In Kalyvas's (2005) classification of violence in civil wars, the fighting described here would be labelled 'symmetric non-conventional' warfare.

gazi 2008, 111; International Crisis Group 2006, 3).⁵ The conflict described here is fought largely along this last fault line, although it clearly features an ethno-religious and political dimension, too.

In September 2001, Jos, the capital of Plateau State in central Nigeria, experienced large-scale riots that pitched Christians and Muslims against each other and left up to a thousand people dead (Human Rights Watch 2001). From the city, violence spread southwards to the rural lowlands of the State, unleashing a cycle of attacks that lasted until May 2004, at which point a state of emergency was enforced (Higazi 2008, 109; Human Rights Watch 2005, 48). Unlike in the city, where violence erupted more or less spontaneously and then ceased,⁶ fighting in the countryside spread relatively slowly and in a rather structured manner – but it was no less destructive. By 2004, up to one hundred villages had been destroyed and depopulated and at least 2,000 villagers had been killed and many more displaced (Higazi 2008). Violence was typically wielded across ethno-religious lines, with the largely Christian Tarok, Goemai and other groups attacking Muslim Hausas, Fulani and others, and vice versa.

At the heart of the conflicts in Plateau state are disputes over land use, political influence, and offices. Nigerian law gives special privileges to ‘indigene’ groups – groups that can somehow show that their ancestors have lived in a region for several generations – in preference to ‘settlers’. The latter have diminished rights to land and political representation on the local level (International Crisis Group 2012). In Plateau state south of Jos, Christian groups are typically classified as ‘indigenes’, while the Muslim groups, who appear to have migrated to the region more recently, are defined by law as ‘settlers’. On top of these distinctions come conflicting modes of economic production: many of the Muslim groups (especially the Fulani) are cattle-herders, while most Christian groups are farmers. In the context of strong population growth, this has increasingly led to tensions over access to farming and grazing land. Despite these tensions, before the onset of the violent clashes groups often lived together, and sometimes intermarried (Higazi 2008).

Violence started with minor incidents,⁷ but these incidents soon set in motion an upward spiral of retaliatory attacks and counterattacks. Vigilante groups played an important role in the escalation process, blocking roads and carrying out initial attacks. Such groups, usually consisting of young men from the community, had become a prominent phenomenon all over Nigeria. The rise of vigilante movements came in response to increasing crime rates in the context of the lessening grip of the military regime and transition to democracy in the late 1990s and in several cases these movements had transformed into predatory actors by the mid-2000s (Human Rights Watch 2002; 2003). In southern

⁵ At independence in 1960, Nigeria had 45.2 million inhabitants. In 2010 the population stood at 159.7 million (United Nations 2012).

⁶ In her forthcoming book, Alexandra Scacco seems to argue that much of the violence in the 2001 riots may have occurred rather spontaneously, with people more embedded in grassroots local networks (and thus exposed to peer pressure) and poorer people somewhat more likely to participate (cp. Scacco 2012).

⁷ Higazi (2008) reports of disputes over local government and clashes over whether young Muslim men had the right to enter into relations with Christian girls.

Plateau state, vigilante groups had often been composed of both Muslims and Christians. Higazi (2008, 128) reports that in the “weeks preceding the outbreak of violence in the lowlands, mixed communities organized vigilante patrols in response to the growing tension.” However, upon the beginning of hostilities, they split up along religious lines. What used to be local vigilante movements, often serving one village only, were reshaped – sometimes under the oversight of ex-military commanders belonging to the communities – into militias operating in the wider region.

The objective of the violence soon turned from revenge to systematic massacre and the driving out of rival groups from certain locations. As a result, the ethno-religious composition of villages and towns seems to have become more polarised throughout Plateau state (Higazi 2008; 2013; Human Rights Watch 2013). Attacks were usually conducted by night and on foot. Attackers either targeted and killed men belonging to the other group, or attacked men, women and children indiscriminately (*ibid.*). The militias used increasingly lethal weapons, including assault rifles and sub-machine guns, further escalating the number of victims resulting from each attack (Higazi 2008). Other social actors got involved in the escalation of violence, too. After having been attacked by Fulani militias with modern weapons, Tarok church leaders reportedly allowed funds intended for missionary activities to be used for the purchase of similar weapons (Blench 2003a). While state actors may have supported one side or another at various points in the conflict, the Nigerian state made its impact mainly through being absent: in most recorded cases of attacks, security forces either did not react or intervened only hours or days after fighting had ceased. In almost no cases were attacks followed by criminal investigation or persecution (Human Rights Watch 2005; 2013).

We can infer that the cycles of attacks and counter-attacks must have gone hand in hand with heightened coordinative and cooperative activities. Mustering and training a militia is a collective activity. In reaction, members of the rival groups would either have to flee or come together to form a militia themselves. In Plateau state and elsewhere, community leaders sometimes called for meetings before violence escalated, negotiating with all sides to prevent violence in their localities, with varying success (Blench 2003b; Higazi 2008). At the same time, at least for more recent episodes of violence (in response to which limited criminal persecutions took place), there is evidence that meetings sometimes also took the character of war-councils. Two men convicted of taking part in the Dogo Nahawa massacre in 2010 described how meetings were the forum in which the decision to attack the settlement was taken. The court report stated that “everyone at the meeting was assigned a role in the mayhem”, and it was decided how much everyone would be paid (Human Rights Watch 2013, 79–80).

In Plateau state, communal fighting was thus preceded and accompanied by considerable social mobilisation. What is more, the recursive nature of episodes of violence meant that groups were ill-advised to lower their level of mobilisation by much even after fighting had ended. While this evidence is still anecdotal, it points in the same direction as the argument I seek to make in the following pages: that

high cooperation levels in the context of communal violence may have just as much –or more – to do with mobilisation prior to the conflict as with the experience of fighting itself.

2. Potential mechanisms linking exposure to violence and local cooperation

As discussed above, the literature is rich in evidence of a positive association between exposure to wartime violence and pro-social behaviour. On the other hand, evidence on plausible mechanisms is still sparse. The most frequent mechanism cited to explain the positive link between violence and local collective action is a change in individual preferences following the experience of violence. For instance, Bellows and Miguel (2009) point towards literature that sees the experience of traumatic events, including war experiences, as psychologically formative (in the form of ‘posttraumatic growth’ (Tedeschi and Calhoun 2004)) or transformative of local social norms. Blattman (2009), too, cites the individual psychological impact of the experience of abduction as the most likely mechanism to explain his results. In a similar vein, Voors et al. (2012) take their data as evidence that villagers changed their individual preferences towards cooperation in response to exposure to violence. However, these findings have yet to be reconciled with research demonstrating that wartime experiences often leave the witnesses traumatised and retreating from society (e.g. Basoglu et al. 2005; Pham, Weinstein and Longman 2004; Vinck et al. 2007).

Alternatively, it has been suggested that local collective action in the wake of conflict may be driven by group dynamics. In their paper on post-war Nepal, Gilligan, Pasquale and Samii (2014) present evidence for a ‘purging mechanism’ by which less socially minded individuals were more likely to flee the violence. They find that people in war-affected villages are on average older, and conjecture that it is the younger and better-educated household heads that leave to find employment elsewhere. They go on to argue that, being focussed more narrowly on family matters, these younger people typically would drag local cooperation levels down, so their absence allows for more social cohesion. What is more, they interpret their finding that more remote villages feature an even higher level of pro-social behaviour in response to exposure to violence as evidence of a social-psychological ‘collective coping’ mechanism as described in the social psychology literature (Lyons et al. 1998). Gafaro, Ibanez and Justino (2014) shift the emphasis away from the direct experience of violence and its effect on individuals or community dynamics. Rather, they link the observation that post-violence communities cooperate more to the presence of armed groups in these communities. They present evidence that armed groups force locals to cooperate more, rather than them choosing to increase collaboration voluntarily.

Unfortunately, my measure of exposure to violence is not fine-grained enough to allow me to test the individual preference change, ‘purging’ or coercion mechanisms. I therefore have to restrict myself to testing for the observable outcome implied by both the individual- and the group-level mechanisms –

that communities previously exposed to violence cooperate more after hostilities have ceased. As a first hypothesis I will therefore test whether *in districts exposed to communal conflict, people attend community meetings more regularly and volunteer more frequently*.

To the list of mechanisms just outlined I add a further mechanism, which I will call the ‘mobilisation mechanism’. Rather than focussing on post-violence cooperation, this mechanism emphasises the social dynamics preceding conflict. In a nutshell, I argue that cooperation, understood as increased contributions to the local public good, often precedes conflicts. It is then reinforced in a dynamic process in the run-up to and during conflict, and may carry over to the post-conflict setting. The term ‘mobilisation’ here is meant to capture both a more stable element of increased social cohesiveness, and the dynamic process of social agitation. Rather than seeing local collective action as some form of positive social capital, I argue that cooperation in the context of war is inherently ambiguous. It might serve the goal of defence only, but it has the inherent capacity to be used for offensive purposes, too. Wartime solidarity, then, comes with a sharp edge.

The ‘mobilisation mechanism’ relies on three ideas. First, cooperation is inherently ambiguous, and not solely and universally beneficial, as is sometimes suggested in the ‘social capital’ literature. Groups can cooperate for any purpose, benign or malicious (Gambetta 1988, 214; Portes 1998, 15). The idea that cooperation carries an inherent potential for aggression can be traced back to the 14th century historian sociologist Ibn Khaldun (2005, chap. 1) and has been a prominent theme in 20th-century sociology (Coser 1956; LeVine and Campbell 1972; Sumner 1906). Recently, the idea has been given a modern overhaul by Bowles and Choi, who argue that altruism co-evolved with potentially aggressive parochialism (Bowles and Choi 2003; Choi and Bowles 2007). Second, originally benign cooperative ventures can serve as a basis for organised violence. Turning a relatively benign group like vigilantes – whose original purpose might simply have been to prevent petty theft – into a militia is arguably more quickly achieved than mustering a militia in absence of such structures already in place. Third, competitive contexts lacking a third-party arbiter can start-off cycles of mobilisation and counter-mobilisation, leaving groups trapped in a ‘societal security-dilemma’-type situation (Roe 1999; 2005). Potential or overtly malign cooperation within one group makes equal cooperation the best response for the group feeling threatened. This certainly applies to mobilisation for collective violence. In the case of the conflict in Plateau State, Nigeria, the mustering of a militia by one group was mirrored by the same action by the other group.

The intergroup competition situation may help to overcome the internal collective action problem each group faces, especially when the threat is perceived as indivisible or existential (Abbink et al. 2010; Bornstein 2003; Bornstein and Ben-Yossef 1994).⁸ This also implies that high cooperation lev-

⁸ In this case, the intergroup prisoners’ dilemma that can be used to model regular collective action problems is transformed into a step-level collective goods game, which has a cooperative equilibrium (Bornstein 1992).

els before, during or after conflict are not forcibly driven by cooperative attitudes, which might explain the disjoint of trust and cooperation observed by Cassar et al. (2013). From this it follows that certain forms of cooperation may actually *cause* violence, by *triggering* the societal security dilemma mechanism. However, this is not to say that this is what happened in the case of the escalation of violence in Plateau state. The evidence – for example that the first vigilante movements set up combined Muslims and Christians – appears to contradict this. More importantly, from the mobilisation mechanism it follows that we would expect violent conflicts to be *preceded* by a cycle of mobilisation and counter-mobilisation, driving observable levels of cooperation up. Finally, there is a possibility that high mobilisation levels from before or after the conflict are ‘carried over’ to the post-conflict period – either because participants in wartime cooperation have become ‘used’ to cooperating, or because a higher level of perceived threat persists.

From the logic of the mobilisation mechanism we can derive two further hypotheses. For one, we expect a positive correlation between local collective action and future conflict. Hypotheses 2 can therefore be stated as follows: *In comparison to non-conflict regions, districts in which violent conflict is to take place in the near future show increased levels of community meeting attendance and volunteering.* Since increased cooperation in the wake of violent conflict is rationally adaptive and not an expression of underlying (changed) preferences, we can add to this a third hypothesis: *Increased cooperation ahead of conflict does not go along with particularly cooperative attitudinal or behavioural patterns.*

3. Data and empirical strategy

For the empirical tests, I combine data from four rounds of Afrobarometer surveys conducted in Nigeria in 2005, 2007, 2008 and 2012 with information on violent conflict taken from the UCDP GED (Sundberg and Melander 2013) and ACLED (Raleigh et al. 2010) datasets. My main measure for local collective action is community meeting attendance. In the Afrobarometer surveys, respondents are asked to choose one of five answers in response to the question of whether they have attended community meetings during the past year. As the categories cannot be placed on an ordinary scale, I recode this variable into a binary variable that takes the value 1 if the respondent answered that she did so ‘several times’ or ‘often’, and 0 if else. The second measure of local cooperation is volunteer-group membership. This variable is coded 1 if a respondent answered that he is an active member or official leader of a voluntary association or community group, and 0 if else.⁹ Unfortunately, this question was not included in the 2005 round of the Afrobarometer survey, so I can run my analyses on a reduced sample only. Afrobarometer provides the place of the interview. In Nigeria, this was often the Local

⁹ Here, the other possible answers were ‘Not a member’ or ‘Inactive member’. Detailed information on the coding of variables can be found in Table 7 in the appendix.

Government Area, but other times it was a specific town or city. Based on this information, I georeferenced the interview data using Google Maps' API and various gazetteers.

Conflict data for the independent variable comes from both the UCDP GED and the ACLED datasets. In the main I rely on UCDP GED data. The dataset documents violent clashes belonging to those conflicts resulting in more than 25 deaths per year, and for which the actors involved can be identified. Through this restriction, a certain threshold is set to exclude criminal violence. For all events, geocoordinates are included. UCDP covers the period from 1989 to 2010 only, however. For the missing two years I therefore rely on conflict information from ACLED, which also provides geocoordinates but includes non-lethal incidents and incidents that cannot be attributed to a specific actor. To ensure comparability, from the ACLED data I only retained records for lethal clashes that included full information on actors. In this paper, I am solely concerned with communal conflict. I merge all georeferenced information to a common metric: the Global Administrative Unit Layers (GAUL), an inventory of world administrative regions provided by the UN Food and Agriculture Organization (FAO 2008). I use Admin 2 districts, the smallest unit included, as my unit of analysis. This metric allows me to relate conflict and survey results to each other and to calculate district-level control variables. Figure 1 shows the distribution of districts with interview data and communal conflicts within Nigeria. Plateau State, where the illustrative example is drawn from, is highlighted.

[Figure 1 about here]

To test for the overall association between previous conflict exposure and local collective action I triangulate my analysis by using three different specifications of the independent variable. First, I use a binary measure that takes the value 1 if the district experienced a communal clash any time between 1991 and *before* the interview was conducted.¹⁰ As further explained below, I use a variation of this measure as dependent variable when testing hypothesis 2. Second, I code an observation as 1 if the respondent is of an ethnic group that, *before the interview took place*, was involved in a conflict in the district where the respondent was interviewed (i.e. if that person potentially was a conflict actor), and 0 if else. I use the qualitative description included in the UCDP GED and ACLED datasets to construct this indicator. Finally, I measured the distance (in 100km) between a given interview location and the location of the closest incidence of communal violence. If violence has an effect on cooperation, we can assume that this effect diminishes in distance.¹¹ In all cases, observations from districts that did not experience any conflict at all serve as comparison and are coded as 0.

¹⁰ See Figure 6 in the appendix for a graphical representation of the distribution of conflict over time.

¹¹ This last specification does not allow me to distinguish whether the closest conflict event took place before or after the interview, so it should be considered a more general measure for the effect of past or future exposure to violent conflict.

Controls, omitted variable bias and reverse causation

As control variables I use factors plausibly related to both the incidence of conflict and cooperation rates. These include the individual control variables age (and its squared term), gender, education, whether the interviewee lives in a rural or urban area, how regularly she or he goes without cooking fuel (as a measure of poverty) and whether he or she possesses a radio (as proxy for access to information). In terms of structural controls, for each district I calculated average values for terrain ruggedness, population and area size, ethnic fractionalisation, economic environment (nightlight intensity and deviation from mean rainfall), state presence (measured as distance to the national capital and by a composite index adding up the number of state institutions present in a district) and a district's history of slavery (Buhaug and Rød 2006; Collier and Hoeffler 1998; Fearon and Laitin 2003; Henrich et al. 2010; Miguel, Satyanath and Sergenti 2004; Nunn and Wantchekon 2009; Raleigh and Hegre 2009). An important tertiary variable is the remoteness of a district, measured as the average time it takes to travel from any point in the district to a town with 20,000 or more inhabitants.¹² For most of my analyses, I restrict myself to a sample from rural regions, where the average travel time to reach any town of 20,000 or more inhabitants is over 1 hour. In doing so, I make my results comparable to the other cited studies, which were all conducted in rural areas. In Section 4, I also provide comparative results for more urban regions. The focus on communal conflict leaves me with a maximum sample of 6,428 observations from rural areas on which most of the analyses will be conducted, and 1,781 observations from urban areas. However, missing data means that I often have to resort to smaller sample sizes. Summary statistics for all variables can be found in Table 1.¹³

[Table 1 about here]

Despite the large number of control variables, omitted variable bias remains a problem. What if some groups or inhabitants of certain regions, for cultural or historical reasons other than those captured in the control variables, are more likely to engage in local collective action and in violent conflict? In order to address this problem, I include fixed effects for nineteen different ethnic-group and fixed effects for the original three regions of independent Nigeria.¹⁴ I thus assess the averages of the variation within these groups – i.e. among individuals who share a similar place of living and a similar socialisation.

Typically, authors take great care to ascertain the direction of causality in accordance with their argument. All of the previously cited authors argue that the direction of causality runs from exposure to

¹² This variable was calculated from data provided by Harvest Choice (2010). A detailed description of the structural control variables and how these were measured can be found in Table 7 in the appendix.

¹³ As can be seen in Figure 1 (the map of Nigeria) above, the restriction to rural districts does not greatly reduce the geographical breadth of my analysis.

¹⁴ The original state borders of 1963 largely corresponded to the rough division of Nigeria into a Hausa/Fulani-dominated north, a Yoruba-dominated west, and an Igbo-dominated east.

violent conflict to increased cooperation. However, I here argue that causality may run both ways: conflict exposure may cause enhanced cooperation (as other authors have often convincingly shown), but also cooperative behaviour may cause, or at least precede, violent conflict. That is, rather than precluding the endogeneity of cooperative behaviour with regard to conflict, I seek to demonstrate it. I do so by exploiting the quasi-panel structure of the data, which means I have observations that were collected before, after and between the respondents' home districts were affected by violence.

Throughout the analysis I use linear probability models / OLS. Since both my dependent and my independent variables are binary measures, interpretation of the coefficients is straightforward. To account for the fact that my independent variables are generally measured on the district level while my dependent variable is measured on the individual level, I cluster standard errors at the district level. I tested various other specifications – logit, probit and multilevel models with district-level random intercepts – and found that virtually all specifications result in qualitatively comparable results (available upon request).

4. Results

I start by testing the first hypothesis – that people in conflict-affected areas attend community meetings more regularly and volunteer more frequently. For this, I regress my measures of cooperation on the different indicators for conflict-affectedness of a district. The results are reported in Table 2. Previous exposure to communal violence (columns 1 and 2, and 5 and 6) is correlated with a 5 percent higher prevalence of community meeting attendance (a difference that is marginally significant), and a 6–8 percent increase in the propensity to volunteer. In relative terms, this means that individuals from conflict-affected district are about 1.2 times more likely to attend community meetings, and 1.3 times more likely to volunteer compared to those living in non-affected districts (holding all control variables at their means). The second measure for conflict affectedness supports this finding. Those individuals belonging to an ethnic group directly involved in a conflict have a 9 percent higher probability of attending community meetings (i.e. they are 1.3 times more likely), and have a 5 percent increased propensity to volunteer (are 1.2 times more likely), although the latter coefficient is not statistically significant at conventional levels. Finally, the negative, substantively large and statistically significant coefficient of the distance measure means that those living *further away* from a conflict event attend community meetings *less* and volunteer less frequently. Put another way, for every 10km further away from a conflict event, the average likelihood to engage in local collective action *decreases* by 1.2–1.3 percent. Just as in Sierra Leone, Burundi, Colombia and Tajikistan, in Nigeria, too, exposure to past conflict events is associated with an increase in local collective action.

[Table 2 about here]

Extension: Geographical contingency of results

Does the finding of a positive correlation between violent conflict and local collective action generalise to more urban regions, too? This question is interesting because, so far, virtually all of the evidence that has been produced in support of this relationship stems from rural areas only. As the Afrobarometer data is nationally representative, it allows us to compare rural with urban regions. Figure 2, below, which sums up Table 2 above and Table 5 in the appendix, presents a comparison of the already familiar point estimates for the rural sample with the estimates for the previously excluded urban sample – observations from regions with a travel time of less than 1 hour to the nearest town of 20,000 or more inhabitants. As can be seen, these estimates differ starkly.

For two of three measures of conflict exposure, the coefficients for the urban areas are close to zero and not statistically significant. Most interestingly, the relationship between distance towards a conflict location and local collective action *inverts*, and now is positive (in the case of meeting attendance, this correlation is statistically significant, too): within more urban areas, those living *further away* from conflict events cooperate *more*. The dynamics within rural and urban areas thus seem to differ substantially. Indeed, there is a linear positive interaction effect between remoteness and the effect of conflict on cooperation, demonstrated in Table 5 (columns 9 and 10) in the appendix. This is all the more interesting as the *primary* effect of remoteness on local collective action is negative and statistically significant in all regressions, in line with the findings reported in Henrich et al. (2004; 2005). Further on, I argue that the interaction likely applies to other geographical contexts, too.

[Figure 2 about here]

Future conflict and local collective action

I now turn to the discussion of the second hypothesis – that conflict is not only followed by, but also *preceded* by increased levels of local collective action. The first piece of evidence to support this conjecture comes from a simple comparison of means, depicted in Figure 3. The figure shows the difference in meeting attendance and volunteering rates of respondents with i) past exposure to communal conflict only, ii) future first-time exposure to communal conflict¹⁵ and iii) repeated (past and future) exposure, as compared to the baseline of no past or future exposure to communal conflict.

Figure 3 confirms the finding that respondents who are affected by communal conflict generally show higher rates of local collective action than those living in non-affected regions. More importantly, future and repeated exposure is associated with higher rates than is past exposure only. In the case of meeting attendance, a respondent living in a remote district that will experience conflict in the follow-

¹⁵ For those interviewed in 2005, this exposure could take place any time between 2006 and 2012; for those interviewed in early 2007, any time between 2007 and 2012; and for those interviewed in early 2008, between 2008 and 2012. There are also 59 cases in the sample that experienced conflict after their interview in 2012.

ing years has a more than 20% increased probability of attending meetings ‘several times’ or ‘often’ compared with a respondent living in a non-conflict district, and a 9% point higher likelihood compared to a respondent who was exposed to communal conflict in the past only. Both differences are statistically significant at the 0.01 and 0.05 level, respectively. The coefficients for volunteering point in a similar direction, only that here it is repeat exposure to communal conflict that is associated with the highest volunteering rates.

[Figure 3 about here]

The dynamics underlying pre-conflict mobilisation are further illustrated in Figure 4, below. Here I plot the average rate of community attendance and volunteering against the relative timing of the interview vis-à-vis a first-time or last-time exposure to communal conflict.¹⁶ The graph shows that community meeting attendance appears to increase in districts ahead of communal conflict. Attendance rates then collapse right after a conflict event took place, only to rise again three to four years later.¹⁷ In contrast, volunteering rates do not vary much in relation to the exact timing of conflict events. Rather, the graph indicates that volunteering is *consistently* higher in conflict affected vs. non-affected districts.

[Figure 4 about here]

Lastly, I turn the analysis from its head to its feet, so to say, by regressing future incidences of conflict on prior local collective action. Similar to before, I construct different measures of conflict exposure, only this time these measures serve as dependent, not independent variables. First, I code a binary indicator which takes the value 1 if a district would see conflict for the first time since the beginning of the reporting period in 1990 (i.e. using the values plotted in the graph above), and 0 if the district never saw conflict. Second, I construct a similar but more inclusive binary indicator that takes the value 1 if a district was affected by communal conflict any time after the interview took place, notwithstanding whether there had been previous conflicts in the district or not, and 0 if else. If this second measure produced larger coefficients, this would be evidence that the effects of local collective action on future conflict are cumulative.¹⁸ The results are presented in Table 3.

[Table 3 about here]

¹⁶ That is, to obtain a cleaner comparison I leave out cases which have been exposed to communal conflict repeatedly.

¹⁷ Interestingly, the shape of the graphs mirrors findings by De Luca and Verpoorten (2011). Studying the development of ‘social capital’ in wartime Uganda, they show that associational membership decreased while conflict was ongoing but recovered rapidly after hostilities ended.

¹⁸ I also include an individual-level indicator that takes the value 1 if an individual belongs to a group that in the future would be involved in communal violence, and 0 if else. However, the case numbers in this specification are very low – there are only 68 individuals who would become a potential actor due to their ethnic affiliation after they were interviewed –, so I only include naïve estimates without controls (in column 3 and column 6).

The regression shows that in a district where (hypothetically) the whole population took part in community meetings, that district would have a 3 percent increased probability of experiencing first-time conflict, and a 4 percent increased chance of experiencing renewed conflict in comparison to a district where no one took part in community meetings. Expressed another way, the district with full participation would be 1.3 to 1.5 times more likely to experience both first-time and repeated communal violence in the future. For volunteering, similar results hold. A district with a population entirely constituted of volunteers would have a 2 percent increased propensity (be 1.4 times more likely) to experience first-time communal violence, and a 5 percent higher probability (be 1.6 times more likely) to see past violence repeated in the future than a district without such a mobilised population. The difference in the effects of volunteering for first-time and repeated exposure may hint at a process by which the high mobilisation of a community makes conflict more likely and, in turn, is driven up by the experience of conflict.

Further tests of the mobilisation mechanism: Behavioural and attitudinal correlates

In order to test the third hypothesis – that local collective action in the wake of communal conflict is situationally adaptive rather than the expression of (a change in) underlying preferences – I conduct some further tests. If cooperation was driven by changed preferences, i.e. a stronger ‘taste for cooperation’ ahead of violent conflict, we would expect to observe attitudinal correlates. That is, observed cooperation should go along with an increased prevalence of attitudes typically seen as stimulating cooperation, such as trust or generosity. Distrust, on the other hand, should be correlated with decreased participation in collective action. At the other extreme, if we assume that cooperation ahead of conflict is aggressive, we might expect those cooperating more to be the most ingroup-focussed, parochial members of the community. If, however, in the wake of communal conflict to cooperate simply is the best response available, no matter one’s inclination (as is conjectured here), no particular mindset is required to get people to cooperate. Thus, higher cooperation levels would not forcibly go along with either more cooperative or more parochial attitudes.

As discussed above, several authors have shown that in post-conflict situations the heightened propensity to take part in local collective action goes along with increased political mobilisation, especially more frequent voting in national elections. It would be interesting to know if this behavioural correlate also exists for the pre-conflict context. Again, if local collective action is simply a means to rise up to a concrete threat, we would expect *no* such behavioural correlate. If, however, those increasingly participating differ in their preferences in comparison to those not choosing to participate, we could expect these attitudes to affect voting behaviour, too.

To test these conjectures, I recoded Afrobarometer items on distrust of relatives, distrust of members of other ethnic groups, on whether an individual primarily identifies with her nation or with her ethnic group and on voting behaviour into binary variables (this is done for a lack of consistent scales and to

improve comparability; the exact coding is described in the appendix). I then interacted these measures of distrust with the two measures of local collective action, and regressed the indicator for future violence on this interaction term. Unfortunately, the various measures are only included in some of the survey rounds so that I have to run the analysis on smaller samples, and not all combinations of variables (notably the interaction between volunteering and distrust of other ethnic groups) are available.

[Figure 5 about here]

Figure 5 depicts the coefficients for the interaction effects (detailed regression results are shown in Table 6 in the appendix). Keeping in mind the caveat that these estimates are based on reduced samples, they nevertheless give strong support to the idea that local collective action in the wake of communal conflict is a form of adjustment to a situation of perceived threat, rather than something driven by deep-lying preference changes. The strength of preference for one's own ethnic group is a poor predictor of cooperation – as is one's trust or distrust in relatives. What is more, it is not the generally politically engaged that drive collective action ahead of conflict: the effect of the interaction is substantially negative, although this difference is not statistically significant. The single strongest and only statistically significant (at the 10% level) co-predictor of future communal violence – that is, an attitudinal measure that actually goes along with local collective action ahead of violence – is distrust in members of other ethnic groups. In fact, the entire positive correlation between community meeting attendance and future conflict is driven by the cooperation of distrustful people, whereas cooperation of trusting people is not predictive of future conflict. In rural Nigeria, it is thus not the socially minded or politically engaged who cause rates of local collective action to soar prior to violent clashes with other groups, but those distrustful of neighbouring groups.

5. Discussion

The analysis presented above provides further evidence that the positive link between heightened cooperation in the context of civil war violence is a quite general phenomenon. Here I tested the conjecture that one particular type of violent conflict – that between relatively equal social actors – is in one country, Nigeria, associated with increased cooperation. As the literature review showed, similar findings have by now been produced in several different locations and for different types of conflicts, including fully escalated civil war and anti-government insurgency, although there is a bias towards using data from Africa, and using data from rural areas. While the first bias is obviously replicated here, the finding that my results mainly hold for rural areas might hint at an important scope condition as to

where we might observe the association between war and cooperation.¹⁹ Indeed, *all* of the studies discussed at some length above were conducted largely in rural areas, so we do not know if their findings would hold for urban contexts, too. One study similar in design suggests that they may not. Becchetti, Conzo and Romeo (2013) conducted behavioural experiments among inhabitants of Nairobi's Kibera slum – a distinctively urban setting. They found that those respondents who were affected by the 2007/2008 post-election violence contributed slightly less to a common pool resource game. My findings, too, indicate that in more urban areas the positive correlation between exposure to violent conflict and cooperation does not emerge or even is negative.

At this point, we can only speculate why such differences between rural and urban districts should exist. One possibility is that this has to do with the way violence is typically waged in the countryside in comparison with the city. Urban violence is notoriously unpredictable, particularly when tactics such as roadside bombs are used, but also in the case of riots and mob violence. What is more, faced with these latter types of violence, one might hope to get away by hiding and blending in with the masses. Rural violence is at the same time more predictable and unrelenting. Potential enemies are often known, and approaching assailants may be spotted in advance. Once under attack, getting away and hiding may be very difficult, since the enemy, too, has an informational advantage in the countryside. Another possibility is that in the countryside, scope conditions for collective action are more favourable, so that it can be more easily organised. The relevant community members are known and agreements more easily enforced.

For rural areas in Nigeria, however, the results of this study closely fit the mobilisation mechanism i.e. the idea that cooperation precedes conflict and is then reinforced in a dynamic process before (and during) the outbreak of violence. Two points are important. For one, communities that had previously been more socially cohesive are more likely to experience communal violence, or perhaps even to proactively engage in violence. Volunteering rates seem to be higher in districts that experience communal violence, no matter whether we consider the situation before or after the conflict (although not all coefficients are statistically significant). Figure 4 b) is suggestive in this regard. It can be interpreted as a base-rate of volunteering that is higher in conflict than in non-conflict districts. This result complements similar findings and ideas presented by other scholars. In her study of wartime El Salvador, Wood (2003) gives a detailed account of how the armed insurgency relied on the support from *campesino* associations formed to claim land – and how insurgents helped to establish these associations in the first place. Pierskalla and Hollenbach (2013) link the onset of violent conflicts to the access to mobile phone networks, arguing that phones make it easier to organise the collective action necessary for fighting. Very similar results to the ones here presented are reported in a new study by

¹⁹ Interestingly, even the distinct interaction effect of violence becoming more strongly correlated with cooperation the more remote a location is seems to hold for other studies, too. Gilligan, Pasquale and Samii (2013) present this interaction themselves, and I could find model specifications that replicate it in the data of Bellows and Miguel (2009) and Voors et al. (2012), too. Results are available upon request.

Blair, Hartman and Blattman (2014, 14), which is dedicated to developing a means of forecasting local violent conflict in Liberia. They find that “the larger the proportion of respondents who report contributing labour or cash to public facilities in a given community, the greater the predicted probability of conflict”, which, they write, “runs counter to our expectation, and to the conventional wisdom that more socially cohesive communities — those more capable of intracommunal collective action — should be less prone to violence.”

For another, the largely increased meeting attendance prior to outbreaks of communal violence is suggestive of a *dynamic* (and potentially self-reinforcing) process of social agitation ahead of conflict. In light of a spiralling crisis and signs of this crisis escalating into fighting elsewhere, people decide to increase their cooperation. The context of communal violence plausibly leaves them with three options: to stay and prepare, to attack in pre-emption or predation, or to flee. Against an enemy operating as a collective, preparation and attack will necessitate collective action. Writing on inter-ethnic conflict in the USA at the turn of the 20th century, Olzak (1992, 2) sees similar situational dynamics at play when she summarises that “factors that raise competition among race and ethnic groups increase rates of collective action.” In addition, the idea that a ‘societal security dilemma’ could be pushing social agitation and counter-agitation in an upward spiral is supported by the finding that it is those who are distrustful members of other ethnic groups who drive the increase in meeting attendance. Cooperation before the onset of conflict, then, may best be interpreted as social capital of a ‘dark nature’ potentially spurring further conflict (Grosjean 2014; Satyanath, Voigtlaender, and Voth 2013) and may indicate the presence of Choi and Bowles’s (2007) ‘parochial altruism’.

However, I stop short of claiming that pre-conflict mobilisation can explain away the positive links between conflict and cooperation described by other scholars in post-civil war settings. While this possibility cannot be entirely precluded, one would certainly need more fine-grained data to verify this claim. What is more, the case study has produced anecdotal but nonetheless clear evidence that violent ‘purging’ (i.e. selection and self-selection along ethnic lines) did take place in the communal clashes in Plateau state, lending support to Gilligan, Samii and Pasquale’s (2014) hypothesis that higher post-conflict cooperation levels could be the result of more homogenous communities.

Conclusion

Studying communal violence in Nigeria, this paper has produced new insights into the link between the experience of violent conflict and local collective action. I show that the association between past exposure to violence and increased local collective action previously described by other scholars holds for Nigeria, too. However, this link only holds under the scope condition that fighting occurs in remote areas; for urban warfare, the correlation is close to zero, and it is likely that this scope condition applies to related research, too.

More importantly, I demonstrate that local collective action, measured in terms of community meeting attendance and volunteering, reaches a high before the outbreak of violence. In fact, the pre-conflict level of cooperation is higher than both post-conflict levels and the generally lower levels of cooperation in regions not affected by violence, and cooperation is strongly predictive of future communal conflict. This result is derived by exploiting the temporal and geographical information of four rounds of survey data, which is used to relate measures of cooperation to past and future incidences of communal conflict. I put forward a ‘mobilisation mechanism’ to explain these findings. The mechanism is grounded in the idea that local collective action is inherently ambiguous as it may serve as a resource for violent collective action, and may trigger an escalating cycle of mobilisation and counter-mobilisation. The mobilisation of one group makes it a rational response for a rival group to also cooperate, sending pre-conflict rates of local collective action – and tensions – soaring. I show that individuals distrustful of members of other ethnic groups are behind the increase in pre-conflict cooperation. This suggests that rather than being an indicator of ‘social capital’, cooperation in the context of communal violence is driven by a form of potentially aggressive ‘solidarity with an edge’. One implication of this study is that we should be prudent in our appraisal of heightened cooperation in the context of violent conflict, which has now been identified in a number of studies from different parts of the world. Necessary as it may be for economic recovery and social well-being, local collective action and community cohesion may also play a role in renewed escalations of violent conflict.

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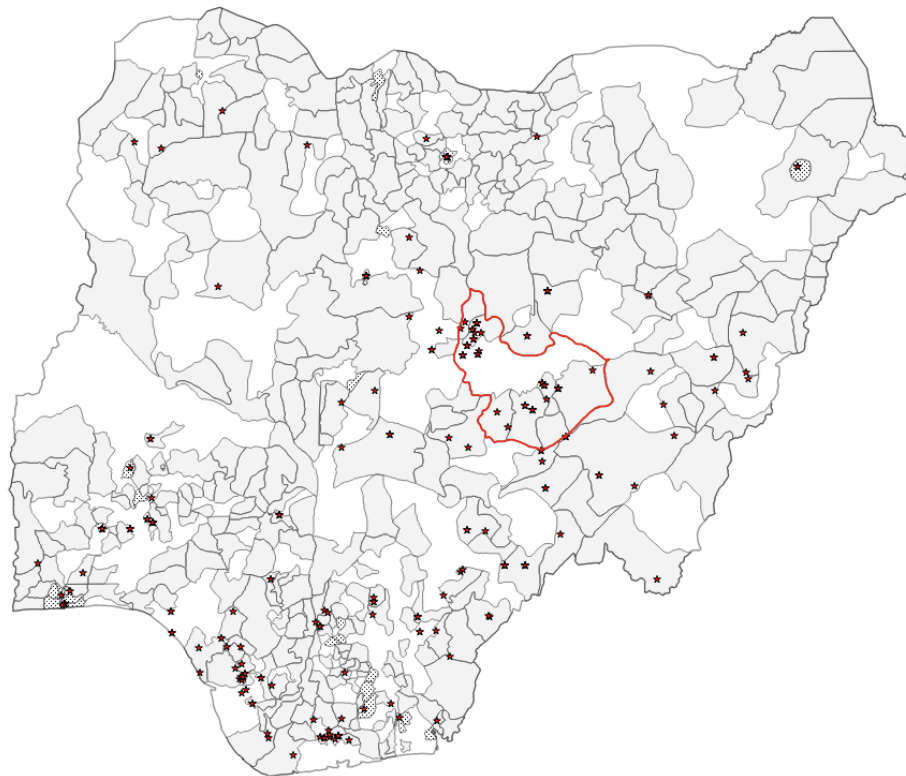
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Appendix

Figure 1: Map of Nigeria indicating communal conflict events and districts for which Afrobarometer survey data is available



Communal conflict events are marked with red stars; districts for which interview data is available are shaded; urban districts are marked with crossing stripes. Plateau State is indicated with a red outline.

Table 1: Summary statistics – rural/remote sample²⁰

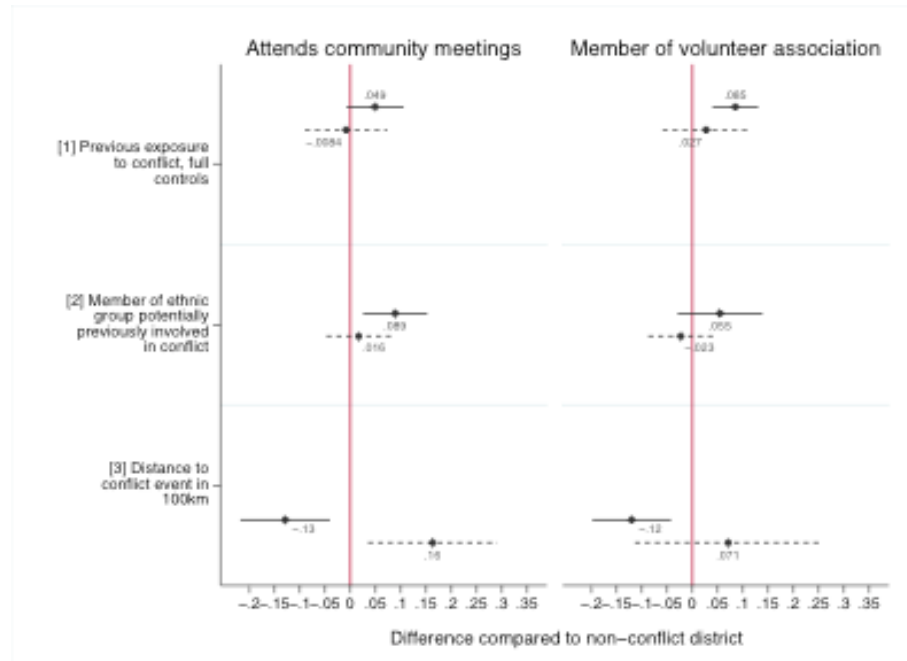
	mean	sd	min	max	count
Meeting attendance	0.35	0.48	0	1	6372
Volunteer	0.30	0.46	0	1	4804
District previously exposed to comm. conflict	0.37	0.48	0	1	6428
Distance from closest conflict event (in 100km)	0.25	0.23	0	1	6428
Member of ethnic group prev. involved in conflict	0.04	0.20	0	1	6428
Age	31.89	12.27	18	95	6391
Gender	0.50	0.50	0	1	6428
Education	4.71	2.10	0	9	6419
Rural home	0.60	0.49	0	1	6428
No access to cooking fuel	1.17	1.19	0	4	6381
Owns radio	0.82	0.39	0	1	6416
District population (in 100,000s) in 2000	2.69	1.49	0	9	6428
District area size in 100km ²	0.15	0.15	0	1	6428
Estimated GDP of district 1990	2.33	2.58	0	37	6428
Relative change in rainfall 1989–2005	2.54	0.70	1	4	6428
Nightlight intensity in 2005	4.61	8.46	0	52	6428
Distance to Abuja (capital) in 100km	3.56	1.17	0	6	6428
District average ruggedness	26.71	27.37	0	276	6428
Average elevation of district (in 100m)	247.55	216.26	4	1188	6428
No. of slaves (in 1,000s) taken from district in 1400–1900	2.60	3.95	0	18	6428
Ethnic fractionalisation of district	0.15	0.21	0	1	6428
State presence indicator	4.22	1.92	0	8	6428
Remoteness / travel time to town of 20k plus in hours	3.37	2.90	1	14	6428
Future first-time conflict	0.08	0.27	0	1	4024
Future repeated conflict	0.16	0.37	0	1	4419
Member of ethnic group involved in future conflict	0.01	0.10	0	1	6428
Distrusts relatives	0.34	0.47	0	1	4824
Distrusts members of other ethnic groups	0.71	0.46	0	1	1555
Identifies mainly with own ethnic group	0.27	0.45	0	1	4802
Voted in last national elections	0.63	0.48	0	1	3194

²⁰ Summary statistics for the urban/ non-remote sample (introduced below) can be found in Table 8 the appendix.

Table 2: Correlation between measures of cooperation and prior experience of communal conflict, rural/remote sample

Dependent variable	(1) Meeting attendance LPM	(2) Meeting attendance LPM	(3) Meeting attendance LPM	(4) Meeting attendance LPM	(5) Volunteer LPM	(6) Volunteer LPM	(7) Volunteer LPM	(8) Volunteer LPM
Model								
District previously exposed to comm. conflict	0.05 (0.03)*	0.05 (0.03)*			0.06 (0.02)***	0.08 (0.02)***		
Member of ethnic group prev. involved in conflict			0.09 (0.03)***				0.05 (0.04)	
Distance (in 100km)				-0.01 (0.00)***				-0.01 (0.00)***
Age		0.01 (0.00)***	0.01 (0.00)***	0.01 (0.00)***		0.01 (0.00)***	0.01 (0.00)***	0.01 (0.00)***
Age squared		-0.00 (0.00)**	-0.00 (0.00)**	-0.00 (0.00)**		-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Gender		-0.15 (0.01)***	-0.15 (0.01)***	-0.15 (0.01)***		-0.13 (0.01)***	-0.13 (0.01)***	-0.13 (0.01)***
Education		0.01 (0.00)**	0.01 (0.00)**	0.01 (0.00)**		0.01 (0.01)	0.00 (0.01)	0.00 (0.01)
Rural home		0.04 (0.02)**	0.04 (0.02)**	0.05 (0.02)***		0.03 (0.02)	0.03 (0.02)	0.03 (0.02)*
No access to cooking fuel		0.01 (0.01)**	0.01 (0.01)**	0.01 (0.01)**		0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Owns radio		0.07 (0.02)***	0.07 (0.02)***	0.07 (0.02)***		0.06 (0.02)***	0.06 (0.02)***	0.06 (0.02)***
District population (in 100,000s) in 2000		-0.03 (0.01)***	-0.02 (0.01)***	-0.02 (0.01)***		-0.02 (0.01)***	-0.01 (0.01)**	-0.01 (0.00)***
District area size (in 100km ²)		0.21 (0.06)***	0.20 (0.06)***	0.23 (0.06)***		0.12 (0.07)*	0.12 (0.07)*	0.14 (0.06)**
Estimated GDP of district in 1990		-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)		0.00 (0.00)	0.00 (0.01)	0.00 (0.00)
Relative change in rainfall in 1989–2005		-0.08 (0.02)***	-0.09 (0.02)***	-0.08 (0.02)***		-0.03 (0.02)	-0.04 (0.02)**	-0.03 (0.02)*
Nightlight intensity in 2005		-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)		-0.00 (0.00)**	-0.00 (0.00)	-0.00 (0.00)
Distance to Abuja (capital) in 100km		0.01 (0.01)	0.01 (0.01)	0.01 (0.01)		0.02 (0.01)*	0.02 (0.01)*	0.02 (0.01)**
District average ruggedness		-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)*		-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Average elevation of district (in 100m)		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)*		0.00 (0.00)***	0.00 (0.00)**	0.00 (0.00)***
No. of slaves (in 1,000) taken from district in 1400–1900		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Ethnic fractionalisation of district		-0.12 (0.05)**	-0.12 (0.05)**	-0.12 (0.05)**		-0.03 (0.05)	-0.04 (0.06)	-0.03 (0.06)
State presence index		-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)		-0.00 (0.00)	-0.00 (0.01)	-0.00 (0.01)
Remoteness		-0.01 (0.00)***	-0.01 (0.00)***	-0.01 (0.00)***		-0.01 (0.00)**	-0.01 (0.01)**	-0.01 (0.00)*
_cons	0.33 (0.01)***	0.27 (0.10)***	0.28 (0.11)***	0.29 (0.10)***	0.28 (0.01)***	0.10 (0.12)	0.12 (0.12)	0.12 (0.12)
Ethnic group fixed effects	--	yes	yes	yes	--	yes	yes	yes
Region fixed effects	--	yes	yes	yes	--	yes	yes	yes
Round and trend indicators	--	yes	yes	yes	--	yes	yes	yes
N	6372	6273	6273	6273	4804	4718	4718	4718
Adj. R ²	0.00	0.14	0.14	0.14	0.00	0.10	0.10	0.10
Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, standard errors clustered on district level								

Figure 2: Comparison of effects of previous conflict exposure in rural/remote and urban/non-remote districts



Depicted are point estimates and 95% confidence intervals (CIs). For each conflict measure, the upper CI, marked with a solid line, depicts the correlation for 'remote' districts (the default). The lower CI, marked with a solid line, shows the correlation for 'non-remote' districts.

Figure 3: Comparison of mean level of community meeting attendance and volunteering in remote districts depending on timing of exposure to communal conflict in district (based on Table 5, columns 1 and 5)

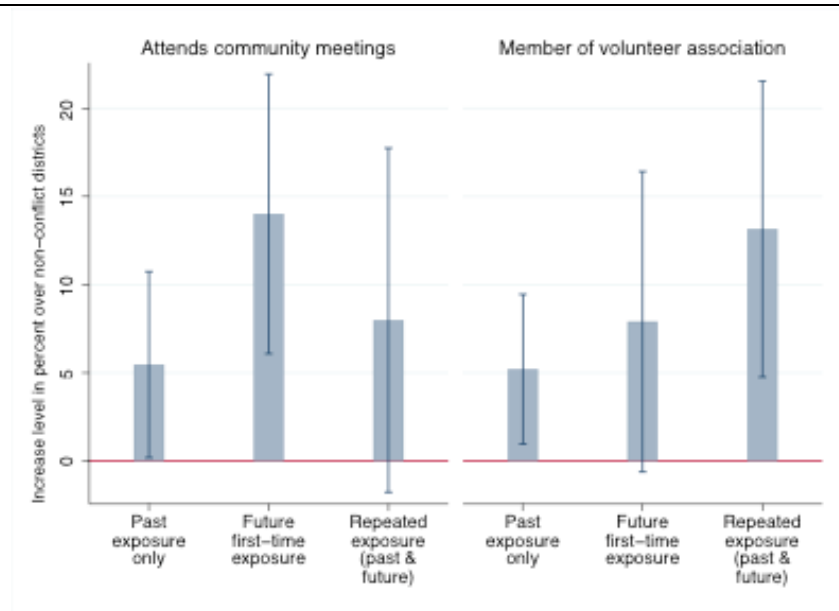
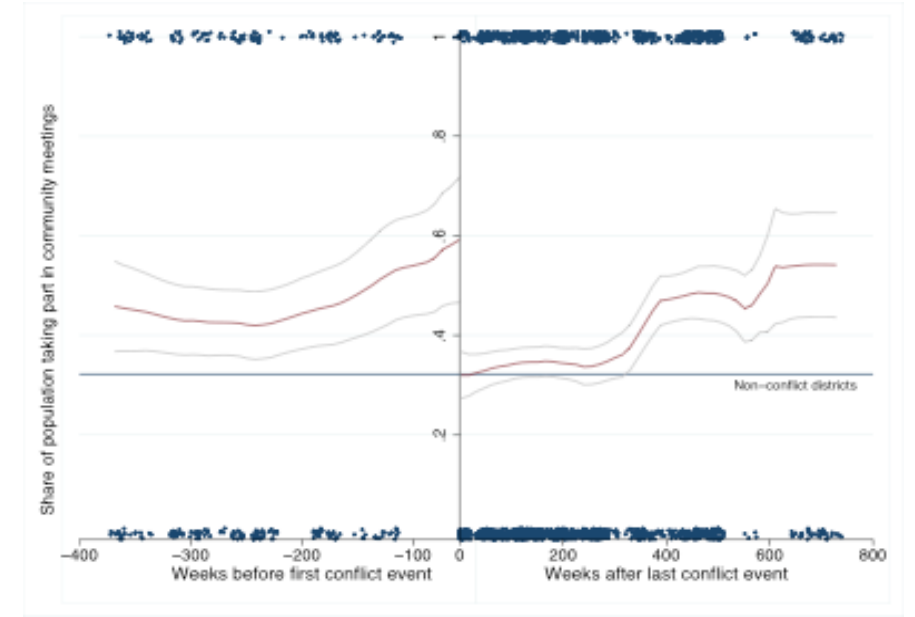
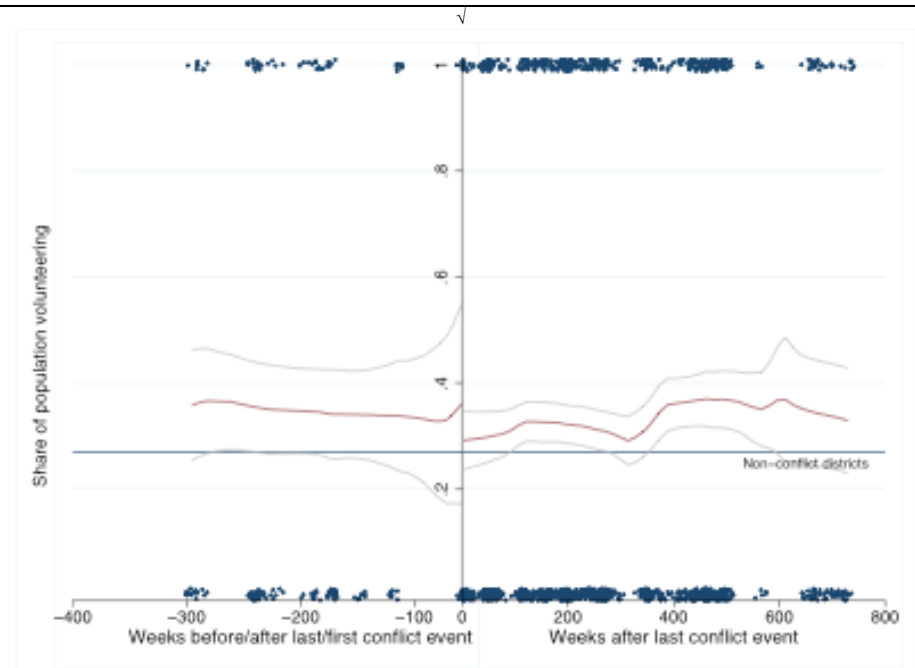


Figure 4 a) Community attendance rates plotted against observations from remote pre-conflict and post-conflict districts, depending on the time gap vis-à-vis last or first conflict event in district



b) Volunteering rates plotted against observations from 'remote' pre-conflict and post-conflict districts, depending on the time gap vis-à-vis last or first conflict event in district

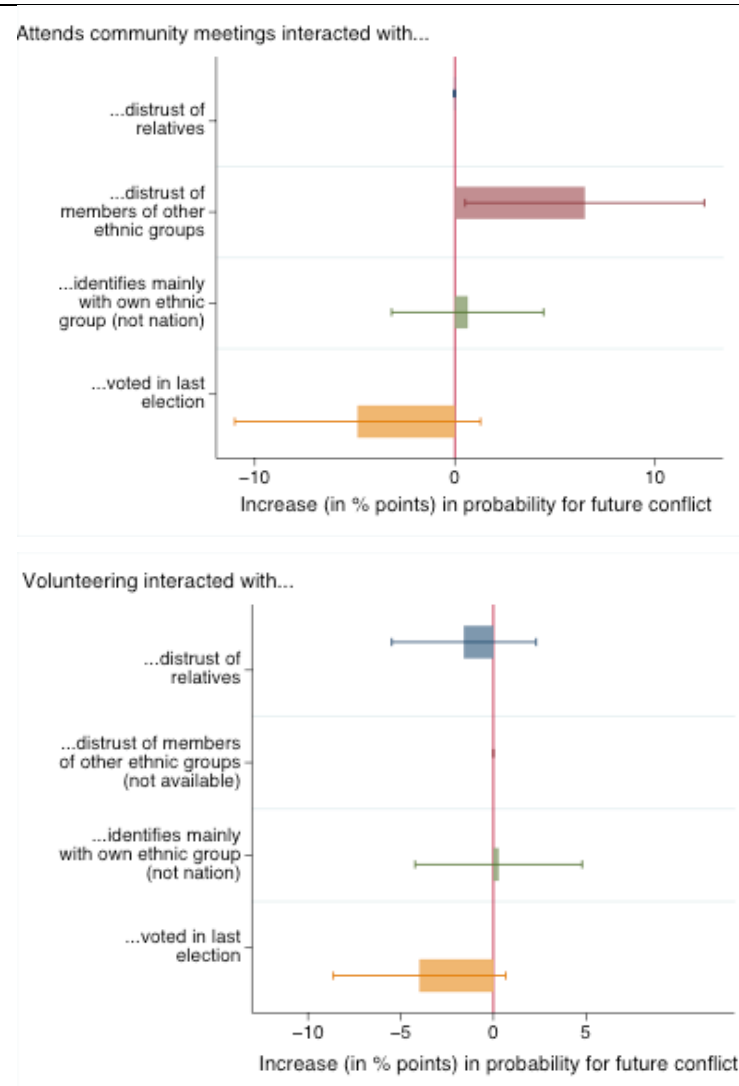


Polynomial smooth with bandwidth 50, 95% confidence intervals

Table 3: Future conflict regressed on measures of local collective action

Dependent variable	(1) Future first- time conflict LPM	(2) Future repeated conflict LPM	(3) Potentially involved in conflict in future LPM	(4) Future first- time conflict LPM	(5) Future repeated conflict LPM	(6) Potentially involved in conflict in future LPM
Model						
Community meeting attendance	0.03 (0.01)***	0.04 (0.01)***	0.00 (0.00)*			
Volunteer				0.02 (0.01)*	0.06 (0.01)***	0.01 (0.00)***
Age	0.00 (0.00)	-0.00 (0.00)		0.00 (0.00)	-0.00 (0.00)*	
Age squared	-0.00 (0.00)	0.00 (0.00)		0.00 (0.00)	0.00 (0.00)**	
Gender	0.01 (0.00)	0.00 (0.00)		0.01 (0.00)	0.00 (0.00)	
Education	0.01 (0.00)**	0.00 (0.00)		0.01 (0.00)*	0.00 (0.00)	
Rural home	-0.06 (0.03)**	-0.05 (0.03)		-0.05 (0.03)**	-0.05 (0.03)	
No access to cooking fuel	-0.01 (0.00)**	-0.01 (0.00)**		-0.01 (0.00)*	-0.01 (0.01)**	
Owns radio	-0.02 (0.01)	-0.02 (0.01)		-0.00 (0.01)	-0.02 (0.01)	
District population (in 100,000s) in 2000	0.04 (0.02)	0.12 (0.02)***		0.03 (0.02)	0.10 (0.02)***	
District area size (in 100km ²)	0.15 (0.18)	0.01 (0.19)		0.06 (0.12)	0.02 (0.18)	
Estimated GDP of district in 1990	-0.00 (0.00)	-0.00 (0.00)		-0.00 (0.00)	-0.00 (0.00)	
Relative change in rainfall in 1989–2005	-0.07 (0.04)	-0.17 (0.05)***		-0.04 (0.03)	-0.15 (0.04)***	
Nightlight intensity in 2005	0.01 (0.01)	0.02 (0.00)***		0.01 (0.01)	0.02 (0.00)***	
Distance to Abuja (capital) in 100km	-0.04 (0.04)	-0.03 (0.03)		-0.04 (0.04)	-0.03 (0.03)	
District average ruggedness	0.00 (0.00)	0.00 (0.00)		0.00 (0.00)	-0.00 (0.00)	
Average elevation of district (in 100m)	-0.00 (0.00)	-0.00 (0.00)		-0.00 (0.00)	-0.00 (0.00)	
No. of slaves (in 1,000) taken from district in 1400–1900	-0.00 (0.00)	-0.00 (0.01)		0.00 (0.00)	-0.00 (0.00)	
Ethnic fractionalisation of district	-0.03 (0.11)	-0.07 (0.12)		-0.02 (0.09)	-0.01 (0.11)	
State presence index	-0.00 (0.00)	-0.01 (0.01)		0.00 (0.01)	-0.00 (0.01)	
Remoteness	-0.03 (0.01)*	-0.03 (0.02)*		-0.02 (0.01)**	-0.03 (0.02)**	
_cons	0.52 (0.18)***	0.58 (0.19)***	0.01 (0.00)***	0.39 (0.16)**	0.61 (0.22)***	0.01 (0.00)***
Ethnic group fixed effects	yes	yes	yes	yes	yes	yes
Region fixed effects	yes	yes	yes	yes	yes	yes
Round and trend indicators	yes	yes	yes	yes	yes	yes
<i>N</i>	3908	4298	6372	2951	3226	4804
Adj. R ²	0.25	0.48	0.00	0.26	0.51	0.00

Figure 5: Effect of the interaction between measures of local cooperation and attitudinal and behavioural correlates on the probability of future conflict



Depicted are point estimates and 90% confidence intervals.

Figure 6: Number of casualties in communal conflicts in Nigeria over time

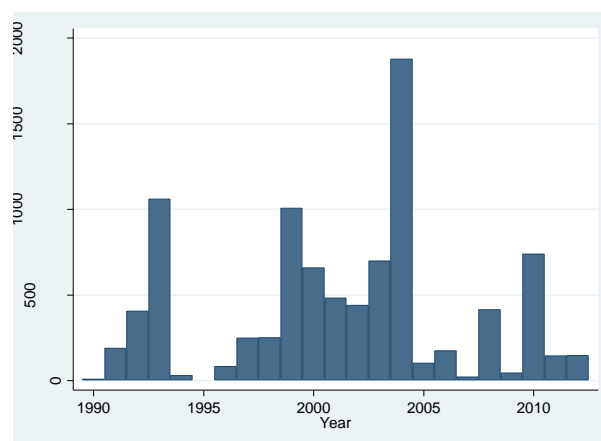


Table 4: Summary statistics urban sample					
	mean	sd	min	max	count
Meeting attendance	0.27	0.44	0	1	1770
Volunteer	0.26	0.44	0	1	1297
District previously exposed to comm. conflict	0.57	0.49	0	1	1781
Distance from closest conflict event (in 100km)	0.11	0.23	0	1	1781
Member of ethnic group prev. involved in conflict	0.26	0.44	0	1	1781
Age	31.86	12.35	18	85	1771
Gender	0.50	0.50	0	1	1781
Education	5.03	1.89	0	9	1773
Rural home	0.20	0.40	0	1	1781
No access to cooking fuel	1.13	1.19	0	4	1772
Owns radio	0.88	0.33	0	1	1779
District population (in 100,000s) in 2000	5.34	3.57	0	12	1781
District area size in 100km ²	0.02	0.02	0	0	1781
Estimated GDP of district 1990	13.27	14.78	1	46	1781
Relative change in rainfall 1989–2005	2.84	0.36	2	4	1781
Nightlight intensity in 2005	28.14	19.65	2	60	1781
Distance to Abuja (capital) in 100km	4.08	1.30	2	7	1781
District average ruggedness	21.10	23.24	1	67	1781
Average elevation of district (in 100m)	228.77	233.65	3	607	1781
No. of slaves (in 1,000s) taken from district in 1400–1900	2.55	4.11	0	14	1781
Ethnic fractionalisation of district	0.04	0.10	0	0	1781
State presence indicator	4.20	1.65	0	8	1781
Remoteness / travel time to town of 20k plus in hours	0.60	0.26	0	1	1781
Future first-time conflict	0.28	0.45	0	1	760
Future repeated conflict	0.55	0.50	0	1	1198
Member of ethnic group involved in future conflict	0.16	0.37	0	1	1781
Distrusts relatives	0.40	0.49	0	1	1331
Distrusts members of other ethnic groups	0.73	0.45	0	1	482
Identifies mainly with own ethnic group	0.25	0.44	0	1	1329
Voted in last national elections	0.67	0.47	0	1	877

Table 5: Correlation between measures of cooperation and prior experience of communal conflict, urban sample									Interaction between prior communal conflict and remoteness	
Dependent variable	(1) Meeting attendance	(2) Meeting attendance	(3) Meeting attendance	(4) Meeting attendance	(5) Volunteer	(6) Volunteer	(7) Volunteer	(8) Volunteer	(9) Meeting attendance	(10) Volunteer
Model	LPM	LPM	LPM	LPM	LPM	LPM	LPM	LPM	LPM	LPM
District previously exposed to comm. conflict x remoteness									0.01 (0.01)**	0.01 (0.01)**
District previously exposed to comm. conflict	0.01 (0.06)	-0.01 (0.04)			-0.00 (0.06)	0.03 (0.04)			0.00 (0.03)	0.03 (0.03)
Member of ethnic group prev. involved in conflict			0.02 (0.03)				-0.02 (0.03)			
Distance (in 100km)				0.16 (0.06)**				0.07 (0.09)		
Age		0.02 (0.01)***	0.02 (0.01)***	0.02 (0.01)***		0.01 (0.01)*	0.01 (0.01)*	0.01 (0.01)*	0.01 (0.00)***	0.01 (0.00)***
Age squared		-0.00 (0.00)*	-0.00 (0.00)*	-0.00 (0.00)*		-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)***	-0.00 (0.00)
Gender		-0.14 (0.03)***	-0.14 (0.03)***	-0.14 (0.03)***		-0.14 (0.03)***	-0.14 (0.03)***	-0.14 (0.03)***	-0.15 (0.01)***	-0.13 (0.01)***
Education		0.02 (0.00)***	0.02 (0.00)***	0.02 (0.00)***		-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.00)***	0.00 (0.00)
Rural home		0.08 (0.05)	0.08 (0.05)	0.09 (0.05)*		0.06 (0.05)	0.07 (0.06)	0.07 (0.06)	0.05 (0.02)***	0.04 (0.02)**
No access to		0.02	0.02	0.02		0.01	0.01	0.01	0.02	0.00

cooking fuel		(0.01)**	(0.01)**	(0.01)**		(0.01)	(0.01)	(0.01)	(0.01)***	(0.01)
Owns radio		0.03 (0.04)	0.03 (0.04)	0.04 (0.04)		0.07 (0.05)	0.07 (0.05)	0.07 (0.05)	0.06 (0.02)***	0.06 (0.02)***
District population (in 100,000s) in 2000		-0.01 (0.01)**	-0.01 (0.01)**	-0.01 (0.01)*		-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.00)***	-0.02 (0.00)***
District area size (in 100km ²)		4.57 (1.64)***	4.93 (1.60)***	4.24 (1.87)**		1.07 (1.75)	0.40 (1.77)	0.66 (1.94)	0.21 (0.06)***	0.11 (0.07)
Estimated GDP of district in 1990		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Relative change in rainfall in 1989– 2005		0.06 (0.06)	0.05 (0.05)	0.10 (0.06)		-0.16 (0.08)*	-0.14 (0.07)**	-0.12 (0.08)	-0.08 (0.02)***	-0.04 (0.02)**
Nightlight intensi- ty in 2005		0.00 (0.00)*	0.00 (0.00)*	0.00 (0.00)**		-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)*	-0.00 (0.00)***
Distance to Abuja (capital) in 100km		-0.02 (0.02)	-0.02 (0.02)	-0.03 (0.03)		0.05 (0.03)	0.06 (0.03)*	0.05 (0.04)	0.02 (0.01)*	0.03 (0.01)***
District average ruggedness		-0.00 (0.00)***	-0.00 (0.00)***	-0.00 (0.00)		-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)**	-0.00 (0.00)**
Average elevation of district (in 100m)		0.00 (0.00)***	0.00 (0.00)***	0.00 (0.00)		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)*	0.00 (0.00)***
No of slaves (in 1,000s) taken from district in 1400–1900		-0.01 (0.01)	-0.01 (0.00)	-0.00 (0.01)		0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.00 (0.00)	0.00 (0.00)
Ethnic fractional- isation of district		0.13 (0.09)	0.11 (0.09)	0.17 (0.09)*		0.37 (0.10)***	0.37 (0.12)***	0.37 (0.12)***	-0.08 (0.04)*	-0.01 (0.05)
State presence index		0.01 (0.01)	0.01 (0.01)	0.01 (0.01)		-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.00)	-0.00 (0.00)
Remoteness		0.01 (0.10)	-0.02 (0.10)	0.07 (0.10)		-0.01 (0.12)	0.05 (0.11)	0.06 (0.13)		
_cons	0.26 (0.04)***	-0.32 (0.24)	-0.28 (0.22)	-0.46 (0.24)*	0.26 (0.03)***	0.30 (0.38)	0.19 (0.35)	0.14 (0.41)	0.19 (0.08)**	0.12 (0.11)
Ethnic group fixed effects	--	yes	yes	yes	--	yes	yes	yes	yes	yes
Region fixed ef- fects	--	yes	yes	yes	--	yes	yes	yes	yes	yes
Round and trend indicators	--	yes	yes	yes	--	yes	yes	yes	yes	yes
<i>N</i>	1770	1742	1742	1742	1297	1272	1272	1272	8015	5990
Adj. R ²	-0.00	0.19	0.19	0.19	-0.00	0.14	0.14	0.14	0.15	0.11

Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, standard errors clustered on district level

Table 6: Effect of attitudinal and behavioural measures related to conflict interacted with measures of local collective action on likelihood of future conflict

Dependent variable	(1) Future re- peated con- flict	(2) Future re- peated con- flict	(3) Future re- peated con- flict	(4) Future re- peated con- flict	(5) Future re- peated con- flict	(6) Future re- peated con- flict	(7) Future re- peated con- flict	(8) Future re- peated con- flict
Model	LPM	LPM	LPM	LPM	LPM	LPM	LPM	LPM
Community meeting at- tendance x distrust rela- tives	-0.02 (0.03)							
Community meeting at- tendance x distrust mem- bers of other ethnic groups		0.06 (0.04)*						
Community meeting at- tendance x identifies			0.01 (0.02)					

mainly with own ethnic group							
Community meeting attendance x voted in last election				0.01 (0.02)			
Volunteering x distrust relatives					-0.02 (0.02)		
Volunteering x distrust members of other ethnic groups						Not available	
Volunteering x identifies mainly with own ethnic group						0.00 (0.03)	
Volunteering x voted in last election							-0.04 (0.03)
Community meeting attendance (constitutive term)	0.06 (0.02)**	0.01 (0.04)	0.05 (0.02)***	0.08 (0.03)***			
Volunteering (constitutive term)					0.05 (0.02)**	0.04 (0.02)**	0.06 (0.03)**
Age	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Age squared	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Gender	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.01 (0.01)
Education	0.00 (0.00)	0.01 (0.01)**	0.00 (0.00)	0.01 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.01)
Rural home	-0.03 (0.03)	-0.01 (0.06)	-0.03 (0.03)	-0.05 (0.04)	-0.03 (0.03)	-0.03 (0.03)	-0.08 (0.05)
No access to cooking fuel	-0.01 (0.00)*	-0.00 (0.01)	-0.01 (0.00)*	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)
Owns radio	-0.02 (0.02)	-0.04 (0.03)	-0.02 (0.02)	-0.03 (0.02)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.02)
District population (in 100,000s) in 2000	0.12 (0.03)***	0.16 (0.03)***	0.12 (0.03)***	0.14 (0.03)***	0.09 (0.03)***	0.09 (0.03)***	0.12 (0.03)***
District area size (in 100km ²)	0.06 (0.20)	0.01 (0.38)	0.06 (0.20)	0.29 (0.25)	0.05 (0.17)	0.05 (0.17)	0.49 (0.22)**
Estimated GDP of district in 1990	-0.00 (0.00)	0.00 (0.01)	-0.00 (0.00)	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)
Relative change in rainfall in 1989–2005	-0.14 (0.04)***	-0.20 (0.07)***	-0.14 (0.04)***	-0.15 (0.05)***	-0.07 (0.03)**	-0.07 (0.04)**	-0.06 (0.06)
Nightlight intensity in 2005	0.02 (0.00)***	0.01 (0.01)	0.02 (0.00)***	0.01 (0.01)**	0.02 (0.00)***	0.02 (0.00)***	0.01 (0.01)***
Distance to Abuja (capital) in 100km	-0.05 (0.03)	-0.08 (0.05)*	-0.05 (0.03)	-0.06 (0.03)*	-0.06 (0.03)**	-0.06 (0.03)**	-0.08 (0.03)**
District average ruggedness	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)*
Average elevation of district (in 100m)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
No. of slaves (in 1,000s) taken from district in 1400–1900	-0.00 (0.01)	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.01)
Ethnic fractionalisation of district	-0.11 (0.13)	-0.29 (0.26)	-0.11 (0.13)	-0.10 (0.15)	-0.00 (0.10)	-0.00 (0.10)	0.04 (0.12)
State presence index	-0.00 (0.01)	-0.03 (0.02)*	-0.00 (0.01)	-0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Remoteness	-0.02 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.03 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.04 (0.02)**
_cons	0.47	0.93	0.49	0.55	0.39	0.38	0.26

	(0.19)**	(0.35)***	(0.19)**	(0.23)**	(0.20)**	(0.20)*	(0.22)
Ethnic group fixed effects	yes	yes	yes	yes	yes	yes	yes
Region fixed effects	yes	yes	yes	yes	yes	yes	yes
Round and trend indicators	yes	yes	yes	yes	yes	yes	yes
<i>N</i>	3202	1053	3193	2171	2130	2124	1097
Adj. R ²	0.47	0.53	0.47	0.47	0.50	0.50	0.50
Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, standard errors clustered on district level							

Table 5: Variable coding

Structural control variable	Rationale for inclusion	Proxy/ measure	Variable name(s)
Economic Development	Opportunity costs of conflict (Collier and Hoeffler 1998; Fearon and Laitin 2003), state power to prevent insurgency; marker for marketization and urbanisation, likely to be important for measures of prosociality (cp. Henrich et al. 2004; Henrich et al. 2010).	Nightlight measured in 1992 (NO-AA NGDC 2013); GDP data 1990 measured by CIESIN (2002); sum of absolute year-to-year relative changes in rainfall based on CRU TS 3.0 data (University of East Anglia Climatic Research Unit (CRU) 2013) and inspired by Miguel, Satyanath, and Sergenti (2004)	gdp90zonal, rain_src, nl05
Ethnic diversity	There is a long debate if ethnic heterogeneity is linked with violent conflict (for some recent, authoritative statements, see Fearon and Laitin (2003), Montalvo and Reynal-Querol (2005)). There exist good arguments why diversity should increase conflict: If an ethnic marker is readily available for polarisation, conflict becomes easier to organise (1998); different groups might have conflicting land-use etc.; conflict becomes more likely if ethnic groups are of similar strength (Horowitz 1985); ethnic fractionalisation may hamper collective action (because it makes it harder for subjects to identify and enforce norms on each other (Habyarimana et al. 2009)).	Ethnic fractionalisation index constructed following Rohner et al. (2013) and based on the georeferenced ethnic groups dataset (GREG) (Weidmann, Rød, and Cederman 2010), which uses information from the 1964 Soviet Atlas Narodov Mira (reviewed in Harris (1965)).	ethnic_fractionalization
Ruggedness of terrain	Rough terrain favours insurgency (2003); in Africa, rough terrain provided protection from slave raids (Nunn and Puga 2009), which Nunn and Wantchekon (Nunn and Wantchekon 2009) found to have adverse effects on contemporary	Ruggedness indicator from Nunn and Puga (2009); average elevation of district	ruggedness, av_elevation
History of slavery	May influence cooperation through reduced trust as argued by Nunn (2008). Nunn also shows that slave trade induced political instability, animosity and interethnic warfare, the legacies of which could potentially influence present-day conflict.	Number of slaves ‘exported’ from district based on figures reported in Nunn (2008). ²¹	slave_export
Distance to towns and cities / distance to markets	Henrich et al. (2004; 2010) argue that norms of impartiality and fairness are correlated to market exposure (either because markets promote these norms, or, alternatively, that markets develop where these norms prevail); it is likely that the presence of towns and cities is also correlated with the incidence of conflict as they provide opportunities to tax, grounds for recruitment, military targets (such as local police stations) etc.. The cut-off point of an average travel time to the next town of 20,000 or more inhabitants used here is chosen as a compromise between sample size and size of the effect. Virtually all correlations that show up only marginally significantly in the figures and tables below are stronger and statistically	Average road distance to nearest town of 20 000 or more inhabitants/nearest market centre (Harvest Choice 2010), measured in 2000 – while this	REMOTENESS

²¹ Each district is assigned the total number of slaves that was taken from an ethnic group’s ‘homeland’ (extends according to Murdock) 1400–1900 as recorded by Nunn (2008), divided by the number of GAUL 2 districts in this ‘homeland’. This adjustment is necessary because the ‘homelands’ are bigger than the districts I use in this study. The numbers for individual districts are therefore often identical and should merely be taken as indicative of the approximate affectedness by the slave trade of each district.

Distance to capital / state presence	<p>more significant when the cut-off point is raised (e.g. to 1.5 instead of 1 hour) owing to the fact that there actually is a linear interaction effect between remoteness and the effect of conflict on cooperation, as explored in columns 9 and 10 in Table 8 in the supporting information.</p> <p>Capital as centre of political and economic power influences dynamics of conflict and prevalence and type of violence (Buhaug and Rød 2006; Fearon and Laitin 2003; Raleigh and Hegre 2009; Schutte 2013); the further the distance from the capital, the weaker the influence of formal institutions tends to be (Michalopoulos and Papaioannou 2014), which may influence cooperativeness (by crowding in trustiness, or be crowding out self-help and organisation, for instance)</p>	Distance between capital/ main city and centre of district; additive index of presence (1) or absence (0) of the following state institutions, according to Afrobarometer	abuja_distance, state_presence
District size	Reference indicator	Calculated from FAO (2008) Administrative Units dataset	pop00
Population size	Reference indicator	Calculated from WorldPop data (Linard et al. 2012).	district_area

Measures of local collective action	Afrobarometer question	Coding	Variable name
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Community Meeting attendance	<p>Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year. If not, would you do this if you had the chance: Attended a community meeting?</p> <p>0=No, would never do this, 1=No, but would do if had the chance, 2=Yes, once or twice, 3=Yes, several times, 4=Yes, often, 9=Don't know, 998=Refused to answer, -1=Missing data</p>	Coded as one when respondent answered 3 or 4, zero if 0, 1 or 2 (not applicable, missing, don't know and refused coded as missing)	COMM_MEET
Volunteering	<p>Let's turn to your role in the community. Now I am going to read out a list of groups that people join or attend. For each one, could you tell me whether you are an official leader, an active member, an inactive member, or not a member: Some other voluntary association or community group?</p> <p>0=Not a member, 1=Inactive member, 2=Active member, 3=Official leader, 9=Don't know, 998=Refused to answer, -1=Missing data</p>	Coded as one when respondent answered 2 or 3, zero if 0 or 1 (not applicable, missing, don't know and refused coded as missing)	VOLUNTEER

Attitudinal correlates	Afrobarometer question	Coding	Variable name
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Trust in relatives	<p>How much do you trust each of the following types of people: Your relatives?</p> <p>0=Not at all, 1=Just a little, 2=I trust them somewhat, 3=I trust them a lot, Not applicable (i.e., no relatives, 9=Don't know, 998=Refused to answer, -1=Missing data</p>	Coded as one when respondent answered 0 or 1, zero if 2 or 3 (not applicable, missing, don't know and refused coded as missing)	DIS-TRUST_RELATIVES
Trust in members of other ethnic groups	<p>How much do you trust each of the following types of people: Nigerians from other ethnic groups?</p> <p>0=Not at all, 1=Just a little, 2=I trust them somewhat, 3=I trust them a lot, 9=Don't know, 98=Refused to Answer, -1=Missing Data</p>	Coded as one when respondent answered 0 or 1, zero if 2 or 3 (not applicable, missing, don't know and refused coded as missing)	DIS-TRUST_OTHERETHNIC
Respondent identifies mainly with own ethnic group	<p>Let us suppose that you had to choose between being a Nigerian and being a _____ [R's Ethnic Group]. Which of the following best expresses your feelings?</p> <p>1=I feel only (R's ethnic group), 2=I feel more (R's ethnic group) than Nigerian, 3=I feel equally Nigerian and (R's ethnic group), 4=I feel more Nigerian than (R's ethnic group), 5=I feel only Nigerian, 7=Not applicable, 9=Don't know, 998=Refused to answer, -1=Missing data</p>	Coded as one when respondent answered 1 or 2, zero if 3, 4 or 5 (not applicable, missing, don't know and refused coded as missing)	ETH-NIC_IDENTITY