

How indiscriminate violence fuels conflicts between groups: Evidence from Kenya*

Sebastian Schutte
Peace Research Institute Oslo
sebastian@prio.org

Constantin Ruhe
Goethe University Frankfurt
ruhe@soz.uni-frankfurt.de

Andrew Linke
University of Utah
Peace Research Institute Oslo
andrew.linke@geog.utah.edu

Word count: 11,174

Abstract

Armed conflicts frequently fuel tensions between groups. The “cognitive perspective” of group identification offers a possible explanation, but is tacit on exact causal pathways. We predict that indiscriminate violence by armed actors induces fear of future attacks which in turn leads to prejudice, enhanced in-group cohesion, and calls for segregation. Selective violence does not have these effects. Relying on panel surveys conducted in Nairobi and Mombasa during the violent Kenyan elections in the Summer of 2017, we find evidence for the predicted effects among Christians in 2-way Fixed Effects estimation and an endorsement experiment.

Keywords: Kenya, armed conflict, panel survey, electoral violence

*We would like to express gratitude for financial support to the German Foundation for Peace Research (DSF, Grant #SP06/06-2015), the EU FP7 Marie Curie Zukunftskolleg Incoming Fellowship Program (Grant #291784), the Zukunftskolleg of the University of Konstanz, and the University of Utah. Earlier drafts of the paper have received helpful comments from Alexander De Juan, Hannah Smidt, Christian von Soest, and other members of the German Institute of Global and Area Studies. Tore Wig has provided valuable feedback as a discussant at APSA 2018 and so did the participants of the 2018 symposium on “the Micro-Dynamics of Armed Conflicts” at IBEI Barcelona. Finally, Sirianne Dahlum, Siri Aas Rustad, Adrian Arellano, Haakon Gjerløw, Halvard Buhaug, and Nils Petter Gleditsch of the Peace Research Institute Oslo provided great suggestions for improving the final draft. We would like to thank Able Oyuke and Sam Balongo of IDS Nairobi for excellent management of the surveys in Kenya.

1 Introduction

In several high-profile cases, conflict between groups has erupted during political uprisings. A prominent example is the sectarian turn in the Iraq War in 2006 (see [Rosen 2010](#)), but new fault lines between groups have also emerged in other conflicts: the relationship between ethnic Russians and Ukrainians has deteriorated in the wake of the annexation of Crimea ([Chayinska et al. 2017](#)) and north-south divides in Nigeria have been reinforced in recent Boko Haram attacks ([Iyekekpolo 2018](#)).

Despite their prevalence, group tensions in times of political violence remain poorly understood. To fill the gap, we ask the following research question: *how does violence by armed actors contribute to increased group tensions?* Theoretically, we approach this question from a cognitive perspective of group identification and focus on the effects of fear induced by violence against civilians. Under fear, entire out-groups associated with perpetrators are seen in a more negative light while in-group identification is reinforced. The role of fear in group conflict has been theorized before, but so far eluded direct testing (see [Ignatieff 1994](#); [McDoom 2012](#); [Pearlman 2016](#)).

Empirically, we build on studies researching sentiments in the midst of violent conflict based on field- and survey experiments ([Lyall et al. 2013](#); [Nair and Sambanis 2019](#)), and research into causes and consequences of fear in times of political violence ([Green 1995](#); [Schaller and Neuberg 2012](#); [Williams et al. 2018](#)). We focus on Kenya, a country that has mainly seen conflict along ethnic and political lines in the past ([Ishiyama et al. 2016](#)). However, the confrontation between Islamist groups and security forces has contributed to recent tensions between religious groups that present an eligible case (see [Rink and Sharma](#)

2018). Our research design elicits the effects of exposure to Islamist attacks as well as anti-terrorism raids and examines resulting changes in individual attitudes of Christians and Muslims before, during, and after the violent Kenyan elections in 2017. This unique setup allows us to test our predictions as within-respondent variation caused by exposure to violence and subsequent fear of future victimization.

The results largely confirm the proposed effect for Christian respondents (N=1,452). Muslim reactions do not differ fundamentally, but fail to reach statistical significance which could be owed to the smaller sample size (N=636) and particularities of the case. We conclude that the cognitive perspective of group conflict has predictive power and that attacks against civilians increase the salience of divisive group identities in ongoing conflicts.

2 How violence shapes group tensions

Much research on has focused on the structural conditions that make ethnic and religious conflict more likely. However, less attention has been given to fighting between groups arising in the midst of intrastate conflict. Yet, group tensions flaring up in times of political violence is a recurring pattern (see [Kalyvas and Kocher 2007](#)).

Theoretical justice to this effect can be done from a “cognitive perspective” of group identification. Rather than treating groups as fixed and given actors, [Brubaker et al. \(2004:65\)](#) suggest “that ethnicity is fundamentally not a thing *in* the world, but a perspective *on* the world” (emphasis in original). Irrespective of ancient hatred or structural changes to the state, group identities can become salient as entire groups are increasingly seen as complicit in attacks. [Brubaker \(2002:167\)](#) refers to this process as “ethnicization”, i.e. retaliatory vio-

lence erupting after a series of attacks that collectively affect individuals with shared traits. Brubaker et al. (2004:82) generalize this line of thought into nationalist identity formation and defines “groupness” as a more or less salient conflict dimension. With a keen eye for the micro-processes of intrastate wars, Brubaker (2002:171) illustrates the nexus of violence and group identification:

When the small, ill-equipped, ragtag Kosovo Liberation Army stepped up its attacks on Serb policemen and other targets in early 1998, for example, this was done as a deliberate –and successful– strategy of provoking massive regime reprisals. As in many such situations, the brunt of the reprisals was borne by civilians. The cycle of attacks and counterattacks sharply increased groupness among both Kosovo Albanians and Kosovo Serbs, generated greater support for the KLA among both Kosovo and diaspora Albanians and bolstered KLA recruitment and funding. This enabled the KLA to mount a more serious challenge to the regime, which in turn generated more brutal regime reprisals and so on.

With the benefit of hindsight, we can find more examples. Reflecting on Al-Qaeda’s options after the 2003 invasion of Iraq, Abu Musab al-Zarqawi opted to ignite a full-blown sectarian conflict between Sunni and Shia by suggesting that “[i]f we succeed in dragging them into the arena of sectarian war, it will become possible to awaken the inattentive Sunnis as they feel imminent danger”. By attacking one of the holiest sites in Shia Islam, the Al-Askari Mosque, in both 2005 and 2006, this strategy was put into action. Regime reprisals and sectarian retaliation against Sunnies followed and the result is aptly summarized by Rosen (2010:17): “Sunnies would soon consider themselves the target of collective punishment. Treated as the enemy, many of them would soon become just that”. For the next three years, the conflict entered its most lethal phase, with casualty estimates in the hundreds of thousands – largely due to sectarian violence.¹ With the rise of ISIL, targeting the peaceful coexistence of Muslims and Christians in the West again became an explicitly stated objective fully inline

¹For a comprehensive analysis of civilian and military casualties in Iraq from 2003 to 2008 see Carpenter et al. (2013).

with this al-Zarqawi’s reasoning (see [Hussain 2015](#)).

Despite such examples of micro-processes compatible with the “cognitive explanation”, the theory has shortcomings. Most importantly, [Brubaker et al. \(2004:65\)](#) remain tacit on mechanisms and state that their “aim is not to advance specific hypotheses”.

The cognitive perspective therefore offers a plausible narrative of how group agency emerges in the midst of conflict, but does not commit to testable implications. Additionally, [Green and Seher \(2003:526\)](#) argued that much better research designs would be needed to test it:

One barrier to the systematic analysis of cross-regional or cross-temporal variation is simply the lack of data. [...] The same may be said for the paucity of individual-level data, especially panel data that track respondents over time. Rarely have social scientists endeavored to observe a set of people as their life circumstances change radically because of unfolding events [...] and never to our knowledge in the context of ethnic violence.

This assessment was certainly correct in 2003, but methodological and technological innovation has paved the way for acquiring such data. In survey experiments, subtle differences in questionnaires can reveal latent sentiments towards groups and actors.

Such designs have been used to measure popular attitudes in ongoing conflicts (see [Lyll et al. 2013](#); [Hirose et al. 2017](#)). Additionally, mobile phone technology has connected the majority of humanity electronically, thereby extending the range of mobile surveys.² Finally, mobile payment solutions (see [Gikunda et al. 2014](#)) enable transmission of small financial reimbursements for survey participation, which allows for the collection of panel data.

In summary, previous research has contributed a cognitive perspective on group dynamics in intrastate war that offers qualitative adequacy, but lacks commitment to psychological mechanisms and rigorous testing. Research on micro-dynamics of violence in intrastate conflicts contributes sophisticated research designs and technological progress enables secure,

²Between 2000 and 2012 alone, the global user base of mobile phones has increased from one to six billion, with five billion residing in developing countries(see [World Bank 2012](#)).

large-scale surveys in episodes of political violence. Leveraging these innovations, we extend the cognitive perspective in the next section and offer empirical insights subsequently.

3 Mechanisms and testable implications

We argue that the psychological effects of political violence fundamentally depend on the types of attacks individuals are exposed to. Research on the micro-dynamics of violence in civil war (see [Kalyvas 2006](#); [Metelits 2010](#)) has established a crucial typology: military actors sometimes resort to *selective violence* in armed attacks, i.e. engaging known adversaries and collaborators of the enemy. At other times, they rely on *indiscriminate violence*. Generally, “[v]iolence is selective when there is an intention to ascertain individual guilt [...] whereas indiscriminate violence entails collective targeting” ([Kalyvas 2006:142](#)).³ This unconditional aspect of indiscriminate attacks is crucial: targeted populations cannot shield themselves from future harm, even if they disengage from supporting political or military actors.

Beyond these ideal types, several hybrid forms of violence are imaginable, and the original dichotomy has been criticized as too simplistic (see [Gutiérrez-Sanín and Wood 2017:26](#)). Patterns of violence that defy simple classification are certainly imaginable. For instance, prominent members of a group can be targeted selectively, not because they pose military threats, but because they are high-profile representatives of the targeted group. However, terrorist attacks and loose rules of engagement in counter-terrorism kill bystanders indiscriminately. Victimization in those cases amounts to belonging to a general target population and being in the wrong place at the wrong time. The inevitable and oftentimes intended effect of such attacks is to strike fear of future victimization into the minds of civilians ([Hoffman 2006:40](#)). **We expect indiscriminate attacks by both security forces and non-state actors to increase fears for personal safety among affected individuals**

³Indiscriminate violence can be used to coerce civilians into collaboration and deter against defection ([Kalyvas and Kocher 2007:210](#)). Beyond intentional targeting, bystanders can be harmed due to sparse information ([Kalyvas 2006:69](#)), as well as technological or tactical constraints (see [Lyll and Wilson 2009](#)).

(Hypothesis 1a). However, not all political violence is applied indiscriminately. Targeted arrests or assassinations, as well as attacks on (para-)military forces leave bystanders unaffected. Since being targeted selectively is the result of loyalties to a political actor, neutral bystanders witnessing such attacks have nothing to fear.

We therefore believe that selective attacks are associated with a smaller increase in fear than indiscriminate attacks among affected individuals (Hypothesis 1b).

Once prevalent, fear can give rise to increased “groupness” as described by [Brubaker et al. \(2004:82\)](#). Mutual fears have long been suspected to contribute to conflicts between groups, and their role has been thoroughly documented in fully escalated cases such as Rwanda and Syria (see [McDoom 2012](#); [Pearlman 2016](#)).

Newer psychological research is compatible with these insights. Under fear of victimization, classifications into friend and foe become primary concerns and such classifications are frequently biased toward identifying too many potential threats (see [Neuberg and Schaller 2016](#)). Additionally, conflict environments leave victims and witnesses usually unable to identify individual perpetrators. Rather, they are left with knowledge of the type of person responsible for their misery: Christian mercenaries, Muslim Alawites, Kurdish Peshmerga.⁴ Again, fear takes on a crucial mediating role. [Deutsch et al. \(2011:274\)](#) observe that “intense fear causes ‘tunnel vision,’ reducing the range of one’s perceptions, thoughts, and choices, risking that we make suboptimal decisions [...] It may save us from immediate danger. However, in the case of complex conflict, fear easily operates malignly.” Even fear rooted in non-social circumstances can have measurable effects on group relations: [Schaller and Neuberg \(2012\)](#) induced moderate levels of fear under controlled lab conditions by showing unsettling video clips in low light conditions to experimental subjects and measured heightened anti-out-group prejudice subsequently. Thus, information-deprived conflict en-

⁴[Kalyvas \(2006:89-91\)](#) documents the prevalence of this “identification problem” for numerous cases spanning from Spanish resistance to Napoleonic occupation to contemporary Afghanistan.

vironments and cognitive mechanisms combine into potent drivers of prejudice and suggest that **fear inflicted by indiscriminate attacks increases prejudice against groups associated with perpetrators (Hypothesis 2)**.

Simultaneously, attachment to in-group members thrives under fear. Arguably, the cohesive effect of external pressure is maximized if a group is attacked indiscriminately, i.e. under disregard for individual-level attributes of victims. Under such circumstances, attachments to individuals with shared traits grows. Because indiscriminate attacks cannot be avoided by compliance, the only viable defense lies in limiting interactions with the out-group and intensified engagement with the in-group. Therefore, **fear inflicted by indiscriminate attacks increases support for internal cohesion and external segregation (Hypothesis 3)**.

If such testable expectations hold, this line of thinking can be extended into explaining runaway cycles of violence between groups. A long-standing insight on prejudice is that personal contact serves as an antidote (see [Amir 1969](#)). But as cohesion and segregation increase after initial attacks, such contacts decline, paving the way for increased prejudice. Prejudice, classically defined as an “antipathy based upon a faulty and inflexible generalization” ([Allport 1954:9](#)), can lead to further segregation from out-group members who pose no threat and make indiscriminate retaliation morally conceivable.

Tracking this vicious circle over time would require anticipation of a fully escalated intrastate conflict and lies beyond the capabilities of this study. Instead, we present this model of escalation as conjecture, but empirically test the effects of violence on fear, prejudice, cohesion and segregation in a conflict that temporarily strained relations between Christians and Muslims in Kenya in 2017.

4 Case selection and research design

Testing our hypotheses is difficult for a number of reasons. The presented argument is causal, yet inducing violence experimentally to study its effects would be unethical. Since

we presume fear of impending violence to be the main driver of group tensions, we cannot generate information treatments in field experiments, as it has been done successfully in previous studies on separatism, ethnic identification and repression (see [Nair and Sambanis 2019](#); [Young 2019](#)).

Autobiographical accounts of ex-combatants are prone to post-hoc rationalizations which can be endogenous to conflict outcome. This is unproblematic for studies on the post-conflict effects of exposure to violence (see [Beber et al. 2014](#); [Bauer et al. 2016](#); [Mironova and Whitt 2018](#)), but presents an obstacle for researching initial escalation.

Therefore, time-variant surveys with identical respondents were identified as the remaining viable route. However, protection and privacy of respondents and survey teams had to be assured. Beyond that, the surveys conducted in the field had to fall within the limited funding period of the project, further complicating case selection. Moreover, sentiments in high-intensity conflicts between fully entrenched groups simply fall outside of the scope of the discussion and offer prohibitive ethical and logistical challenges. Finally, a case of increased political violence that can affect group relations had to be predicted ahead of time to allow for planning and implementation of the survey.

While all these considerations constrain case selection, one central aspect of the cognitive explanation generates leeway: its generality. Instead of being confined to particular political and historical circumstances, any situation witnessing indiscriminate attacks across group boundaries should yield traces of the presumed effects.

Operating within these criteria, we chose to monitor how Islamist attacks and violent anti-terrorism raids by security forces in Kenya affect relations between the Christian majority and the Muslim minority. Although the dominant conflict cleavage in Kenya originates from ethno-political alliances and not religion, relations between religious groups have become increasingly strained in recent years. We conducted a panel survey before, during and after the Kenyan presidential elections of 2017. We correctly predicted that these elections would

be tightly contested between political alliances. More importantly, however, and as expected, the elections also served as a catalyst for Islamist attacks and heavy-handed crackdowns.

We thus study how violence by Islamists and anti-terrorism squads affect religious group tensions during a time, when electoral competition emphasizes other societal fault lines, which cross-cut religious identity⁵. Given that previous empirical research shows that political competition appears to bolster ethnic identity while reducing the relevance of other identities (cf. Eifert et al. 2010), our research design presents a hard test for our theory. To protect respondents and survey teams, we rely on mobile phone interviews after the onset of hostilities.⁶ Several recent studies stress the idiosyncrasies of religious conflicts in comparison to ethnic struggles (see McCauley 2014; Basedau et al. 2016). We fully acknowledge these differences. Rather than proposing a full explanation for all identity-based conflicts, we provide insights into how the political salience of group identity changes under indiscriminate attacks.

We rely on a mixture of approaches for causal identification. Experienced violence, fear, and support for cohesion and segregation are measured in direct questions and mediation analysis is used to measure the indirect effects of indiscriminate violence via fear. Prejudice against groups associated with perpetrators is measured in an endorsement experiment. In the following sections, we will elaborate on the political situation in Kenya and its relevance for testing the proposed associations.

⁵see section 3 in supporting information for descriptive statistics of religious affiliation and political/ethnic identification.

⁶The Ethics Board of <INSTITUTION 1> has reviewed a proposal for the study. While stressing that the ultimate responsibility for any scientific study lies with the investigator, the board did not object to the proposal given the above considerations, as well as our implementations of informed consent for participants, a non-invasive questionnaire, and IT security precautions to protect respondents' privacy. Similarly, the IRB of <INSTITUTION 2> deemed the project exempt from a full human subjects research review (case <NUMBER>).

4.1 Religious tensions in Kenya

Approximately 83% of the Kenyan population are Christian, while Muslims account for 11.2%. Within Africa, Kenya is representative in several ways: it is neither extremely violent nor peaceful; per capita, it occupies a middle ground between the poorest and most affluent countries on the continent; and contemporary national institutions are generally democratic, but struggle with corruption, placing the country near the middle of a continuum for quality of governance (see [CIA 2018](#)).

Although Kenya never experienced a full-blown religious intrastate war, disputes between Christian and Muslim communities – including overt hostilities and lethal violence – have a long history in the country. Punctuated by high profile attacks, such as the 1998 U.S. embassy bombing by Al-Qaeda and the 2013 Westgate mall attacks by Al-Shabaab in Nairobi, a persistent level of ongoing strife has overshadowed the last two decades. The continuing instability is fueled by cross-border attacks and infiltrations by Islamist groups from neighboring Somalia.

The Kenyan government has reacted to these threats both domestically and internationally. Far reaching legislation comparable to the “Patriot Act” in the US has been proposed in 2003. This initial Anti-Terrorism Bill was supposed to grant extensive powers to law-enforcement. Since Muslims could be stopped and interrogated under the original proposal simply for wearing traditional clothing, it was strongly opposed by the Muslim minority. A series of amendments and revisions were proposed and rejected until a final version passed in 2012 (see [Ndzovu 2014:116-117](#)).

Domestic tensions are amplified by international terrorism and foreign intervention. Roughly comparable to the 2001 NATO invasion of Afghanistan or Israel’s 2006 attack on Lebanon, Kenya relied on military invasion to increase security. Following a string of deadly terrorist attacks in Nairobi, Kenyan armed forces crossed into Somalia on 16 October 2011. Blowback for this intervention – increased terrorist attacks inside of Kenya – have become commonplace

in the years since ([Anderson and McKnight 2014](#)).

A devastating attack by Islamist militants on a university in Garissa killed nearly 150 people in 2015. In the recent past, Kenyan media reported an increase in the frequency of smaller scale, violent attacks, for instance on commuter buses between major cities (see [Cherno 2018](#)). In several instances, Islamist attackers have singled out Christians for execution, while sparing members of other groups (see [BBC 2014](#); [McNeish 2018](#)). Killing indiscriminately within the Christian community appears to be a strategic goal of Islamist terrorists in Kenya.

In response to such atrocities, Kenya's security forces (KSF hereafter), including the Anti-Terrorism Police Unit, General Service Unit (GSU), Kenyan Defense Forces, and National Intelligence Service regularly raid mosques and other suspected militant hideouts. While a proportion of these attacks targets Islamist sympathizers and combatants, the Muslim civilian population is also partially affected.

Heavy-handed police actions and even allegations of targeted killings strain relations between Muslims and the Christian-dominated KSF. In July 2016, Human Rights Watch confirmed that the dead bodies of a Muslim civil rights attorney, his client, and driver were found in a river in Machakos county after being held in Administration Police custody ([Human Rights Watch 2016](#)).

In light of the long-standing controversy over Muslim discrimination following the passing of the 2012 Anti-Terrorism Bill, these attacks are perceived as attacks on the Muslim community. As [Ndzovu \(2014:117\)](#) puts it: "For Muslims, particularly of Somali and Arab descent, their aspirations as Kenyans continue to be hindered by ethno-religious biases."

While highlighting the relevance of troubled social relations and religious identification, [Rink and Sharma \(2018\)](#) conclude that Kenya's counter-terrorism efforts have worsened Christian-Muslim relations. [Botha \(2014\)](#) stresses that beyond ethnic Somalis, Islamist groups have been able to recruit recent converts and operate successfully outside their initial

strongholds.

Under the telling title “killing a mosquito with a hammer”, [Lind et al. \(2017\)](#) furthered the criticism of Kenya’s security response to terrorism. Partly due to public objections, president Kenyatta announced a new National Strategy to Counter Violent Extremism emphasizing de-radicalization efforts that are less overtly repressive ([Kaberia 2016](#)). Still, civilians continue to be targeted by Islamists militants and state security forces in this ongoing lethal conflict.

In the years directly preceding our study period, both political actors have used selective as well as indiscriminate attacks to advance their goals. Section 1 of the supplementary information highlights selected events from the ACLED event data collection to further illustrate this (see [Raleigh et al. 2010](#)).

Islamist attacks and anti-terrorism raids during the 2017 elections

Beyond the Christian-Muslim tensions, Kenyan politics is complex and contentious (see [Gutiérrez-Romero 2014](#)).⁷ Numerous ethnic minorities of different religious beliefs usually coalesce into broad political alliances in the run-up to presidential elections (see [Bratton and Kimenyi 2008](#)). Over the past decade, two contenders for office have emerged from such coalitions: incumbent president Uhuru Kenyatta and his long-term rival Raila Odinga.

We anticipated that the 2017 elections would temporarily elevate the threat of terrorist attacks as security measures during the election would divert resources from Kenya’s anti-terrorism efforts. At the same time, the KSF operations as well as Islamist violence would be mostly felt locally in affected neighborhoods while electoral tensions dominated the news. Thus, responses by survey participants would be driven more by individual experiences than by a prominent master narrative of events.

This short-term escalation seems to have occurred. Al-Shabaab did attempt to exploit electoral tensions by accusing Kenyatta of planning to tamper with results and by threatening

⁷We do not claim that politics in Kenya is primarily defined by religion. Rather, the discussed religious divide is one salient dimension. For a good overview of conflicts in Kenya see [Kimenyi and Ndung’u \(2005\)](#).

to disrupt the voting process (see [Abdikarim 2017](#)). Al-Shabaab’s interference even sparked some fears of an impending cyber-attack on electronic voting machines by the group ([West 2017](#)). In turn, Kenyan security forces increased pressure on the group prior to the election in the predominantly Muslim coastal region ([Fraser-Rahim and Hu 2017](#)). Figure 1 shows counts of violent events for all of Kenya during the study period. Due to this correctly predicted escalation, we were able to put our expectations to the test: state security forces and Islamist militants used both selective and indiscriminate violence to achieve tactical victories. We were able to measure sentiments among Christians and Muslims before, during, and after exposure to violence at the hands of armed actors.

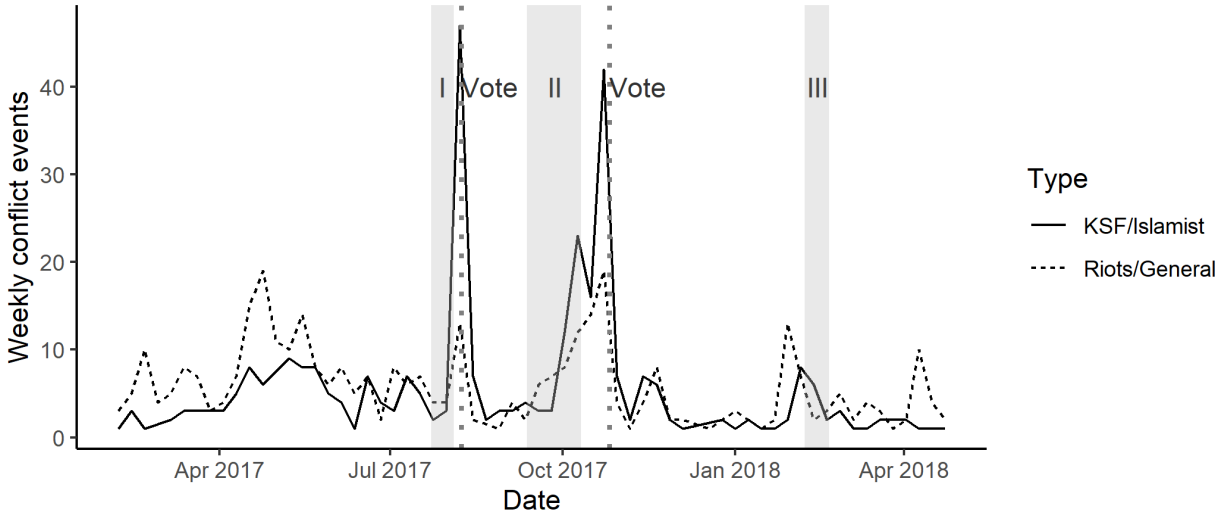


Figure 1: Timeline of violent events during the study period based on data from the ACLED data collection (see [Raleigh et al. 2010](#)). Note the correlation between Islamist attacks and general riots, as well as the timing of survey waves before (I), during (II), and after (III) larger spikes. See also Figure A4 in Section 5.1 of the supplementary information for corresponding distributions of fear of violence in the survey responses and a depiction of the geographic locations of conflict events (Figure A7).

However, beyond the increased cadence of attacks, tensions ran high between the electoral contenders. Having lost officially, Odinga promptly disputed the outcome on the grounds that the election was rigged and that electronic voting machines were hacked to favor Kenyatta. In subsequent days, more than 20 protesters, rioters, and bystanders died in a display

of state force that many claimed lacked sufficient restraint (Duggan et al. 2017). After having failed with an initial appeal, the opposition filed a petition with the Supreme Court. The Supreme Court annulled the election results on September 1 after reviewing irregularities sufficient to warrant a new poll. A new election was scheduled to take place in late October 2017.

Pointing to remaining problems with the voting process, Odinga announced on October 10 that he was withdrawing. With timelines for the new election shifting repeatedly, one main contender withdrawn from the race, and unresolved questions about nefarious activities during the last poll still circulating, concerns of impending large-scale conflict were running high. Demonstrating resilience to political tensions and commitment to democracy, Kenya did not dissolve into intrastate war or experience a *Coup d'Etat*. Despite the Supreme Court ruling him out of office, Kenyatta did not resort to emergency laws to maintain his power and won the second elections on October 26, 2017.

Admittedly, the violent disputes over the election and its eventual repetition was unforeseen. As we will illustrate below, the wording of the questions in our survey explicitly refers to the conflict dyad between Islamists and security forces and not followers of Odinga challenging the election outcomes. We thus are able to distinguish this conflict dyad from the separate electoral conflict. In our empirical analysis, the strong electoral tensions likely attenuate the effects of violence between Islamists and security forces on religious group relations, as cross-cutting ethnic identities become more salient during the election. Hence, studying the effects of exposure to Islamist and KSF violence in times of high political uncertainty presents a hard test for our theoretical expectation.

4.2 Survey design

We conducted an original panel survey in Kenya in three waves around the 2017 presidential elections. We collected data from respondents in Nairobi and Mombasa, with roughly one

half of respondents located in each city. Our survey is a stratified random sample, which stratified by city district and selected enumeration areas within districts based on probability proportionate to population size (PPPS). Despite the fact that Muslims are a small national minority, they constitute about 40% of the population in Mombasa. The combined sample is therefore more balanced and enables research on both groups.

Respondents were selected and interviewed in a first wave from July to early August 2017 using face-to-face interviews, prior to the first election on August 8th. Each respondent was asked to provide their mobile phone number to allow electronic follow-up interviews in subsequent waves. Using these numbers, we contacted a random subsample via mobile phone during a second wave in late September and October 2017 then in a third wave in February 2018. Interviews were completed by 2,109 first wave respondents, 907 out of 1,484 contacted respondents (61% response rate) in the second wave, and 777 out of 1,560 contacted respondents (50% response rate) in the third wave. We analyze attrition patterns in great detail and find no evidence that attrition is correlated with observed respondent characteristics.⁸

In order to test our hypotheses, we relied on both direct questions and an endorsement experiment, available both in English and Swahili. In combination with mediation analysis (see section 4.4), direct questions elicit the effects of exposure to indiscriminate attacks on cohesion and prejudice via fear. However, some of the aversion of respondents toward interacting with the out-group could simply be driven by security considerations rather than prejudice. As discussed above, we believe that violence-induced fear causes prejudice and this claim suggests that negative sentiments toward the out-group should be discernible even when security is not a concern. We therefore complement direct questions with an endorsement experiment that probes respondents' reactions to benign policy proposals allegedly made by members of the out-group.

⁸See sections 2 and 3 of the supplementary information for additional details of the survey data collection and participation pattern.

4.3 Survey questions

Our main independent variable is the individually reported exposure to different types of violence, which we elicit with our survey. In direct questions, we first measured exposure to selective violence in the struggle between Kenyan security forces and Islamist groups. In our questions, we were explicit with regard to the conflict dyad, the relevant time frame, and the status of the victims of the attacks, thereby answering the call for explicitly defined patterns of violence by [Gutiérrez-Sanín and Wood](#) (see 2017:26):

In Kenya, Islamist extremists have attacked state security forces. Are you aware of such events from the past three months?

Answer choices included “No”, “Yes, I have heard/read about such events in the news”, “Yes, I know of such events in my city”, “Yes, I have witnessed such events in my neighborhood”, “Yes, I personally know people who were affected”. In the subsequent question, we turned the focus to indiscriminate violence, providing the same set of answer categories:

Some people say Islamist extremists sometimes target innocent people. Are you aware of such events from the past three months?⁹

We asked similar questions about violence by security forces. First, we inquired about selective violence against Islamists: “In their fight against religious extremism, the Kenyan security forces arrest, jail and, in extreme situations, sometimes even kill individuals who support extremist movements. Are you aware of such events from the past three months?” For indiscriminate violence against civilians, we asked the following: “Some people say Kenyan

⁹The choice of wording for these questions was directly driven by the conceptual emphasis on a lack of “effort to ascertain individual guilt” ([Kalyvas 2006:142](#)). For the English translation of the questionnaire, this is here expressed as occasional targeting of “innocent people” and in Swahili as “people not guilty” (“watu wasio na hatia”). We refrained from asking about attacks on “civilians” (Swahili: “raia”) which in Swahili also translates as “citizens” and may mislead respondents to consider only Kenyan nationals.

state security forces sometimes target innocent people in their fight against religious extremism. Are you aware of such events from the past three months?” We asked all respondents separately about their concerns of becoming targets of Islamists and KSF forces.

We then dichotomized the five-point answers. Respondents were coded as 1 if they had witnessed events in their neighborhood or knew affected people. Hence, we distinguish personal exposure from hearsay, news coverage, or lack of knowledge of such events. In order to measure fear of an armed actors we further asked each respondent “Are you concerned about being targeted by [Islamist extremists? / Kenyan state security forces (e.g. military, GSU, or police)?]” Both questions could be answered using either “yes” or “no”. By naming attacking actors, we tried to elicit specific fears rather than general concerns about the present security situation.

To measure additional dependent variables, we asked to what extent respondents agree with various statements on a five point Likert scale, which ranges from “strongly agree” to “strongly disagree”. Following a research tradition that sees cohesion as commitment to group agency (Piper et al. 1983), we asked respondents if their own religious community “should stick together and put disagreements aside”. While this question captures a broad desire for in-group unity, we also specifically probed respondents’ preference to reduce exposure with the religious out-group in favor of segregation. To this end, we asked if respondents agreed that “it is better if Christians and Muslims live in different neighborhoods”.

Rejection of intermarriage has long been regarded central to prejudice (Kalmijn 1998; Rodriguez-Garcia 2015) and thus presents an eligible area for direct questioning. We therefore asked if respondents “would approve if [their] child wanted to marry a [Muslim/Christian].” Yet, this question might only insufficiently reflect prejudice in violent conflict settings. Table 1 provides descriptive statistics of our direct questions.

As discussed above, rejecting interactions with the out-group may be partially driven by security considerations rather than general prejudice. To mitigate this problem, we also

Table 1: Descriptive statistics for direct questions used in the analysis. (* indicates factor variable)

	n	mean	sd	min	max
Own religious group should stick together*	3780	4.34	0.76	1	5
Support for segregation*	3783	2.02	1.28	1	5
Support for marriage with Muslim*	2593	3.30	1.42	1	5
Support for marriage with Christian*	1068	3.17	1.51	1	5
Personal exposure to KSF indiscriminate violence	3705	0.04	0.20	0	1
Personal exposure to KSF selective violence	3680	0.03	0.18	0	1
Personal exposure to Islamist indiscriminate violence	3708	0.02	0.16	0	1
Personal exposure to Islamist selective violence	3705	0.02	0.14	0	1
Fear of KSF	3806	0.53	0.50	0	1
Fear of Islamists	3806	0.63	0.48	0	1
Job situation*	3798	3.84	1.78	1	6
Food shortage last month	3806	0.52	0.50	0	1
Follow leaders of own religious group*	3753	2.78	1.32	1	5

rely on an additional endorsement experiment. This technique for sensitive survey questions grants insights into population-level sentiments while guaranteeing anonymity of respondents (Bullock et al. 2011; Rosenfeld et al. 2016). We chose issues that are orthogonal to security dimensions and asked each respondent to evaluate three policy proposals in subsequent survey waves: increasing taxes to improve water pipelines, subsidize water purchases, and improve water treatment plants. These questions touch on uncontroversial policies that would not benefit any particular group and the built-in trade-off leads to approximately normally distributed responses free of ceiling and floor effects.

For a randomly chosen treatment group of respondents, we added the information that the proposal had been made by members of the respective religious out-group. For instance, the question on subsidizing water purchases read:

“Some of our [Muslim/Christian] respondents demand that taxes should be increased to subsidize water purchases, so it can be bought at more affordable prices. How much do you agree/disagree with this demand?”

Answers were given on a five-point Likert scale ranging from “strongly agree” to “strongly disagree”. Due to the randomized treatment of these identity features, any difference in

response patterns between the treatment and control group can be attributed to the addition of the religious affiliation of the endorser (Bullock et al. 2011).

Thus, if respondents in the treatment group tend to react more negatively to the policy proposal, we can conclude that this effect is caused by prejudice toward the endorsing out-group.¹⁰

4.4 Statistical analysis

In researching the effects of violence on attitudes, we need to account for confounding factors. For instance, young male Muslims living in neighborhoods suspected to harbor Islamist extremists could be at higher risk of witnessing police crackdowns. Due to repeated previous exposure, they might react to such events differently than other respondents. Additionally, marital status and education could plausibly affect outcome variables. Finally, Williams et al. (2018) find that experiences of violence lead to different levels of fear across genders and social roles, with women bearing social responsibility being most affected.

Instead of modeling these factors explicitly, we rely on individual-level fixed effects estimation. We account for time-varying effects in the same way: each survey wave could yield idiosyncratic effects due to changes in conflict activity. Instead of estimating this effect from observables, we additionally include survey wave fixed effects. Therefore, we estimate the effect of violence on fear as follows:

$$fear_{it} = \delta_{violence} violence_{it} + \beta X_{it} + a_i + b_t + \epsilon_{it} \quad (1)$$

Thereafter, we estimate the effect of fear on our direct question of cohesion, segregation and prejudice (Y_{it}) while controlling for a direct effect of violence:

¹⁰See section 6.1 of the supplementary information for a description of the responses in our endorsement experiment.

$$Y_{it} = \delta_{fear} fear_{it} + \gamma_{violence} violence_{it} + \beta X_{it} + a_i + b_t + \epsilon_{it} \quad (2)$$

To enable causal identification, we account for respondent fixed effects a_i as well as survey wave fixed effects b_t in all our models.¹¹ Therefore, the results are unaffected by possible time-invariant confounding variables such as age, education, or ethnic identity. Additionally, possible homogeneous differences across survey waves cannot drive the results.

The only remaining confounders are time-variant variables that only affect individuals. To account for those, we additionally include a number of control variables X_{it} , such as current employment situation, experienced food shortages during the past month and acceptance of political guidance by religious community leaders.

Based on the estimates in equations 1 and 2, we can calculate how violence affects our outcome variables via violence-induced fear, as predicted by our theory. For this purpose, we rely on causal mediation analysis which we will elaborate on below.

4.5 Results for the direct questions

Table 2 provides inferential results for the direct questions on fear, social cohesion, and prejudice among Christian respondents.¹² The results corroborate hypothesis 1a and 1b: Christian respondents react with higher levels of fear if they have been exposed to indiscriminate violence by Islamists. We do not find evidence that selective violence increases fear. Hence, it appears that the indiscriminate nature of violence is crucially important for this effect to take hold. Moreover, the perpetrator matters: only exposure to indiscriminate violence by Islamist groups increases fear of Islamists (Model 1).

¹¹We opted for this estimation strategy to take full advantage of all available observations. Researching within-subject changes in this way matches the explanatory goal of the study. First-difference estimation would be an alternative strategy, but come at the cost of reduced statistical power due to a smaller number of observations.

¹²A pooled model of all respondents with interactions between Muslim/Christian and the key independent variables confirms the results of the separate models reported in the paper, see section 5.4 in the supporting information. For descriptive statistics, see section 5.1 in the supplementary information.

Next we analyze how violence and fear affect attitudes. First, we assess how fear of violence changes cohesion. We study whether fear or exposure to violence makes individuals more likely to demand that Christians should “stick together and put disagreements aside”. This effect is not discernible in Model 2. However, the results change dramatically when we move to the more pointed question of whether respondents support religiously segregated neighborhoods. Model 3 indicates that respondents become more supportive of segregated neighborhoods when they develop concerns that they could be targeted by either KSF or Islamist violence. At the same time, we find no clear support for a direct effect of any form of violence, since all confidence intervals contain zero. Our expectations regarding prejudice are supported by findings on attitudes toward inter-religious marriage (Model 4). Christian respondent fearful of Islamists yield a substantial decrease in acceptance of their children marrying Muslims.

As predicted, the results indicate that indiscriminate Islamist violence leads to fear, which in turn contributes to prejudice and support for segregation among Christians. As anticipated, we find no such patterns for selective violence. Nevertheless, to explicitly test whether the effect of indiscriminate violence is mediated by fear of the respective armed group, we need to assess whether we can statistically attribute a proportion of the effect to changes in fear caused by exposure to indiscriminate violence.

This can be achieved using statistical mediation analysis. For the linear models, we multiply the effect of violence on fear ($\delta_{violence}$ in Equation 1) with the estimated effect of fear on our outcome variables (δ_{fear} in Equation 2). In our cases, this implies multiplying the coefficient of violence in our model of fear (Model 1) with the coefficient of fear in the model of segregation (Model 3) and inter-religious marriage (Model 4). We calculate the confidence interval of this product using the methods provided by [Tofghi and MacKinnon \(2011\)](#).

In Table 2, we report statistically significant effects of fear on segregation and inter-religious marriage. For these outcome variables, Figure 2 plots the average mediation effect

Table 2: Models of exposure to violence, fear and inter-group attitudes among Christian respondents. All models include fixed effects for both respondents and survey waves.

	<i>Hypotheses 1a + 1b</i>		<i>Hypothesis 3</i>		<i>Hypothesis 3</i>		<i>Hypothesis 2</i>	
	Fear of Islamists		Stick together		Segregation		Marrying Muslim	
	Model 1	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4
Exposed to indiscriminate Islamist violence	0.257** (0.094)	-0.010 (0.154)	0.159 (0.119)	-0.028 (0.200)	0.319 (0.258)	0.095 (0.263)		
Exposed to selective Islamist violence	-0.035 (0.110)	-0.304 (0.181)	-0.103 (0.146)	-0.265 (0.243)	0.067 (0.302)	-0.294 (0.311)		
Fear of Islamists		0.017 (0.053)	-0.055 (0.048)	0.177* (0.081)	0.319** (0.088)	-0.216* (0.091)		
Control variables								
Exposed to indiscriminate KSF violence	-0.025 (0.073)		0.159 (0.119)	-0.028 (0.200)		0.012 (0.204)		
Exposed to selective KSF violence	0.081 (0.089)		-0.103 (0.146)	-0.265 (0.243)		-0.413 (0.250)		
Fear of KSF			-0.055 (0.048)	0.177* (0.081)		0.222** (0.083)		
No job and looking	-0.048 (0.058)		0.027 (0.094)	-0.222 (0.158)		-0.152 (0.160)		
No job, still studying	0.158 (0.082)		-0.112 (0.135)	-0.537* (0.226)		-0.398 (0.230)		
Part-time job, not looking	0.072 (0.059)		0.161 (0.096)	-0.549** (0.161)		-0.433** (0.164)		
Part-time job, looking for second job	0.086 (0.070)		0.210 (0.115)	-0.862** (0.194)		-0.554** (0.199)		
Full-time job	0.039 (0.056)		0.201* (0.093)	-0.531** (0.155)		-0.347* (0.159)		
Experienced food shorntag during past month	0.038 (0.030)		-0.022 (0.049)	0.226** (0.082)		-0.248** (0.085)		
Follow leaders - 'agree'	-0.039 (0.040)		-0.401** (0.065)	-0.044 (0.110)		-0.128 (0.112)		
Follow leaders - 'neither agree nor disagree'	-0.094 (0.049)		-0.410** (0.080)	-0.401** (0.134)		-0.210 (0.137)		
Follow leaders - 'disagree'	-0.071 (0.042)		-0.542** (0.069)	-0.226* (0.115)		-0.112 (0.118)		
Follow leaders - 'strongly disagree'	-0.023 (0.054)		-0.461** (0.088)	-0.380* (0.149)		-0.058 (0.154)		
Respondent FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Survey wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
N	2491	2482	2482	2483	2483	2441	2441	

* p < 0.05; ** p < 0.01

of indiscriminate violence via fear, i.e. the effect of fear which can be attributed to earlier exposure to violence. The figure highlights that for both segregation and inter-religious marriage, a part of the association can be attributed to earlier experience of indiscriminate violence. We observe both an increase in support for segregation as well as decrease in approval of inter-religious marriage. Based on the direct questions, all four hypotheses hold for the largest fraction of our respondents, the Christian sample.

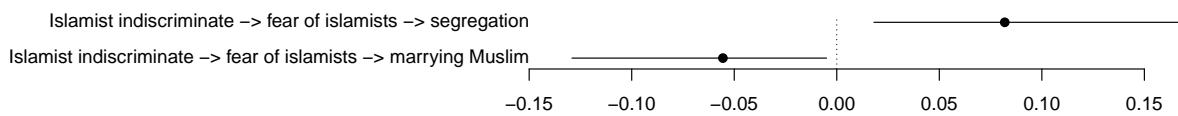


Figure 2: Evidence for Hypotheses 2 and 3 among Christian respondents: Effect of indiscriminate violence mediated by fear (with 95% confidence intervals), based on estimates in Table 2

We repeat the same analysis for our Muslim participants (see Table 3). Due to the substantively smaller number of respondents, the results are less clear. An initial noteworthy difference compared to the Christian sample is apparent in Muslims' fear of KSF violence. Model 5 indicates that Muslim respondents become more concerned about being targeted by KSF violence if they are exposed to Islamist violence. We did not predict this effect. Nevertheless, an intuitive interpretation exists: Muslims who are exposed to Islamist violence may actually anticipate retribution by KSF forces. These respondents are possibly concerned that they might become victims of KSF anti-terrorism raids or other forms of revenge.

For questions regarding segregation and inter-religious marriage (models 7 and 8), we find several similarities in the direction of the estimated effects albeit with larger confidence intervals. As in the Christian sample, support for segregation appears to increase with fear of KSF forces, albeit without reaching statistical significance. We also see an effect for fear of Islamists predicting increased support for segregation. This could be an indication that

security considerations may be driving some of the support for segregated neighborhoods in the Muslim sample. By remaining in Muslim-only neighborhoods, Muslim respondents would avoid getting caught in attacks of Islamists on the Christian majority.

In model 8, we find a direct negative effect of indiscriminate KSF violence on support of marriage across religious boundaries, but there is no clear association with fear. This result is in line with our theoretical prediction that indiscriminate violence by KSF units triggers a generally more negative stance against Christians (Hypothesis 2), yet the underlying mechanism seems to differ and might include moral or political outrage rather than fear.

In the Muslim sample, we only find a statistically significant effect of indiscriminate Islamist violence on fear of becoming a target of the KSF. Fear of KSF as a predictor of support for segregation falls just short of statistical significance. Figure 3 displays the estimate for the corresponding mediation analysis. We find a small positive indirect effect of indiscriminate violence on support for segregation, but this effect is only marginally statistically significant. The 95 percent confidence interval extends slightly below zero.

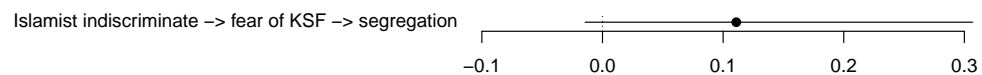


Figure 3: Evidence for Hypothesis 3 among Muslim respondents: Effect of indiscriminate violence mediated by fear (with 95% confidence intervals), based on estimates in Table 3

Overall, the results for the Muslim sample are substantively similar to the Christian sample. There are two striking exception however: indiscriminate Islamist violence seems to drive an increased desire for segregated neighborhoods via fear of KSF. We also find a negative direct effect of indiscriminate KSF violence on support for inter-religious marriage.

Table 3: Models of exposure to violence, fear and inter-group attitudes among Muslim respondents. All models include fixed effects for both respondents and survey waves.

	<i>Hypotheses 1a + 1b</i>		<i>Hypothesis 3</i>		<i>Hypothesis 3</i>		<i>Hypothesis 2</i>	
	Fear of KSF		Stick together		Segregation		Marrying Christian	
	Model 5	Model 6	Model 7	Model 8	Model 7	Model 8	Model 7	Model 8
Exposed to indiscriminate KSF violence	-0.060 (0.116)	0.070 (0.181)	-0.052 (0.298)	-0.711* (0.336)				
Exposed to selective KSF violence	-0.090 (0.125)	-0.287 (0.195)	-0.174 (0.317)	0.012 (0.360)				
Fear of KSF		0.060 (0.085)	0.244 (0.137)	-0.048 (0.156)				
Control variables								
Exposed to indiscriminate Islamist violence	0.455* (0.200)	0.395 (0.314)	-0.134 (0.508)	-0.227 (0.568)				
Exposed to selective Islamist violence	0.254 (0.189)	-0.322 (0.296)	-0.057 (0.500)	0.483 (0.539)				
Fear of Islamists		0.048 (0.080)	0.320* (0.130)	0.258 (0.147)				
No job and looking	0.011 (0.082)	-0.058 (0.129)	-0.485* (0.206)	-0.718** (0.233)				
No job, still studying	-0.153 (0.144)	-0.027 (0.227)	-0.433 (0.370)	-0.639 (0.416)				
Part-time job, not looking	0.070 (0.086)	0.116 (0.136)	-0.367 (0.217)	-0.469 (0.247)				
Part-time job, looking for second job	0.237* (0.110)	0.354* (0.175)	-0.458 (0.278)	-0.192 (0.316)				
Full-time job	0.046 (0.085)	0.176 (0.135)	-0.761** (0.216)	-0.469 (0.244)				
Experienced food shorttag during past month	-0.010 (0.053)	-0.066 (0.083)	0.162 (0.134)	-0.054 (0.153)				
Follow leaders - 'agree'	0.012 (0.062)	-0.431** (0.097)	-0.035 (0.156)	-0.110 (0.178)				
Follow leaders - 'neither agree nor disagree'	0.001 (0.085)	-0.447** (0.132)	-0.482* (0.215)	-0.141 (0.243)				
Follow leaders - 'disagree'	-0.018 (0.064)	-0.449** (0.101)	-0.231 (0.163)	0.133 (0.185)				
Follow leaders - 'strongly disagree'	0.093 (0.085)	-0.494** (0.134)	-0.694** (0.215)	0.032 (0.243)				
Respondent FE	Yes	Yes	Yes	Yes				
Survey wave FE	Yes	Yes	Yes	Yes				
N	1038	1034	1028	1015				

* p < 0.05; ** p < 0.01

4.6 Results for the endorsement experiments

The observed changes in attitudes might be at least partially driven by security considerations. This is especially relevant for questions regarding segregation and intermarriage. We therefore used endorsement experiments to measure general prejudice irrespective of security considerations. Endorsement experiments can be evaluated using either a measurement model which relies on an Item Response Theory framework (Bullock et al. 2011) as well as using linear models (Blair et al. 2013). The latter approach is much more easily extended to handle panel data components such as fixed effects and therefore efficiently eliminates any possible confounding due to constant respondent characteristics. This point is crucial for our study, because it leverages our longitudinal data structure and facilitates causal identification. Therefore, we conduct the analysis of our endorsement experiment using linear models.

For this purpose, we convert our data into a long format, i.e. for each respondent in each survey wave, we have three observations; one for each endorsement question. This allows us to estimate the following model:

$$Y_{itq} = \gamma_1 \text{endorser}_{iq} + \gamma_2 \text{endorser}_{iq} * \text{violence}_{it} + \gamma_3 \text{violence}_{it} + \beta X_{it} + a_{iq} + b_t + \epsilon_{itq} \quad (3)$$

whereby Y_{itq} is the answer of respondent i in wave t to endorsement question q , X_{it} is a vector of time-varying individual-level control variables and a_{iq} captures a respondent-endorsement question effect, i.e. the average tendency of respondent i to respond to question q . Finally, b_t models survey wave effects. The coefficient γ_1 estimates the effect of the out-group treatment, γ_2 describes the change in the treatment effect once a person is exposed to indiscriminate violence. We are interested in γ_2 , the change in the out-group endorsement effect due to violence as well as $\gamma_1 + \gamma_2$, the total out-group endorsement effect, given that a respondent is exposed to indiscriminate violence.

Figure 4 displays the results (see section 6.3 Table A10-11 in the supplementary information for the full table). We report both the endorsement effect for respondents who have not experienced violence (γ_1) as well as the effect after respondents were exposed to violence ($\gamma_1 + \gamma_2$).¹³ Since the number of people who report having personally experienced violence is relatively small, the confidence intervals for the latter estimates are quite large. Nevertheless, the results mirror the findings from our direct questions and generally support our theoretical predictions.

In the absence of violence, we do not find any out-group endorsement effect. This is the case for both the Christian as well as the Muslim sample. However, exposure to indiscriminate violence by the out-group changes the endorsement effect substantively, at least in the Christian sample: Christians who report having personally witnessed indiscriminate violence by Islamists display a considerable and statistically significant negative endorsement effect. In line with our theoretical predictions, we do not find a similar effect for selective violence. This finding indicates that Christians in our sample do in fact develop more negative attitudes towards Muslims after they are exposed to indiscriminate Islamist violence.

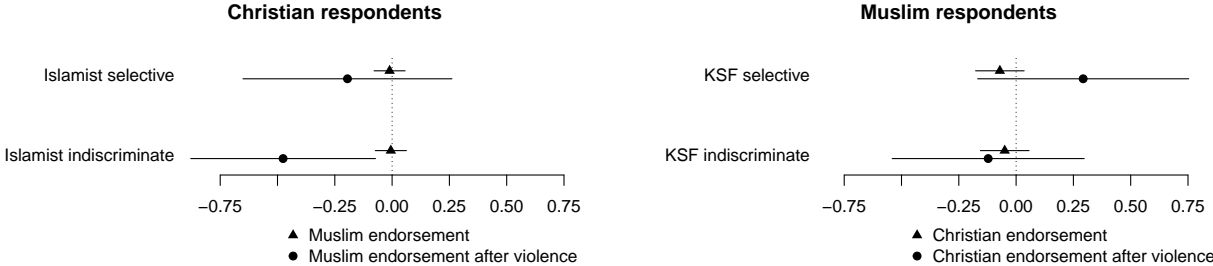


Figure 4: Evidence for Hypothesis 2: Endorsement effects among Christian and Muslim respondents (with 95% confidence intervals)

The Christian sample thus supports Hypothesis 2, i.e. the notion that indiscriminate

¹³Here, we present results for models with survey wave fixed effects (b_t) and respondent-endorsement question random effects (a_{iq}). We chose to present these results, since estimating a_{iq} as fixed effects would absorb γ_1 , which captures the raw out-group endorsement effect in the absence of violence. In section 6.3 of the supplementary information we report results which show that estimating a_{iq} as fixed effects yields substantively identical results for γ_2 , i.e. the change in the endorsement effect due to violence.

violence causes prejudice. As expected, selective violence, does not have this effect. We do not observe comparable reactions among Muslims.

The difference between the Christian and Muslim samples may have several explanations: first, the latter is much smaller, thereby drastically reducing statistical power. Second, while Islamist violence is clearly linked to the Islamic faith, KSF violence is perpetrated on behalf of the state. Although the large majority of Kenyans including the political leadership are Christians, the association of KSF and ordinary Christian citizens might be less tangible than the one linking Islamists and ordinary Muslim citizens. However, it is also possible that substantive differences exist between minority and majority groups: Christians represent 83% of the population in Kenya. If large-scale violence ever were to erupt between the groups, the much smaller Muslim minority would likely pay a higher price. The overall results of our analysis are compatible with this interpretation. Fear of Islamist attacks leads to support for separation of the groups, possibly to evade such attacks or to seek shelter within the in-group against predictable KSF crackdowns following such attacks. These reactions could be indicative of more acute concerns for personal safety in the event of violent escalations. Generally, the empirical results are robust to modeling and coding choices, as reported in sections 5 and 6 of the supplementary information.

5 Discussion and conclusion

In this article, we have studied a prevalent phenomenon in violent conflicts: increased tensions between groups caused by indiscriminate attacks. As a theoretical starting point, we have used Brubaker's (2004) "cognitive perspective" on group identification, but extended it by committing to testable psychological mechanisms. As empirical building blocks, we have leveraged Kalyvas' (2006) typology of violence and subsequent research designs tailored to understanding civilian sentiments in intrastate conflict. Our central expectation is that indiscriminate violence fuels group tensions, while selective violence does not. Additionally, we

contend that these differential outcomes result from fear of future victimization caused only by indiscriminate attacks.

Using electronic data acquisition and mobile reimbursements, we have gained insights void of the confounders and biases of alternative research designs. By employing two-way fixed effects estimation, we were able to identify within-respondent variation in sentiments in near-real time. With an endorsement experiment, we have uncovered prejudices against Muslims that are not driven by security concerns.

Despite some differences between Christian and Muslim respondents, the results generally align with the theoretical predictions. For the Christian sample, all hypotheses are corroborated by evidence. For the Muslim respondents, attitudes towards inter-religious marriage worsen after indiscriminate attacks. Furthermore, fear among Muslims appears to increase support for religiously segregated neighborhoods. However, we lack statistical power to ascertain whether this effect stems from fear that was caused by exposure to indiscriminate violence.

Despite our best efforts to generate causal insights into the dynamics of violence and group identification, a number of limitations of the study must be acknowledged. Chief among them is the focus on a single conflict episode in a single country. Future studies should examine to what extent the presented effects generalize. Nevertheless, we have advanced this strand of research: previous qualitative accounts have used the cognitive perspective to plausibly explain escalations in several conflicts after the fact. In this study, we have shown that underlying changes in sentiments can be predicted ahead of time while adhering to high ethical standards and a predetermined study period.

Further limitations are inherent to the two separate identification strategies. The direct questions enable causal mediation analysis, but proposals for separating the groups might result from security considerations rather than negative sentiments towards the out-group. We have addressed this problem in a subsequent survey experiment which established the

connection between exposure to indiscriminate violence and prejudice. However, this latter setup cannot be integrated with mediation analysis. Relying on both identification strategies simultaneously is the best attainable compromise.

An additional concern is that respondents could have reacted to more general fears due to the riots and protest surrounding the elections, rather than the specific actors. We have optimized the wording of the questions by specifically referring to “Kenyan state security forces in their fight against religious extremism” and “Islamist extremists”, but have to concede that conflation with violent actors more generally is possible. However, such measurement error in the independent variables should bias the statistical results towards zero, which would imply that we tend to underestimate the effects. A related point is the potential anticipation of violence before the fact by survey respondents. Again, by explicitly asking about the past three months, we have tried to correctly measure exposure rather than anticipation of conflict. More invasive questioning would have been needed to verify specific events in the past, possibly at the expense of ethical feasibility and statistical power.

Bearing those limitations in mind, we conclude that by targeting civilians in Kenya, Islamist extremists effectively attack the whole Christian majority. In doing so, they inflict fear and sow the seeds of division and prejudice against Muslims. In their pursuit of sympathizers of Al-Shabaab, Kenyan security forces also harm Muslim bystanders. Among those, acceptance of intermarriage with Christians is significantly reduced.

From a scholarly perspective, the presented evidence suggests that cognitive theories of endogenous conflict escalation convey generalizable and predictive mechanisms beyond illustrative examples. Testing associated claims is difficult, but possible based on a combination of electronic surveys and foreseeable tensions.

The observed differences between Christian and Muslims could be a function of insufficient statistical power: the Muslim sample is smaller and only a fraction of that sample has witnessed attacks. However, a growing body of literature suggests that conflict escalation

might not be as symmetrical as commonly assumed (e.g. Posen 1993). Instead, minority groups might balance security measures and the threat of escalation more carefully than majority groups (see Bilali et al. 2014; Schutte et al. 2020). Future research in this area seems warranted.

From a policy perspective, the presented results underline the dangers of large-scale political violence and especially violence against civilians. Beyond the humanitarian costs, such attacks alter societal fault lines and contribute to the rise of cohesive, hostile groups. Non-state actors can actively engineer divisions to enhance their chances of success. Beyond Kenya, indiscriminate attacks by Islamist insurgents have likely contributed to wider anti-Muslim sentiments in several countries. In order to break this vicious cycle, the incumbent responses to insecurity should be proportional, targeted, and rely on the presumption of innocence for civilians sharing cultural attributes with perpetrators.

References

- Hussein Abdikarim. Al-shabaab make surprising allegations on the august general election. *Tuko*, 2017. <https://www.tuko.co.ke/234758-al-shabaab-surprising-allegations-august-general-election.html#234758>, retrieved last on February 21, 2018.
- Gordon W. Allport. *The Nature of Prejudice*. Basic Books, 1954.
- Yehuda Amir. Contact hypothesis in ethnic relations. *Psychological bulletin*, 71(5):319–342, 1969.
- David M. Anderson and Jacob McKnight. Kenya at war: Al-shabaab and its enemies in eastern africa. *African Affairs*, 114(454):1–27, 2014.
- Matthias Basedau, Birte Pfeiffer, and Johannes Vüllers. Bad religion? religion, collective

- action, and the onset of armed conflict in developing countries. *Journal of Conflict Resolution*, 60(2):226–255, 2016.
- Michal Bauer, Christopher Blattman, Julie Chytilová, Joseph Henrich, Edward Miguel, and Tamar Mitts. Can war foster cooperation? *The Journal of Economic Perspectives*, 30(3): 249–274, 2016.
- BBC. Suspected al-shabab militants kill at least 28 in kenya bus attack. *The BBC*, 2014. <https://www.bbc.com/news/av/world-africa-30157535>, retrieved last on March 8, 2021.
- Bernd Beber, Philip Roessler, and Alexandra Scacco. Intergroup violence and political attitudes: Evidence from a dividing sudan. *The Journal of Politics*, 76(3):649–665, 2014.
- Rezarta Bilali, Ayşe Betül Çelik, and Ekin Ok. Psychological asymmetry in minority–majority relations at different stages of ethnic conflict. *International journal of inter-cultural relations*, 43:253–264, 2014.
- Graeme Blair, C. Christine Fair, Neil Malhotra, and Jacob N. Shapiro. Poverty and support for militant politics: Evidence from pakistan. *American Journal of Political Science*, 57(1):30–48, 2013.
- Anneli Botha. Political socialization and terrorist radicalization among individuals who joined al-shabaab in kenya. *Studies in Conflict & Terrorism*, 37(11):895–919, 2014.
- Michael Bratton and Mwangi S Kimenyi. Voting in kenya: putting ethnicity in perspective. *Journal of Eastern African Studies*, 2(2):272–289, 2008.
- Rogers Brubaker. Ethnicity without groups. *European journal of sociology*, 43(02):163–189, 2002.
- Rogers Brubaker et al. *Ethnicity without groups*. Harvard University Press, 2004.

- Will Bullock, Kosuke Imai, and Jacob N. Shapiro. Statistical analysis of endorsement experiments: Measuring support for militant groups in pakistan. *Political Analysis*, 19(4): 363–384, 2011.
- Dustin Carpenter, Tova Fuller, and Les Roberts. Wikileaks and iraq body count: the sum of parts may not add up to the whole—a comparison of two tallies of iraqi civilian deaths. *Prehospital and Disaster Medicine*, pages 1–7, 2013.
- Maria Chayinska, Anca Minescu, and Craig McGarty. Political solidarity through action (and inaction): How international relations changed intracultural perceptions in ukraine. *Group Processes & Intergroup Relations*, 20(3):396–408, 2017.
- Stella Chernó. Kenyan security forces grapple with changing face of terrorism. *Daily Nation*, 2018. <https://www.nation.co.ke/news/Kenyan-security-forces-grapple-with-changing-face-terrorism/1056-4381204-11dsh40z/index.html>, retrieved last on February 21, 2018.
- CIA. People and society, kenya. *World Fact Book*, 2018. <https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html>, retrieved last on February 21, 2018.
- Morton Deutsch, Peter T Coleman, and Eric C Marcus. *The handbook of conflict resolution: Theory and practice*. John Wiley & Sons, 2011.
- Briana Duggan, Faith Karimi, and Chandrika Narayan. 24 killed in post-election violence in kenya, rights group says. *CNN*, 2017. <https://edition.cnn.com/2017/08/12/africa/kenya-elections-protests/index.html>, retrieved last on February 21, 2018.
- Benn Eifert, Edward Miguel, and Daniel N. Posner. Political competition and ethnic identification in africa. *American Journal of Political Science*, 54(2):494–510, 2010. ISSN 00925853. doi: 10.1111/j.1540-5907.2010.00443.x.

- Muhammad Fraser-Rahim and Evanna Hu. Kenya steps up the war against al shabaab before its elections. *The Daily Beast*, 2017. <https://www.thedailybeast.com/kenya-steps-up-the-war-against-al-shabaab-before-its-elections>, retrieved last on February 21, 2018.
- Raphael Mwiti Gikunda, Gilbert Odilla Abura, and Samuel Gitonga Njeru. Socio-economic effects of mpesa adoption on the livelihoods of people in bureti sub county, kenya. *International Journal of Academic Research in Business and Social Sciences*, 4(12):348, 2014.
- Donald P Green and Rachel L Seher. What role does prejudice play in ethnic conflict? *Annual Review of Political Science*, 6(1):509–531, 2003.
- Linda Green. Living in a state of fear. In Carolyn Nordstrom and Antonius CGM Robben, editors, *Fieldwork under fire: Contemporary studies of violence and survival*, pages 105–127. 1995.
- Roxana Gutiérrez-Romero. An inquiry into the use of illegal electoral practices and effects of political violence and vote-buying. *Journal of Conflict Resolution*, 58(8):1500–1527, 2014.
- Francisco Gutiérrez-Sanín and Elisabeth Jean Wood. What should we mean by “pattern of political violence”? repertoire, targeting, frequency, and technique. *Perspectives on Politics*, 15(1):20, 2017.
- Kentaro Hirose, Kosuke Imai, and Jason Lyall. Can civilian attitudes predict insurgent violence? ideology and insurgent tactical choice in civil war. *Journal of peace research*, 54(1):47–63, 2017.
- Bruce Hoffman. *Inside terrorism*. Columbia University Press, 2006.
- Human Rights Watch. Kenya: Rights lawyer, client, driver missing: Enforced disappearance feared. *Human Rights Watch*, 2016. <https://www.hrw.org/news/2016/06/30/kenya-rights-lawyer-client-driver-missing>, retrieved last on February 21, 2018.

- Murtaza Hussain. Islamic state's goal: "eliminating the grayzone" of coexistence between muslims and the west. *The Intercept*, November 17 2015, 6:39 p.m., 2015. <https://theintercept.com/2015/11/17/islamic-states-goal-eliminating-the-grayzone-of-coexistence-between-muslims-and-the-west/>, retrieved last May 22, 2017.
- Michael Ignatieff. *Blood and belonging: Journeys into the new nationalism*. Macmillan, 1994.
- John Ishiyama, Amalia Pulido Gomez, and Brandon Stewart. Does conflict lead to ethnic particularism? electoral violence and ethnicity in kenya 2005–2008. *Nationalism and Ethnic Politics*, 22(3):300–321, 2016.
- Wisdom Oghosa Iyekekpolo. Political elites and the rise of the boko haram insurgency in nigeria. *Terrorism and Political Violence*, 0(0):1–19, 2018.
- Judie Kaberia. President kenyatta launches new strategy to fight extremism, terror. *Capital News*, 2016. <https://www.capitalfm.co.ke/news/2016/09/president-kenyatta-launches-new-strategy-fight-extremism-terror/>, retrieved last on February 21, 2018.
- Matthijs Kalmijn. Intermarriage and homogamy: Causes, patterns, trends. *Annual review of sociology*, 24(1):395–421, 1998.
- Stathis Kalyvas. *The Logic of Violence in Civil Wars*. Cambridge University Press, 2006.
- Stathis Kalyvas and Matthew A. Kocher. Ethnic cleavages and irregular war: Iraq and vietnam. *Politics and Society*, 35(2):183–223, 2007.
- Mwangi S. Kimenyi and Njuguna S. Ndung'u. Why has kenya not experienced a full-blown civil war? *Understanding civil war: Evidence and analysis*, 1:123–156, 2005.

- Jeremy Lind, Patrick Mutahi, and Marjoke Oosterom. ‘killing a mosquito with a hammer’: Al-shabaab violence and state security responses in kenya. *Peacebuilding*, 5(2):118–135, 2017.
- Jason Lyall and Isaiah Wilson. Rage against the machines: Explaining outcomes in counterinsurgency wars. *International Organization*, 63(1):67–106, 2009.
- Jason Lyall, Graeme Blair, and Kosuke Imai. Explaining support for combatants during wartime: A survey experiment in afghanistan. *American Political Science Review*, 107(04):679–705, 11 2013.
- John F McCauley. The political mobilization of ethnic and religious identities in africa. *American Political Science Review*, 108(4):801–816, 2014.
- Omar Shahabudin McDoom. The psychology of threat in intergroup conflict: Emotions, rationality, and opportunity in the rwandan genocide. *International Security*, 37(2):119–155, 2012.
- Hannah McNeish. An eyewitness recalls the horror of al shabaab’s attack on kenya’s garissa university. *PRI*, 2018. <https://www.pri.org/stories/eyewitness-recalls-horror-al-shabaabs-attack-kenyas-garissa-university>, retrieved last on February 21, 2018.
- Claire Metelits. *Inside insurgency*. New York University Press, 2010.
- Vera Mironova and Sam Whitt. Social norms after conflict exposure and victimization by violence: Experimental evidence from kosovo. *British Journal of Political Science*, 48(3):749–765, 2018.
- Gautam Nair and Nicholas Sambanis. Violence exposure and ethnic identification: Evidence from kashmir. *International Organization*, 73(2):329–363, 2019.

- Hassan Ndzovu. *Muslims in Kenyan politics: political involvement, marginalization, and minority status*. Northwestern University Press, 2014.
- Steven L Neuberg and Mark Schaller. An evolutionary threat-management approach to prejudices. *Current Opinion in Psychology*, 7:1–5, 2016.
- Wendy Pearlman. Narratives of fear in syria. *Perspectives on Politics*, 14(1):21–37, 2016.
- William E Piper, Myriam Marrache, Renee Lacroix, Astrid M Richardsen, and Barry D Jones. Cohesion as a basic bond in groups. *Human Relations*, 36(2):93–108, 1983.
- Barry R Posen. The security dilemma and ethnic conflict. *Survival*, 35(1):27–47, 1993.
- Clionadh Raleigh, Andrew M. Linke, Håvard Hegre, and Jaokim Karleson. Introducing acled: An armed conflict location and event dataset. *Journal of Peace Research*, 47: 651–660, 2010.
- Anselm Rink and Kunaal Sharma. The determinants of religious radicalization: Evidence from kenya. *Journal of Conflict Resolution*, 62(6):1229–1261, 2018.
- Dan Rodriguez-Garcia. Inter-marriage and integration revisited: International experiences and cross-disciplinary approaches. *The ANNALS of the American Academy of Political and Social Science*, 662(1):8–36, 2015.
- Nir Rosen. *Aftermath: Following the bloodshed of America’s wars in the Muslim world*. Nation Books, 2010.
- Bryn Rosenfeld, Kosuke Imai, and Jacob N. Shapiro. An empirical validation study of popular survey methodologies for sensitive questions. *American Journal of Political Science*, 60(3):783–802, 2016.
- Mark Schaller and Steven L Neuberg. Danger, disease, and the nature of prejudice (s). In *Advances in experimental social psychology*, volume 46, pages 1–54. 2012.

- Sebastian Schutte, Constantin Ruhe, and Niranjan Sahoo. How fear of violence drives intergroup conflict: Evidence from a panel survey in india. 2020. URL <https://osf.io/preprints/socarxiv/42w6h/>.
- Davood Tofighi and David P. MacKinnon. Rmediation: An r package for mediation analysis confidence intervals. *Behavior Research Methods*, 43(3):692–700, 2011.
- Sunguta West. The threat al-shabaab poses to kenya’s election. *The Jamestown Foundation*, 2017. <https://jamestown.org/program/threat-Al-Shabaab-poses-kenyas-election/>, retrieved last on February 21, 2018.
- Nathalie E Williams, Dirgha Ghimire, and Karen A Snedker. Fear of violence during armed conflict: Social roles and responsibilities as determinants of fear. *Social science research*, 71:145–159, 2018.
- World Bank. Information and communications for development: maximizing mobile. *Washington DC: International Bank for Reconstruction and Development/The World Bank*, 2012.
- Lauren E Young. The psychology of state repression: Fear and dissent decisions in zimbabwe. *American Political Science Review*, 113(1):140–155, 2019.