Community Violence and Support for Violent Extremism: Evidence From the Sahel

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This article examines the effects of exposure to communal violence on support for violent religious extremism. We argue that in communities with high levels of reported violence, individuals lose political and social trust, develop exclusionary attitudes towards outgroups, and find appeal in nonconventional, black-or-white religious teachings, all of which can promote support for extremist violence. Using survey data from over 17,000 respondents in 84 communes surveyed between 2013 and 2017 in Burkina Faso, Niger, and Chad, we find strong support for these predictions. More violent communities express substantially greater support for violent extremism, with an increase in exclusionary outgroup biases and a turn to fundamentalist religious views being the primary mechanisms explaining—and amplifying—the effect. The findings run counter to arguments suggesting that exposure to violence leads to "war weariness" or generates community resilience to extremism via prosocial behaviors.

KEY WORDS: community violence, extremism, Sahel, Africa, religious extremism

Countering public support for religious-based violent extremism in the developing world is now a pressing global concern. Yet until the sources of support for violent extremism, and the processes by which individuals may come to accept and justify it, are better understood, efforts to stem these developments will undoubtedly founder. What determines support for extremist groups and for the use of terrorism or other forms of violence in the perceived defense of one's religion? The topic has generated much scholarly attention at least since the 9/11 terrorist attacks in the United States in 2001, but important gaps remain in our knowledge. Most existing work highlights individual-level factors—such as poverty, psychological vulnerability, and political and economic dissatisfaction—that potentially explain support for violent extremism (e.g., Atran, 2003; Borum, 2014; Cragin, 2014; Enders, Hoover, & Sandler, 2016; Fair & Shepherd, 2006; Hadjar, Schiefer, Boehnke, Frindte, &

Geschke, 2019; Mousseau, 2011; Shafiq & Sinno, 2010; Tessler & Robbins, 2007). Less attention has been given to the possibility that support for extremist violence may also be driven by characteristics of the village, neighborhood, or area in which an individual resides or by the interaction between individual and contextual-level factors. Given the central role of contextual factors in understanding political attitudes and behavior in general, the relative paucity of research on context and support for violent extremism is striking.

In this study, we examine how one contextual factor—the extent of community violence, as perceived by local residents—influences the likelihood that individuals in those communities express support for violent religious extremism. Drawing on the vast literature on the social, psychological, and political effects of violence and civil conflict, we argue that the level of violence experienced in one's community has a positive and substantively meaningful impact on the likelihood that the individual will support violent religious extremism. In violent communities, political and social trust suffers, compromise withers, and deviant behaviors are normalized, making black-or-white beliefs that quell fear, justify violence, and provide a new vision for social order more appealing. Religious radicalism addresses that desire, allowing support for extremism to flourish.

To test these claims, we rely on survey data drawn from over 18,000 individuals in 84 communes across the Sahel region of Africa, in Burkina Faso, Chad, and Niger, between 2013 and 2017. The Sahel, a predominantly Muslim stretch where North and sub-Saharan Africa meet, constitutes one of the flashpoints for recent terrorist attacks and for the mobilization of potential terrorist group members. We test the relationship between community violence and support for violent extremism in multilevel longitudinal regression models that include a variety of commune and individual-level factors as controls. While the study relies on levels of violence as reported by community members rather than objective measures of crime or (relatively rare) conflict or terrorist attacks, this affords us the opportunity to explore how the general disruption that community violence of any type engenders may act as an underexplored cause of support for violent religious extremism.

The results strongly suggest that individuals living in communities with higher levels of reported violence are more likely to express support for violent religious extremism. We find evidence that increasingly exclusionary outgroup attitudes and preferences for the application of Shari'a law function as the primary mechanisms linking reported communal violence to violent extremism, with these factors also amplifying the effect of community violence in models allowing for treatment-mediator moderation. These findings provide evidence of the important role that community violence plays in the development of extremist attitudes, and they point the way towards testing the interplay of individual and contextual factors more comprehensively in future research.

Linking Exposure to Violence and Support for Violent Extremism

How might the scope of violence in a community affect support for violent religious extremism? Some recent work would suggest a *negative* impact of community-level violence on extremist support. For example, individuals residing in Pakistani communities experiencing terrorist attacks and spillover violence from Afghanistan have been found to reject militant extremist groups, as they disproportionately bear the effects of externalities due to militant violence (Blair, Fair, Malhotra, & Shapiro, 2013). Others have found a more general "war weariness" effect, such that exposure to violence stimulates greater support for peace, for example, by increasing support for territorial concessions and decreasing support for retribution in the Israeli-Palestinian conflict (Gould & Klor, 2010; Zeitzoff, 2014). A third line of work suggests that those who are victimized by violence or experience violence in their communities may undergo a process of "posttraumatic growth" that promotes prosocial behaviors such as increased political participation (Bellows & Miguel, 2009; Blattman, 2009).

Arguments related to war weariness or posttraumatic growth may plausibly explain reactions to entrenched civil conflicts like those in Afghanistan, Pakistan, and Sierra Leone or reactions to

indiscriminate or sustained terrorist violence. Community violence, however, can take many forms: violent crime against persons or property, land disputes, systematic sexual violence, or other forms of violence in addition to conventional intergroup conflict or terrorist attacks. In these contexts—where the current study is focused—it is by no means clear that violence will dampen support for extremism. High levels of violence may reflect more general levels of social disorganization, such that communities are "unable to regulate activity among individuals…[and] unable to work together to solve problems…[which] results in increased opportunities for anti-social behaviors, including engaging in politically motivated violence" (Doering & Davies, 2019, pp. 2–3). Consistent with this view, a wealth of interdisciplinary research documents the impacts that exposure to community violence may have on a series of mediating attitudes and psychological orientations that could *stimulate* individual-level radicalization and heighten individual-level support for violent extremism.

Three primary mechanisms underpin the potentially positive relationship between community-level violence and individual support for violent religious extremism. First, violence may undermine both social and political trust, providing fertile ground for alternative, extremist ideologies to flourish (Becchetti, Conzo, & Romeo, 2014; Cassar, Grosjean, & Whitt, 2013; Grosjean, 2014; Rohner, Thoenig, & Zilibotti, 2013). For example, evidence suggests that in violent environments where institutions are weak or unreliable, predator-prey attitudes and a reliance on individual honor over communal trust become more commonplace (Nowak, Gelfand, Borkowski, Cohen, & Hernandez, 2016). In line with the "social disorganization" logic described above, violence may also hinder the provision of important social services, and this breakdown of governmental effectiveness may then feed into the withdrawal of institutional trust and legitimacy among the populace (Kaplan, 2008).

The violence-induced loss of trust may, in turn, foster increased support for violent extremism. Individuals who lose faith in traditional institutions (either formal or informal) may seek solace in nontraditional, insalubrious, or radical alternatives, believing that, since traditional institutions have broken down, only groups projecting strength or challenging convention will be poised to offer a path forward (Barber, 2001). This logic has been used to explain the pull of neo-Pentecostalism in the unregulated prisons of Brazil (Johnson, 2017) and the expansion of radical Islamic groups in post-2004 tsunami Aceh, Indonesia (Miller, 2010). Literature in criminology similarly suggests that, when police are unable to establish trust in local security, preferences for nonnormative violence increase (Jackson, Huq, Bradford, & Tyler, 2013).

Second, exposure to violence may increase susceptibility to the appeals of extremist violence by exacerbating exclusionary attitudes and outgroup biases. Work in social psychology frequently attributes exclusionary attitudes following violence to the perceived threat model, suggesting that hostility toward outgroups serves as a form of protection (Maddux, Galinsky, Cuddy, & Polifroni, 2008; Morrison & Ybarra, 2008; Quillian, 1995). We similarly argue, consistent with Jasko et al. (2020), that blaming others for violence can provide a sense of collective grievance as well as significance for community members who share a common identity. Bauer, Cassar, Chytilova, and Henrich (2014) note that conflict can stimulate "egalitarian" attitudes of support for one's own group but *not* for outgroups (see also Littman, 2018). Beber, Roessler, and Scacco (2014) show that reported exposure to violence in a conflict-laden context (Sudan) hardens negative attitudes between groups, making ingroup members less willing to live together with the outgroup. Grosjean (2014, p. 448) describes this pattern as evidence that violent contexts generate "bonding," as opposed to "bridging," social capital, a process which decreases overall trust while intensifying group divisions.

This "hardening of hearts" (Hirsch-Hoefler, Canetti, Rapaport, & Hobfoll, 2014) from community violence may then lead individuals to greater support for extremist views that endorse violence as an acceptable means for achieving political ends. Cikara, Botvinick, and Fiske (2011) find that once individuals develop "us versus them" attitudes, their proclivity toward violent behaviors increases; neurologically, moral prohibitions against harm to others dissipates, so support for or

participation in violent extremist groups may follow. Individuals residing in communities with more violence may thus have diminished interest in cooperation with outgroup members and may come to see extremist groups and their methods as particularly appealing (Jenne, Saideman, & Lowe, 2007).

A third potential mechanism linking reported exposure to violence to support for violent extremism is the appeal of fundamentalist religious teachings after exposure to community violence, for example, in calls for aggressive forms of Shari'a law.[1] Such applications of religious law serve two purposes in those contexts: They make sense of or even justify the violent, deviant behaviors that community members have witnessed and perhaps taken part in, and they offer an alternative, purportedly more rigid, social order (Riesebrodt, 2000). In violent contexts in particular, fundamentalist appeals may serve as a nonconventional, black-or-white answer to social breakdown.

The acceptance of strict religious views in the form of Shari'a law—as opposed to Islamic religious devotion in general (Hadjar et al., 2019)—may then lead to support for violent extremism. Shari'a in the Sahel region is multidimensional in conceptualization, comprising both service and security provisions and also *hudud* punishments such as stoning, whipping, and the cutting off of hands for wrongdoing (Dunbar, 1991). In contexts with high levels of community violence, it is reasonable to expect that the punishment-oriented view of Shari'a will dominate the service-oriented view. According to Fair, Littman, and Nugent (2018), when individuals adopt a punishment-oriented conceptualization of Shari'a, they are significantly more likely to support groups that exhibit or endorse extremist violence. Terrorist groups operating in the region, such as Boko Haram, Al Qaeda in the Islamic Maghreb (AQIM), and Islamic State in the Greater Sahara (ISGS), openly reject conventional forms of social order and politics (Agbiboa, 2013), instead appealing to more radical and direct forms of contestation, and thus offer to those caught in violence a religious justification for the behaviors in which they are subsumed. We stress that support for strict or punishment-oriented applications of Shari'a may be orthogonal to actual religious devotion.

These arguments suggest that, in communities characterized by high levels of violence, the resulting deterioration in social and political trust, increased exclusionary attitudes toward outgroup members, and a rise in fundamentalist religious views will leave residents susceptible to the appeal of violent religious extremism. We thus hypothesize that a positive relationship exists between reported community violence and support for violent extremism through each of these intervening mechanisms.

Data

Data for this analysis were collected in connection with a United States Agency for International Development evaluation project undertaken between 2013 and 2017 in northern Burkina Faso, southern Niger, and the middle portion of Chad, placing the study squarely within the Sahel region of Africa (see Figure 1). This zone constitutes a particularly suitable research setting for a number of reasons. First, Burkina Faso, Niger, and Chad stand out as three of the poorest countries in the world, each ranking among the bottom eight of the 189 countries listed in the United Nation's 2019 Human Development Index. The presence of police and security forces is thus relatively low, which creates opportunity for variation across communities in both levels of violence and extremist group activities. Religiously, the study area is heavily Muslim; given the Islamist frame of violent extremist groups in the region, the religious make-up of the population in this area offers a potential audience for the type of appeals that those groups may make. The area also constitutes what some consider the new global epicenter of Islamist terrorism: Since 2015, attacks in the Sahel have increased at a faster rate than any other part of the world (Africa Center for Strategic Studies, 2018). Boko Haram has moved in from Nigeria, while AQIM and affiliated groups, ISGS and others have descended into the region following the collapse of security in Libya and Mali (Larémont, 2011). In this context,

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[1]We note that, in the context of Islam, "fundamentalism" is a term imposed by outsiders and not used by Muslims themselves. We adopt the terminology to refer to more strident or rigid interpretations of Islamic law.
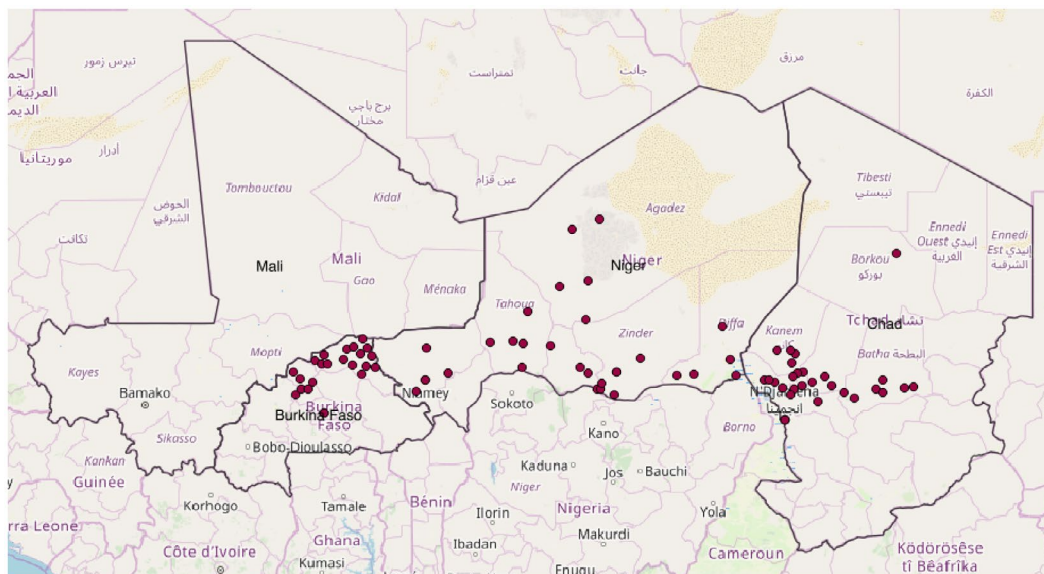
Figure 1. The data collection area.

Table 1. Summary of Data Collection

Country	Wave	Time Period	Communes	No. of Respondents
Chad	1	March–Oct. 2013	30	2855
Chad	2	March–April 2016	29	724
Chad	3	April 2017	30	2846
Niger	1	March–November 2013	30	2710
Niger	2	August–November 2015	31	1030
Niger	3	April 2017	31	2856
Burkina Faso	1	September–October 2013	23	2155
Burkina Faso	2	August–November 2015	23	822
Burkina Faso	3	March–April 2017	23	2185
Total				18,183

communities are broadly familiar with violent Islamist groups and offer them varying degrees of support. Yet the region does not have a long tradition of politicized religion that might complicate efforts to disentangle Islamist support from community violence (see Sanneh, 2015).

Data collection took place across 84 total primary sampling units (PSUs) in the three countries at three separate time points: The first wave of the data was collected between March and November 2013, the second between August 2015 and April 2016, and the third between March and April 2017. In total, the results we report include input from 18,183 respondents. Table 1 summarizes the data-collection timeline, the number of sampled communities, and the number of interviews conducted by country and wave.

Respondents were selected using a multistage, clustered random sampling procedure with stratification by gender. Each first-level subnational administrative zone within the study area—of which there are 19 across the three countries—was divided into a maximum of eight subareas, depending on size. This process generated 84 subareas. Those subareas were then divided into potential PSUs,

which contained an average of approximately 200 households. They correspond to communes—the lowest geographic subdivision in rural areas—or neighborhood arrondissements within urban areas. Next, one PSU, or commune, was randomly selected from each subarea. Figure 1 shows the location of each of the 84 selected communes. To select individual respondents, enumerators operating within each PSU identified randomly selected households using a fixed-interval procedure. They then randomly drew one respondent between the ages of 15 and 73 from within each of the selected households. Overall, between 71 and 114 respondents were interviewed in each commune during the first and third waves of data collection, and (due to budgetary constraints from the funding agency) between 21 and 56 in each commune during the second.

The dependent variable is *Support for Violent Extremism*. In keeping with previous survey-based measures of violent extremism (Fair & Shepherd, 2006; Shafiq & Sinno, 2010) and with the religious nature of extremism in the study environment, respondents were asked the following:

1. Do you agree or disagree with the following statement: Violence in the name of Islam can be justified?
2. When do you think that violence is an effective method to solve problems: often, sometimes, or never?
3. Do you personally feel that using arms and violence against civilians in defense of your religion can be often justified, sometimes justified, or never justified?

All three items are coded on a 3-point scale, with higher values indicating greater support for violent extremism. Our composite measure represents respondents' average score. There is substantial variation on the dependent variable, with an average of 1.28 and a standard deviation of .46. Approximately 20% to 30% of the total sample believes that violence against civilians is often or sometimes justified to defend one's religion, is often or sometimes an effective method to solve problems, and that violence in the name of Islam can be justified. Communes differ on average on the dependent variable as well, with commune-year means ranging from 1.01 (Chadra, Chad, wave 3; Magaria, Niger, wave 2) to over 1.89 (Melea, Chad, wave 1; Dan Issa, Niger, waves 2 and 3) on the 3-point composite index, with a commune-year standard deviation of .20. Figure 2 presents box and whisker plots of the commune-level means on the dependent variable; it shows that in wave 1, the average value on extremism is above the midpoint on the 3-point scale in nearly 25% of all communes.
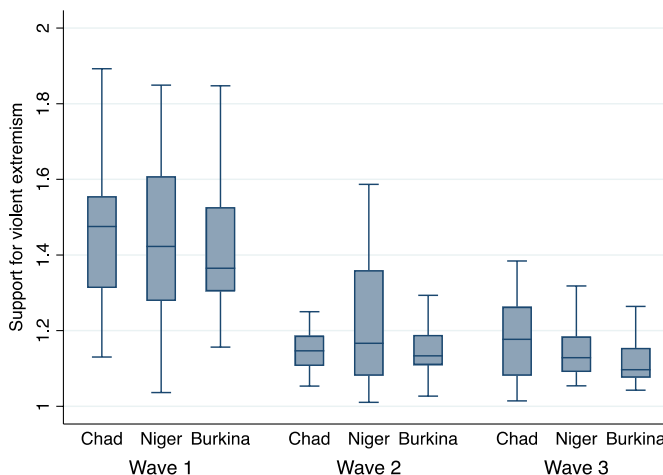

Figure 2. Box and whisker plot of commune-level support for extremism.

This rate declines in waves 2 and 3, although there is still substantial variation across countries, and as noted, several communes well above the midpoint on the scale.

The key independent variable is *Community Violence*, of which we take a broad and inclusive view. In keeping with the well-established view in the criminology literature that violence tends to nest individuals within community-level processes (see Sherman, Gartin, & Buerger, 1989), our measure is constructed by aggregating, for each commune, all individuals' responses to survey questions on the extent to which the community is "affected by violence." In wave 1, we use a survey item asking respondents about the "extent to which they feel that their community or neighborhood is affected by violence." The variable is coded 0 for "never" and 1 for "sometimes" or "often." In wave 2, we use the average of three survey items, each asking respondents whether their community experienced a particular type of violence within the past year: conflict over land; a violent protest or strike; or some other type of conflict. These variables are coded 0 for "no" and 1 for "yes." In wave 3, we use the average of five survey items, each asking respondents whether their community experienced a particular type of violence within the past year: conflict over land; a violent protest or strike; ethnic or religious violence; regular armed robbery; or some other type of conflict. These variables are coded 0 for "no" and 1 for "yes." We use the average of all respondents' answers in a commune in a given year as a measure of the reported climate of violence within that community.

While objective measures of community violence such as crime statistics, or other official tallies of violent disputes, protests, or other kinds of violence, would provide advantages over our aggregated measure from individual reports, the full scope of appropriate information is not possible to obtain from official or unofficial sources in the three countries. There are, to be sure, data bases of terrorist violence and civil conflict, but these forms of violence are only one (and a relatively rare) facet of the multidimensional concept we aim to measure. Further, the geographic level of disaggregation in, for example, the ACLED or SCAD data bases, do not match the administrative commune level in the three countries under consideration, especially in the urban communes where much of the violence in those data bases is recorded.[2]

The strategy of using individual responses to gauge the extent of community violence has been employed previously in political science, for example, in Beber et al.'s (2014) study asking Sudanese respondents whether "there was any fighting in their neighborhood" as a measure of exposure to the 2005 riots in certain areas of Khartoum. The same strategy is employed in other fields. Subramanian, Kim, and Kawachi (2002) measure community levels of social trust by aggregating individual responses to survey questions on interpersonal trust. It is also common practice in fields such as education to measure "climate" variables at some higher level of aggregation by averaging a set of lower level responses on question(s) related to perceptions about the higher level aggregation (see Brand, Felner, Shim, Seitsinger, & Dumas, 2003; Marsh et al., 2012). Aside from its theoretical appeal, we argue that the strategy is successful empirically in our case as well, given that the aggregated measure from self-reports reflects widespread agreement among individuals within communes about the extent of violence in their community. The reliability of the commune-year level means (following the procedure in O'Brien, 1990) is estimated at .94, indicating a very high degree of "true score" variance of the between commune-year means, relative to the within commune-year variation that is due to individual assessments.[3]

The resulting measure of reported community violence ranges from 0 to 1, with an overall mean of .209. The average level of reported violence is somewhat higher in communes in Chad (0.257)

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[2]For example, the ACLED data set records the commune as the lowest-level administrative location in rural areas, but only the city in urban locations.

[3]One final measurement issue regarding the measure we use relates to whether individuals' assessments of violence in the community may be *post hoc* rationalizations of their preexisting support for violent extremism. We address this possibility in the robustness checks section that follows the main results.

than it is in Burkina and Niger (0.187 and 0.181, respectively). There is also considerable variation in reported community violence over time, with the average level of community violence being higher in wave 1 (0.316) than it is in waves 2 and 3 (0.168 and 0.118, respectively). Across the 84 communes, there are eight commune-wave combinations with a score of 0, while 13 commune-wave combinations have scores greater than 0.5 (10 communes in Chad; 2 in Niger; 1 in Burkina Faso); the maximum observed value is .86 (Koundjourou in Chad, wave 1).

We also control for demographic variables that have been associated with support for violent extremism. Research has found males, youth, and unemployed individuals to be more likely to exhibit extremist attitudes (Fair & Shepherd, 2006; Sageman, 2008); we therefore include variables for gender, age, and employment status. Studies have also found effects of education on extremist attitudes (Sageman, 2008); we include a 10-point education variable ranging from no formal education to the completion of a post-graduate degree. Studies also find mixed effects of wealth on extremist attitudes (Blair et al., 2013; Mousseau, 2011); we include an additive index denoting how many out of 12 possible household items such as a refrigerator or television that respondents have in their household. Finally, belonging to secondary associations may decrease violent extremism (Cragin, 2014; Sageman, 2008); we thus include an additive measure of respondents' reported membership in religious, youth, and professional groups.

We also include variables to test the specific mechanisms through which we hypothesize that exposure to violence might contribute to violent extremism. We gauge social trust by asking respondents whether they agree or disagree with the statement that "most people are willing to help if asked." The resulting variable is coded on a 3-point scale, with higher values representing greater trust. We measure political trust with the average of two questions asking respondents whether they agree or disagree with the statement "I trust local authorities"/"I trust the central government."

We measure a second potential mechanism, exclusionary outgroup biases, via two questions related to ethnic social and political tolerance: how respondents feel about (1) their (future) children marrying someone from a different ethnic group and (2) the extent to which individuals feel that "it is normal to want to elect someone from your ethnic community." Both variables are coded on a 3-point scale, with higher values indicating greater exclusion; our composite measure represents respondents' average score across the two items. Finally, we measure a third mechanism, fundamentalist religiosity, by asking respondents (1) whether they agree with the statement that their country should be governed by Shari'a law; and (2) how strictly they would like to see Shari'a law imposed if it were to be implemented. Both variables are coded on a 3-point scale, with higher values indicating greater support for Shari'a law and its strict enforcement, and we averaged the two to create a composite measure. A more detailed overview of the survey items is provided in the Table S1 in the online supporting information. Table S2 presents the descriptive statistics for all variables and includes the intraclass correlation (ICC), which measures the proportion of the total variation that is comprised of commune-year-level variation.

Estimation

The data consist of survey responses collected from different individuals in 84 communes across the three countries at 3 points in time. This equates to a three-level hierarchical data structure, with individuals (at level 1) nested within commune-years (at level 2) nested within communes (at level 3), with random effects included in the model at each level of the hierarchy in order to account for the clustering of observations at that level (Fairbrother, 2014; Schmidt-Catran & Fairbrother, 2016). We also include dummy variables for wave (year) in order to account for possible wave-specific effects that could influence all respondents at that time, regardless of commune, and we include country dummy variables in order to account for possible country-specific effects that could influence all respondents in that country, regardless of commune or time.[4]

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[4]In principle, country and year could represent an additional level of the data hierarchy with crossed random effects, but the very small number of both countries and years in the data argues for the simple dummy-variable approach.

The multilevel and longitudinal structure of the data—identical in form to multiple occasion cross-national survey data such as the World Values or Afrobarometer surveys—has several distinct benefits for estimating effects of interest. For one, it is possible to estimate the potentially differential effects of variables at different levels of the data hierarchy—for example, high income may predict increased support for extremism at level 1 (among individuals within communes) but decreased support for extremism at levels 2 or 3 (between communes or commune-years). More important, though, is that the data, while not from the same individuals at level 1 over time and hence not a classic panel study, do contain measures from the same *communes* over time at levels 2 and 3 of the hierarchy. That is, the data represent a longitudinal panel of 84 communes at three different points in time, with commune-level variables constructed from the aggregated responses of the different level 1 individuals interviewed within each commune at each point in time. This allows for stronger causal inferences than in the typical cross-sectional case, in that the effect of wave-to-wave *changes* in a commune's average level of reported violence, our primary independent variable, can be exploited to predict *changes* in the commune's average levels of support for violent extremism across the three waves. These effects will represent the effects of over-time aggregate changes in reported violence, separated from the potentially confounding "between" (-commune) effects on the average level of the dependent variable from all stable unit-level factors, even those not measured in the data (Fairbrother, 2014; Schmidt-Catran & Fairbrother, 2016). As such, the design shares many of the same benefits for causal inference as other panel studies. We note, however, that longitudinal designs also have many of the same limitations regarding causal inference that exist in other observational studies, along with, in this case, the identifying assumption of no time-varying unobserved confounding at the commune level.

A baseline multilevel model predicting individual support for violent extremism takes the following form:

$$y_{itj} = \beta_0 + \beta_1 x_{ijt} + \beta_2 v_{jt} + u_j + u_{jt} + \varepsilon_{ijt}, \tag{1}$$

where subscript i indexes individuals, j indexes communes, and t indexes time. The model specifies that an individual i in commune j at time $t's$ support for violent extremism is a function of a grand mean; a set of individual-level factors that vary across individuals, communes, and time (x_{ijt}); the commune level of reported violence (v_{jt}) that varies across time and communes but that is constant for individuals within a commune; random effects (intercepts) for communes (u_j) and commune-years (u_{jt}); and an idiosyncratic individual-level error term. The baseline model also includes dummy-variable indicators for country (Niger and Burkina Faso, with Chad as the baseline category), and dummy indicators for interviews conducted in waves 2 and 3 in order to capture overall trends in the dependent variable across all countries. With standard assumptions about the level 1 (ε_{ij}) and levels 2 and 3 (u_j) and (u_{jt}) error terms—that is, that they are homoskedastic, normally distributed, and uncorrelated with each other and with the x and v independent variables—the model can be estimated via maximum-likelihood methods implemented in standard statistical-software packages (here, the *mixed* routine in Stata 16.0). Standard errors are clustered by commune-year to allow for the nonindependence of level 1 observations within level 2 units.

Our key independent variable is reported community violence, a commune-year (level 2 v_{jt}) factor. We attempt to isolate the causal effect of commune-level violence on support for violent extremism with several extensions of the baseline model. First, we include a set of contextual variables, that is, the commune-level average of the x_{ijt} demographic factors, along with the (mean-deviated) individual value for each of the x_{ijt}:

$$y_{itj} = \beta_0 + \beta_1 (x_{ijt} - \bar{x}_{jt}) + \beta_3 \bar{x}_{jt} + \beta_2 v_{jt} + u_j + u_{jt} + \varepsilon_{ijt}. \tag{2}$$

Model (2) separates the effects of the x_{ijt} into two orthogonal components: the "within" commune effect β_1, or the impact on extremism of individual deviations from the commune-year average on x_{ijt}, and the "between" commune effect β_3, which characterizes differences in the commune-year averages on average levels of extremism across communes (Fairbrother, 2014). The $\bar{x}_{jt}$ thus serve as additional commune-year contextual controls—that is, commune-year levels of unemployment, education, wealth, and the like—in the estimation of the effect of the community violence variable v_{jt} (as in Doering & Davies, 2019; Vijaya, Wilent, Cathcart, & Fiorelli, 2018).

Similarly, we exploit the longitudinal nature of the three-level data to isolate the effect of *changes* in the reported community-violence variable over time from the effect of the average level of reported violence on average support for violent extremism across all points in time. Such a model includes both the commune-level average $\bar{v}_j$ and the commune-year deviation from the overall average $(v_{jt} - \bar{v}_j)$ and, as noted earlier, serves to isolate the "within commune" over-time effect as distinguished from the enduring and potentially confounding effects of stable "between commune" differences on the dependent variable (Fairbrother, 2014):

$$y_{itj} = \beta_0 + \beta_1(x_{ijt} - \bar{x}_{jt}) + \beta_3\bar{x}_{jt} + \beta_2(v_{jt} - \bar{v}_j) + \beta_4\bar{v}_j + u_j + u_{jt} + \varepsilon_{ijt}. \tag{3}$$

The β_2 effect in Model 3, similar to a "within" effect in standard longitudinal panel models, may be interpreted as the impact of *changes* in reported community violence on support for violent extremism, controlling for both observed and unobserved stable commune-level factors that may be related to both the time-averaged overall levels of community violence $(\bar{v}_j)$ and time-averaged overall commune levels of extremist support.

Results

The Effects of Reported Community Violence

The maximum-likelihood estimates from the three models are shown in Table 2. The results from the baseline Model (1) show strong support for our primary hypotheses regarding the effect of reported community violence on support for violent extremism. Communities with higher average levels of reported violence show significantly higher values on the extremism index compared to communities with lower average levels, controlling for a host of theoretically relevant individual-level factors linked to extremism, and controlling for country and time effects. Substantively, the .37 coefficient indicates that individuals residing in communities reporting the full range of violence tapped by our indicator show a full .80 standard deviation increase in support for violent extremism compared to individuals residing in communes with no reported community violence whatsoever. Aggregating this figure to the commune-year level, where the standard deviation of support for extremism is .20, shows an even stronger substantive impact, as extremist support nearly doubles as average reported community violence goes from 0 to 1. Among the demographic variables, only age and group memberships appear significant, with younger and more integrated individuals showing greater support for violent extremism. That more integrated individuals are more likely to support violent extremism is somewhat surprising; given that our measure taps membership in local groups, gang membership is one plausible explanation. Individuals in Niger register higher levels of extremist support than Chadians (the baseline country), and there is a general drop-in support in waves 2 and 3 compared with wave 1.

The effect of reported community violence remains at approximately the same magnitude and level of statistical significance in Model (2), which separates the demographic factors into "within" and "between" commune-year effects. In this model, it can be seen that education and age both exert significant "between" effects, so that communes with lower levels of average education and age

Table 2. Models Linking Community Violence to Support for Violent Extremism

Variable Names		Model 1	Model 2	Model 3
Community violence		.366*** (.096)	.400*** (.093)	Between .494*** (.125)
				Within .354*** (.101)
Education	Between	.001 (.002)	−.058** (.022)	−.061** (.024)
	Within		.002 (.002)	.002 (.003)
Age	Between	−.001* (.000)	−.014*** (.003)	−.014*** (.004)
	Within		−.001* (.001)	−.001* (.000)
Household items	Between	.003 (.003)	.004 (.016)	.005 (.018)
	Within		.004 (.003)	.004 (.003)
Male	Between	.005 (.008)	−.049 (.108)	−.054 (.111)
	Within		.004 (.008)	.004 (.008)
Unemployed	Between	.014 (.015)	.208 (.134)	.121 (.141)
	Within		.011 (.015)	.011 (.014)
Group membership	Between	.035*** (.008)	.029 (.040)	.031 (.041)
	Within		.036*** (.009)	.036*** (.009)
Burkina dummy		−.015 (.020)	−.007 (.021)	.001 (.023)
Niger dummy		.046* (.023)	.065* (.026)	.072* (.029)
Wave 2 dummy		−.171*** (.034)	−.146*** (.034)	−.153*** (.031)
Wave 3 dummy		−.186*** (.028)	−.177*** (.031)	−.185*** (.032)
Constant		1.282*** (.043)	1.882*** (.155)	1.861*** (.160)
Observations		17,521	17,521	17,521
Communes		84	84	84
Commune-years		250	250	250

*$p < .05$; **$p < .01$; ***$p < .001$

in a given wave show higher levels of support for extremism than older and more educated communes. Within communes, younger and more integrated individuals are more supportive of violent extremism as well. In Model (3), the effect of reported community violence is itself separated into its "within" and "between" components, with the between effect representing the effect of the overall commune average of violence measure across the three waves of data collection, and the within effect representing the effect of wave-specific deviations of the commune from its overall violence mean. Model (3) shows that *both* effects are statistically significant; most importantly, the within effect indicates that, controlling for whatever (possibly unobserved) commune-level factors may lead communes with high reported violence to also have higher overall levels of support for extremism (which are captured by the "between" estimate in the model), as communes *change* in their reported level of violence they are also likely to change in their levels of extremist support. This is strong evidence in support of our main hypothesis. A postestimation test of the equality of the "within" and "between" effects of community violence shows that they cannot be distinguished from one another in magnitude ($p = .29$), indicating that the pooled effect from Model (2) is the most efficient estimate of the effects of violence on support for extremism between communes at a given point in time and as communes change in the reported experience of violence from their average levels.

Testing the Mechanisms

The results thus far underscore the importance of reported community violence as a predictor of support for violent extremism. But what are the mechanisms responsible for this effect? We have argued that three possible mechanisms may explain the relationship: a loss of social and political trust, increased exclusionary attitudes toward outgroup members, and increases in fundamentalist religiosity. We test the hypothesized mechanisms by first estimating models analogous to Model

(3) above, with each of the mediating variables as a dependent variable. We then include each of the mediators (both "within" commune-year and "between" commune-year components) in models predicting support for violent extremism along with all other variables specified in Model (3). These analyses indicate whether the mediators themselves are predictors of support for extremism and also how much of the total effect of community violence reported in Table 2 can be explained via the indirect effect of community violence on support for extremism through the given mediator.

The results in Table 3 show that reported commune-level violence indeed has significant and substantively meaningful effects on three of the four mediating variables: Controlling for all of the demographic variables as well as for country and time effects, a commune's level of violence significantly *lowers* both social and political trust and significantly *increases* adherence to fundamentalist religion in the form of support for Shari'a Law. The effect of community violence on the fourth mediator, outgroup bias, is positive but falls just short of significant at the .05 level ($z = 1.80$, $p < .072$). Further tests show that in no instance were the estimated "within" and "between" effects of community violence on the mediators statistically different from one another. Thus, the effects operate similarly at both the between-commune and within-commune levels. The effects are modest in substantive magnitude, with all of the standardized impacts ranging from .12 (outgroup bias) to .19 (social trust).

Table 4 presents the results from models that estimate support for violent extremism after including each of the four mediators. We compare the effect of reported community violence in the models without the mediator (row 1) and with it (row 2) in order to assess the degree to which the mediator reduces the initial effect. We also examine the effects of the mediator itself, both its commune-year average (the "between" component), and the mean-deviated individual "within" component, on support for extremism in the full model including all control variables outlined above.

The table shows modest reductions in the effect of reported community violence once the mediators are included, with the strongest reductions being attributed to the inclusion of the outgroup bias

Table 3. Effect of Community Violence on Mediators

Variable Name		Social Trust	Political Trust	Bias	Politicized Religiosity
Community violence		−.358* (.153)	−.259* (.119)	.229 (.127)	.498** (.177)
Education	Between	−.105** (.035)	−.079* (.038)	−.106*** (.028)	−.203*** (.046)
	Within	.002 (.005)	−.013*** (.004)	−.029*** (.005)	−.021*** (.004)
Age	Between	.005 (.007)	.004 (.006)	−.001 (.006)	−.020** (.007)
	Within	.001 (.001)	.002** (.001)	−.002*** (.000)	−.002** (.001)
Household items	Between	.037 (.026)	−.063* (.029)	−.010 (.020)	.036 (.033)
	Within	.018** (.006)	−.013** (.005)	−.012* (.005)	−.004 (.006)
Male	Between	−.110 (.216)	−.172 (.168)	.352 (.227)	−.534 (.289)
	Within	.002 (.014)	−.058*** (.018)	−.019 (.011)	.057*** (.017)
Unemployed	Between	−.071 (.283)	−.167 (.247)	.623** (.209)	.131 (.304)
	Within	−.112** (.038)	−.023 (.029)	.079** (.028)	.021 (.034)
Group membership	Between	.202** (.072)	−.096 (.065)	−.021 (.073)	.216** (.078)
	Within	.100*** (.014)	.078*** (.015)	.041* (.016)	.023 (.016)
Burkina dummy		.118** (.046)	.223*** (.052)	−.401*** (.038)	−.112* (.046)
Niger dummy		.088 (.058)	.142** (.047)	−.252*** (.047)	.705*** (.055)
Wave 2 dummy		−.048 (.047)	−.096* (.046)	−.261*** (.051)	−.474*** (.056)
Wave 3 dummy		−.157** (.053)	−.206*** (.055)	−.183** (.060)	−.557 (.076)
Constant		2.335*** (.285)	2.849*** (.243)	1.965*** (.248)	3.125*** (.261)
Observations		17,153	17,362	13,749	13,532
Communes		84	84	84	84
Commune-years		250	250	202	202

*$p < .05$; **$p < .01$; ***$p < .001$.

Table 4. Direct and Indirect Effects on Support for Violent Extremism

		Social Trust	Political Trust	Bias	Fundamentalist Religiosity
Effect of community violence without mediator included		.401*** (.089)	.401*** (.091)	.466*** (.115)	.456*** (.115)
Effect of community violence with mediator included		.426*** (.091)	.383*** (.090)	.428*** (.116)	.406*** (.112)
Effect of mediator on support for violent extremism	Between	.064 (.033)	−.073* (.035)	.160*** (.042)	.093* (.038)
	Within	−.009 (.006)	−.023*** (.007)	.051*** (.012)	.027** (.009)
Percentage of effect explained by mediator		–	4.49%	8.15%	10.96%

*$p < .05$; **$p < .01$; ***$p < .001$.

and support for Shari'a Law variables. In both of those instances, the between and within effects of the mediator are significant predictors of support for extremism; coupled with the effect of violence on the mediators shown in Table 3, these indirect effects account for approximately 8%–11% of the initial violence-to-extremism relationship. The loss of social and political trust due to community violence, shown in Table 3, has a weaker mediating effect, as the impact of political trust on extremist support is significant but substantively weaker than the effects shown for bias and religiosity, and the effect of generalized social trust on support for extremism is insignificant and, at least at the between commune-year level, in the anomalous positive direction. We conclude that the primary mechanisms by which reported community violence affects extremist support is via the exacerbation of outgroup biases and the intensification of fundamentalist religious beliefs, both of which consistently affect support for extremism at the commune and individual levels. In contrast, we find less support for mediation processes through the mechanism of social and political trust.

We further explore the interplay between these variables by assessing the extent to which outgroup biases and fundamentalist religious beliefs may also *moderate* the impact of community violence on support for violent extremism. The results, reported in Appendix S3 in the online supporting information, show changes in the impact of outgroup biases and fundamentalist religious beliefs at different levels of reported community violence, calculated by interacting violence with each variable's commune-level average (to obtain the "between" interaction) and with each individual's commune-mean-deviated value (to obtain the "within" interaction). The findings indicate that reported community violence significantly increases both the between and within effects of outgroup bias: For example, the effect of outgroup bias at the commune level on support for extremism changes from a statistically insignificant value of .06 when community violence is 0 to a value of .72 when violence is at its maximum. The same pattern can be seen for the interaction between community violence and support for Shari'a Law at the between-commune level: The effect of average commune-level fundamentalist religious beliefs on support for extremism changes from .34 at the highest levels of community violence (with a commune-level standardized effect of .85) to .03 (and insignificant) at the lowest levels of violence (with a standardized effect of .08), again roughly a tenfold increase in the estimated effects. This is evidence that community violence not only changes the *levels* of several of these important mediators but also intensifies their respective *impacts* on support for extremist violence as well.

Robustness Checks

We ran a series of models to assess the robustness of the effects. First, the findings are robust to alternative specifications of the dependent variable (see Appendix Table S4 in the online supporting information). We reran the baseline model in Table 2 separately for each of the three items that make up our composite measure of support for violent extremism, using multilevel mixed-effects-ordered logistic regression given the ordinal nature of each variable. The coefficient for reported community violence is positive and significant in all three models. In addition, we reran the baseline model in Table 2 using year dummies instead of wave dummies, as wave 2 data was collected across two different years (see Appendix Table S5 in the online supporting information). The results remain virtually unchanged by this alternative model specification. We also reran the baseline model in Table 2 with an added interaction term between community violence and survey wave (see Appendix Table S6). The coefficients for reported community violence in waves 1 and 3 are positive, significant, and similar in magnitude; in wave 2, the coefficient is also positive but statistically insignificant. We interpret this relative consistency in the effect of reported community violence across survey waves as additional evidence for the robustness of our results.

Finally, it is important to address the possibility of reverse causality—that is, that individuals' assessments of violence in the community may be *post hoc* rationalizations of their pre-existing

support for violent extremism. Without individual panel data we cannot test this possibility directly, but we do test for commune-level "rationalization" effects in cross-lagged models, which allow for reciprocal causality across waves between commune-level means on our community violence variable and support for extremism. The results, shown in the online Appendix S7, indicate that support for extremism at the commune level has no effect on later levels of reported community violence, while reported community violence has persistent positive and marginally significant effects ($z = 1.90$, $p = .056$) on later levels of extremist support, with standardized impacts of .15 and .16 for the two cross-lagged effects. This is consistent with the direction of causality specified in the models throughout the article.

Conclusion

This study brings together two heretofore largely distinct literatures, the effects of violence and civil conflict on important social and political outcomes and the determinants of individual support for violent extremism. We argued that reported exposure to violence and support for extremism are positively linked, positing three mechanisms through which violence in the community would increase support for extremism, two of them prominent in the literature on exposure to violence (i.e., a loss of trust and an intensification of biases against outgroups) and one from the literature on violent extremism (i.e., the intensification of fundamentalist religiosity).

The multilevel longitudinal models that we employed allowed for testing these hypotheses, using data from over 18,000 individuals in 84 communes at three points in time from Burkina Faso, Niger, and Chad, a portion of the African Sahel increasingly central to global efforts to combat violent religious extremism. The results indicated that the level of community violence, as reported by local residents, has a strong positive effect on support for extremism; communities reporting the maximum level of violence tapped by our indicators showed substantial increases (i.e., a .80 individual level and 1.85 commune-year-level standard-deviation effect) in average levels of extremist support compared with communes that reported no violence. This effect was among the largest of any single variable in our explanatory model. The effect, moreover, was shown to operate at the "within" commune-year level, in that the impact is associated with wave-specific changes or deviations in reported community violence at a given time from the commune's overall average; hence the estimated effect is not confounded by unobserved stable commune-level characteristics that may be related to a commune's level of violence and its level of extremist support. As such, while the study is observational in nature, the findings here support a stronger causal claim of the impact of community violence than a cross-sectional multilevel analysis would afford.

As for the mechanisms, community violence was found to significantly decrease both social and political trust, and increase levels of fundamentalist religiosity, with its effect on a fourth mediator, outgroup bias, being positive but falling just short of significant at the .05 level. These factors in turn, and to varying degrees, heightened support for violent extremism. At the commune level, violence-induced increases in outgroup biases and support for the application of Shari'a law accounted for a significant portion of the overall effect of community violence on support for violent extremism. Finally, we found that community violence moderates or amplifies the effect of these two mediators as well: Communities with the highest levels of reported violence showed substantially greater impacts of outgroup biases and support for fundamentalist religiosity on support for extremism than did low-violence communities.

Our findings have several key implications. First, they illustrate the importance of contextual factors in contributing to a fuller understanding of support for violent extremism among individuals and across communities. Extremist support is most prevalent not only among certain kinds of individuals, such as the young and those less trustful of political institutions, but also in certain kinds of communities, in particular those reporting extensive exposure to violence. The study thus

contributes to an emerging body of research that looks beyond the individual level to examine the contextual determinants of terrorism, extremism, and other conflict-oriented outcomes (e.g., Doering & Davies, 2019; Hirsch-Hoefler et al., 2014; McCauley, Finkel, Neureiter, & Belasco, in press; Vijaya et al., 2018). Second, the results provide additional evidence for the ongoing debate about the consequences of violence for communities and for individuals. While not refuting the possibility that exposure to violence can mobilize individuals in affected communities towards increased participation and other seemingly prosocial behaviors, the findings here point to a more pernicious set of additional attitudinal consequences, in that violence begets a loss of social and political trust, increased negativity towards outgroups, and increased adherence to rigid religious orthodoxies, and ultimately an increased sense that violent religious extremism can be efficacious and morally justifiable. Finally, from a policy perspective, the results suggest that actors interested in countering violent extremism should focus attention on forms of violence other than those directly related to terrorism. Our findings suggest that interventions directed at reducing ordinary community violence—that is, conflicts over land, labor disputes, and "normal" criminal behavior—may have multiplier effects that reduce downstream extremist support.

While the evidence for this study was drawn from the Sahel region of Africa, the findings offer insights that may be applied more generally in order to understand larger questions around support for religious violence. By treating community-level violence as a shared perception of insecurity in various potential forms, the study offers guidance to scholars of other regions that may be affected by distinct forms of violence but that nevertheless confront similar problems with religious extremism. Furthermore, outgroup biases that result from exposure to violence represent a potential challenge for communities anywhere, and the rise of support for more punitive forms of Shari'a law may complicate efforts to combat extremism not just in the Sahel but in other predominantly Muslim regions.

The limitations in this study suggest several avenues for future research. Given that a large portion of the relationship between community violence and support for extremism relationship was unexplained by the mediators considered here, it should be an important task for future work to uncover additional mechanisms, for example, psychological distress (Canetti-Nisim, Halperin, Sharvit, & Hobfoll, 2009). Further, we treated the explanatory variable of community violence in general terms; scholars might next explore the differential effects of land-related violence, systematic sexual violence, and other distinct types of violence on extremist support. This study also focused on one region, albeit a large three-country one; researchers should extend this study of community violence and violent religious extremism beyond the Sahel. Future work that incorporates these and other social, psychological, and environmental factors will further enrich our understanding of the multi-level causes and consequences of support for violent religious extremism in the Sahel and elsewhere around the globe.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site:

Table S1. Survey Measures for All Variables

Table S2. Descriptive Statistics

Table S3. Moderation Models

Table S4. Replication of Table 2 (Model 1) With Alternative Specifications of the Dependent Variable and Multilevel Mixed-Effects Ordered Logistic Regression (controls not reported)

Table S5. Replication of Table 2 (Model 1) With Year Dummies Instead of Wave Dummies

Table S6. Replication of Table 2 (Model 1) With Year Dummies Instead of Wave Dummies

Figure S7. Cross-Lagged Model of Commune-Level Violence and Commune-Level Support for Violent Extremism