

# Politics or Prejudice? Explaining Individual-Level Hostilities in India's Hindu-Muslim Conflict\*

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## Abstract

Multiple explanations have been proposed for what drives India's Hindu-Muslim conflict. Harnessing novel approaches to data acquisition and analysis, this paper uses insights from an electronic survey with 1,414 respondents to test three prominent theories of why individuals promote conflict with out-groups. The results show that security concerns for the future are strong predictors for a hostile stance and approval of violence. Experiences of violence in the past do not seem to systematically perpetuate hostility. Personal experiences with out-groups strongly correlate with hostile sentiments. These results hold across model specifications, post-stratified estimation based on census data, and a benchmark relying on Finite Mixture Models.

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Understanding the micro-motives for political violence remains an important challenge to contemporary peace research. This paper contributes to this goal in two ways. First and most importantly, it addresses the following research question: what explains hostile sentiments between Hindus and Muslims in cities all across India? To this end, three high-profile theories are reviewed below: elite manipulation, security dilemmas, and prejudice.

Although corresponding mechanisms cannot be tested causally with the employed empirical setup, the theories yield distinct observable implications along crucial dimensions: agency and justification. In one strand of literature, agency emerges from the bottom up as individuals engage in violence against out-groups. Competing accounts suggest it propagates from the top down as leaders mobilize their followers. Justifications either derive from rectifying past injury or countering future threats. Differences between the theories along these dimensions allow for measuring their scope and salience in an electronic cross-sectional survey.

Beyond its substantive contribution, this paper demonstrates how a long-standing debate on the drivers of violent conflict can be advanced with novel approaches to data acquisition and analysis. Empirical studies have traditionally faced a trade-off between broad geographic coverage and deep local insights. Generally, scholars have to allocate time either to conducting interviews in the field or analyzing observational data at higher levels of aggregation.

Recent technological innovation alleviates the need for such compromise: several countries experiencing communal violence yield high levels of Internet connectivity. Online micro-tasking has become a viable source of income for at least tens of thousands of people, and web-services for running large-scale surveys have lowered costs of data acquisition.<sup>1</sup> Consequently, victims, eye-witnesses, bystanders, and tacit supporters of political

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<sup>1</sup>Services such as Amazon’s Mechanical Turk or Crowdfunder (see [www.mturk.com](http://www.mturk.com) and [www.crowdfunder.com](http://www.crowdfunder.com)) connect “solvers” and “requesters” online. Requesters ask solvers to work on small tasks in their web browsers, such as classifying images, taking surveys, or testing web-sites under development. In return, fixed payments per task are issued by requesters.

violence have moved into the reach of electronic surveys.

While online surveys do not reach whole populations, they easily scale to thousands of participants and cover wide geographic areas. Moreover, census data can be used to correct for statistical biases arising from the under-representation of sub-populations.

The paper proceeds as follows: in the next section, I briefly summarize the recent history of communal conflict in India. After that, I review the existing literature, summarize theoretical explanations, and identify implications testable in a custom-tailored survey design. Subsequently, abilities and limitations of the research design are discussed and empirical results from a survey involving 1,414 respondents from urban areas all across India are presented. After that, the empirical scopes of the complementary theories are measured based on finite mixture models. The paper closes with a discussion of the findings, policy implications, and suggestions for future research directions.

## Religious Conflicts in India

The Indian subcontinent has been home to different ethnic, religious, and linguistic communities for all of recorded history. The modern Hindu-Muslim tensions, however, crucially intensified in 1947, when the British colonial administration divided its dominion into modern day India and Pakistan ([Metcalf and Metcalf 2012:217-223](#)). Political demands for a division were mainly pushed by the Muslim minority who feared limited political influence and Hindu dominance in an independent India ([Pandey 2001:21](#)). By several historical accounts, creating international boundaries to accommodate intermingled religious communities was an enormous challenge in itself, but the problem was amplified by the short timeline leading up to the division: as Britain was struggling economically after having prevailed at enormous material costs in World War II, bringing home its colonial administration and expeditionary forces was a strong priority (see [Darwin 2009:519](#); [Pandey 2001:21-25](#)). However, when Hindu-Muslim tension flared up in the countdown to the partition, British hesitance to deploy troops in sufficient numbers

had disastrous consequences culminating in the loss of hundreds of thousands of lives. While the center of hostilities lay in the Northern state of Punjab, riots, lynchings, and forced migration took place in many areas on both sides of the projected border (Pandey 2001:36-39).

In the following decades, Hindu-Muslim tensions ebbed and flowed, but were never completely resolved. Major clashes in 1967 and 1969 led to hundreds of casualties. Riots and bombings in Mumbai in 1992 and 1993 claimed more than a thousand lives. More recently, the 2002 and 2006 riots in Gujarat and clashes in Uttar Pradesh in 2013 contributed to the overall death toll of the conflict. In 2017, fears of renewed escalations have overshadowed a major election in India's most populous state, Uttar Pradesh.<sup>2</sup> Beyond that, the everyday lives of citizens all across the country are affected by the threat of violent escalations.

## Existing Literature

Naturally, multiple explanations for the underlying causes of the conflict have been proposed. When viewed from a birds-eye perspective, the existing explanations for communal violence and riots can be organized along two main dimensions: *agency* and *justification*. I will review their origins and implications in more depth in the following paragraphs.

### *Competing Notions of Agency*

In an excellent review of the literature on communal conflict, Wilkinson (2009) summarizes more than a century of alternating research trends. Initial attention focused on attributes of individuals participating in violent clashes. Accounts of the late nineteenth century propose collective irrationality festering in the lowest strata of society as reasons for riots (see Wilkinson 2009:332). Renewed scholarly interest following clashes during the

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<sup>2</sup>For a corresponding account by the "Times of India" see <http://timesofindia.indiatimes.com/elections/assembly-elections/uttar-pradesh/news/rise-in-communal-violence-in-poll-bound-up-kiren-rijiju-says/articleshow/57025941.cms>, retrieved last on May 2, 2018.

civil rights movement in the US relied on more nuanced reasoning. Based on insights from sociology, a series of “riot participation studies” (Miller 2013:387) established basic correlations. Instead of the poorest of the poor, males recruited from low-income working class families were identified as likely participants (see Cohen 1970; Ladner, Schwartz, Roker, and Titterud 1981; McPhail 1994).

Moving past the pure demographics of rioters, subsequent studies also relied on richer theories of motivation. One strand of literature that lends itself to explaining Hindu-Muslim clashes is rooted in social psychology. Early research formative to the entire field has been contributed by Allport (1954) and extended by Pettigrew (1979). Social psychology explanations assume that *prejudice* serves as a cognitive shortcut –a “heuristic” (see Gigerenzer and Todd 1999)– in situations where not all necessary information for judging a person is available. Based on the principle of “least effort” (Allport 1954:19), humans rely on past experiences with out-group members for initial judgment. Crucially, the resulting insights are not necessarily accurate. Negative prior experiences with individual members of out-groups can lead to a “fundamental attribution error”, that is the erroneous belief that the actions of individuals are indicative of the intentions of entire groups. This presents a vantage point to explain communal conflict: based on negative prior experiences with individuals, prejudice against out-groups can form on the individual level and escalate into deadly riots (see Allport 1954:60). Not surprisingly, prejudice has been used to explain Hindu-Muslim hostilities in India (see Tausch, Hewstone, and Roy 2009; Taylor and Jaggi 1974) and Bangladesh (Islam and Hewstone 1993). But not all prejudice leads to conflict. Positive experiences can mitigate hostile sentiments and forge communal cooperation at a grassroots level. Along these lines, the establishment of peace via inter-religious cooperation has been observed (see Manshardt 1936:37 cited in Wilkinson 2004:53). Despite the long history of prejudice-based explanations, the exact type of interactions that reduces tensions remains somewhat disputed (see Paluck and Green 2009). Most recently, however, Scacco and Warren (2018) found evidence for reductions in religious discrimination caused by inter-group contact in Nigeria.

Instead of demographics and socioeconomics, prejudice-theories identify prior personal experiences as motivating factors. *With regard to agency, this line of research suggests that violence originates at the individual level and escalates from the bottom up.* However, the contemporary literature on riots shares a critical outlook on these studies starkly summarized by Miller (2013:389):

Given the meager findings of the riot participation studies, we need not conclude that they were a waste of time and money. If nothing else, these studies strongly suggested that we must attempt to explain riot participation in terms other than individual attributes.

A variety of social factors have been taken into account, starting with dissemination of rumors amongst rioters (Allport and Postman 1947:193), social networks that facilitate mobilization (Scacco 2012), and geographic contagion (see Miller 2013:393). While these factors provide some additional leverage in explaining violence, the contemporary literature has largely shifted the focus away from personal motivations altogether. Instead, the role of elites and the state has found itself in the limelight of more recent research.

In studying Hindu-Muslim riots in Northern India, Brass (2004:15) identifies a pattern of “dramatic production” of group-level violence for political gain: *rehearsals* in terms of incendiary rhetoric are followed by *enactments*, thus the actual production of violence. After that, *interpretations* deliver post-hoc justifications for the preceding riots. The entire cycle is allegedly designed to generate cohesion amongst followers especially in times of political competition due to upcoming elections. Summarizing his insights most bluntly, Brass (2004:133) asserts that “only if political party leaders feel that a riot is necessary for their advancement, particularly for their electoral success, can a riot take place”.

Wilkinson (2004) also points to the role of elites. As inter-group riots can be prevented by sending armed police to the scene, the state faces a choice in terms of letting some riots play out while preventing others. Wilkinson (2004) demonstrates that state-level electoral incentives in India explain the strategic prevention and non-prevention of violence. *In*

*this reasoning, political elites instigate violence from the top down.* In summary, existing research on communal riots starkly differs in its notion of agency. Initial studies have paid much attention to individual-level attributes of riot participants. Later studies largely point to the role of elites.

## ***Justifications for Violence***

A second contested dimension in the literature lies in the justifications for violence. More precisely, the temporal sequence of attack and counter-attack varies across theories.

In pursuit of appealing to a groups' shared ethnic or religious identity (see [De Figueiredo and Weingast 1999](#)), elites can promise to rectify past injury by out-groups. [Mack \(1983\)](#) suggests that memories of past defeats can be actively used to mobilize group members for collective acts of vengeance (cited in [Cairns and Roe 2003:32](#)). [Bilali and Ross \(2012\)](#) highlight how memories of past conflict can fuel future aggression (see also [Liu and Hilton 2006](#)).

But previous injury must not even be real to serve as justification. In a landmark study on ethnic riots, [Horowitz \(2001:76\)](#) analyzes rumors that circulated prior to nine high profile Hindu-Muslim riots in India between 1964 and 1994. All of them convey outrageous acts of violence committed by the out-group in the recent past. *Whether such rumors originate at the top or the bottom, they legitimize violence by pointing to the past.* But an equally frequent theme in rumors is the out-group hatching murderous plans:

The reports that reach the crowds have two significant characteristics. The plans or actions to which they refer are generally violent, and the violence is of the most brutal and extreme kind [...] Both the violence of the incidents and their massive, outrageous, irreversible character are important in the process of triggering violence. ([Horowitz 2001:83-84](#))

In summarizing her extensive research on riot participation in Nigeria, [Scacco \(2012:11\)](#) observes that “the inability of the state to offer protection, and the subsequent fear of be-

ing targeted, can motivate large numbers of people to participate who might not otherwise choose to riot.” The underlying logic bears strong resemblance to the “security dilemma” applied to the study of ethnic conflict by Posen (1993). The concept was originally described by Herz (1950) and has become one of the most well-known paradigms for conflict in International Relations.<sup>3</sup> It centrally contends that a political actor’s attempt to increase its own security by preparing for war intimidates its potential adversaries which leads them to prepare for conflict. Especially under anarchy – that is in the absence of a hegemonic mediator that could sanction an aggressor– this constellation can trigger an arms race and eventually an all-out war. According to this line of thought, conflict can emerge tragically even in the absence of threatening intentions (for an excellent conceptual review of the classic security dilemma see Tang 2009).

Both Posen (1993) and Kaufmann (1996, 2007) successfully applied a similar logic to explaining ethnic conflict escalations in Yugoslavia and Iraq. Suzuki (2011) applied the notion to explaining Hindu-Muslim tensions in India. Wilkinson (2004:32) reviews earlier studies on India and finds the idea of city-level population balances fueling security-dilemmas to be “ubiquitous”. *In this reasoning, narratives of future attacks can emerge spontaneously or be disseminated by elites to justify violence in the present.*

In summary, prejudice, security concerns, and elite manipulation constitute prominent explanations for rioting. The competing theories vary along two empirically observable dimensions: agency and justification. Table 1 summarizes these differences: In security dilemmas, individuals expect future attacks by the out-group and promote a stronger stance as a preemptive measure. Such concerns arise within the societal basis rather than the political vanguard. Translated into a first testable statement, we would expect that **fear of future out-group attacks positively correlates with support for anti-out-group actions.**

In contrast, elite manipulation is not explicit with regard to temporal sequence – both retaliation and preemptive strikes can be used to justify conflict. But according to

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<sup>3</sup>The theory was inspired by even earlier work: the arms race model by Richardson ([1919] 1960) is largely compatible with Herz’ line of reasoning.



	<b>Past experiences</b>	<b>Future concerns</b>
<b>Top-down</b>	<i>Elite manipulation:</i> Elites bring up attacks by out-group in the past	<i>Elite manipulation:</i> Elites point to danger posed by out-group in the future
<b>Bottom-up</b>	<i>Prejudice:</i> Personal negative experiences with out-group members	<i>Security dilemma:</i> Personal concerns for future attacks by out-group

Table 1: Summary Table for the reviewed theories.

this reasoning, conflict propagates from the top down: individuals in key positions lead the masses into bloodshed. Expressed as hypothesis 2, we would expect the following:

**Out-group defamation by elites leads to support for anti-out-group actions.**

Finally, if prejudice was a major factor, individual group members would generalize from their negative experiences with the out-group. Prejudice can arise in multiple ways, ranging from socialization and propaganda to direct experiences with the out-group. Generally, prejudice is rooted in episodes that lie in the past rather than concerns for the future.

Formulated as hypothesis 3, we arrive at the following: **Negative experiences with the out-group in the past leads to support for anti-out-group actions.** In summary, the three theories point to different mechanisms regarding agency and justification. While those mechanisms can coexist, their relative empirical importance is of great interest to the scholarly debate. In the next section, I illustrate how these competing expectations can be reconciled in a cross-sectional survey study.

## Research Design

In order to test the competing empirical expectations, I ran a large-scale survey and relied on Amazon’s Mechanical Turk (MTurk hereafter) for recruitment of respondents. The survey combined small financial incentives for participation with an online questionnaire and was completed by 1,414 online workers from cities all across India. This approach to studying communal hostility is unusual and warrants scientific justification.

For the question at hand, online surveys offer tangible advantages over alternative research designs. Most importantly, surveys shed light on the reasoning of individuals. Experiences, attitudes, and exposure to elite messaging can be related directly to hostile outlooks on group relations. While sentiments and motives can be studied in their own right, they also inform the debate on the causes of violence. Previous research has established a strong correlation between approval of political violence in surveys and subsequent conflict intensity in episodes of political strife (see [Linke, Schutte, and Buhaug 2015](#)). Long preceding this empirical insight, [Green and Seher \(2003:526\)](#) argued most explicitly for better research designs being necessary to study the role of micro-motives in political violence and lament “the paucity of individual-level data”, observing that “[r]arely 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.”

Moreover, alternative research designs would suffer from their own set of limitations. For instance, shifting the unit of analysis from individuals to city-level riots might entail both conceptual and empirical drawbacks. [McPhail \(1994\)](#) criticizes the “monolithic conception of riots” as the erroneous belief that they constitute cleanly demarcated events. Instead, “riot boundaries are, if anything, more amorphous than group boundaries” ([Horowitz 2001:56](#)) and can be seen as “constructions upon events that are usually open to a multiplicity of interpretations” ([Brass 1997:6](#)). Beyond such conceptual problems, reporting bias in event data can jeopardize valid inference (see [Weidmann 2015](#)).

Clearly, in-depth ethnographic insights –such as the ones provided by [Brass \(2004\)](#)– do not suffer from these exact problems. While the importance of such studies cannot be overstated, their limited geographic coverage entails that some of our insights remain –in the purely statistical sense of the word– underpowered. Also, they are naturally guided to areas with recent histories of communal clashes, leaving little room for cases where the *absence* of causes is met by an *absence* of consequences. For a full explanation of why individuals promote communal conflict, variance on both sides of the equation

is required. In summary, large-scale electronic surveys can meaningfully complement traditional research designs.

However, they also suffer from limitations that need to be made explicit and remedied to the extent possible. Most importantly, a sample of online workers might not be representative of the whole population of India. Crucially, all participants are literate, and the sample is skewed toward the young, male, and educated members of society. However, India’s 2011 census can be used to correct for the resulting biases statistically. Post-stratification (see [Rossi, Wright, and Anderson 2013:45](#)) allows for weighting observations to approximate distributional properties of the general Indian population. In a recent benchmark comparison against fully representative samples, [Wang, Rothschild, Goel, and Gelman \(2015\)](#) achieve impressive results based on this approach and [Huff and Tingley \(2015\)](#) show that MTurk surveys can yield valid insights. In comparison to representative face-to-face surveys and online questionnaires, [Clifford, Jewell, and Waggoner \(2015\)](#) conclude that “MTurk is a valid recruitment tool for psychological research on political ideology”. These studies focused on voting behavior in the United States rather than communal conflicts in India. The choice of variables for stratification must therefore be re-evaluated. For the subsequent empirical analysis, age, gender, and religious groups in the sample were weighted to approximate distributions in the Indian population at large. All three variables have been associated with conflict behavior in previous research on “youth bulges”, minorities being more risk averse in conflict escalations, and gender-specific inclination for violence ([Fearon, Kasara, and Laitin 2007](#); [Urdal 2006](#); see also [Pinker 2011:517](#)).

Post-stratification can account for under-representation in the sample, but it cannot account for the complete omission of sub-populations. The empirical scope and generalizability of the results is clearly limited by the fact that illiterate members of society were effectively excluded from participation in the survey.

Moreover, ethical considerations require careful balancing of empirical adequacy and operational safety in the wording of the questionnaire. The most adequate set of questions

would directly tap into causal relations, for instance “would you approve of killing Hindus, because you feel threatened by them?” Asking this exact question would be futile at best and dangerous at worst. Social desirability bias would prevent participants from revealing their true preferences; fear of repercussions could lead to additional underreporting of hostile views and high levels of non-response. The latter problem stems from the fact that all electronic communication can be intercepted theoretically. While web-sessions during the interview were secured, the security of respondents’ computers could not be guaranteed.

Probing respondents’ outlook on group relation in more general terms strikes a necessary compromise. By asking whether or not respondents support a stronger stance against respective out-groups and to what extent they believe political violence can be justified, obvious sources of bias can be avoided.<sup>4</sup> However, individual-level hostilities are also only measured indirectly as a consequence.

A final problem pertains the purely cross-sectional nature of the survey that prohibits causal identification. Panel surveys with identical respondents are currently not supported by MTurk. Additionally, recording of identifying information for recruitment into a second survey wave would violate Amazon’s terms of service and jeopardize the privacy of respondents. However, the observable implications of the reviewed theories differ with regard to agency and justification. Therefore, a purely correlational analysis can differentiate theoretically explicit mechanisms.<sup>5</sup>

In summary, online surveys can yield empirical insights long deemed highly relevant. Like studies on the correlates of violent clashes or ethnographic accounts, they also suffer

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<sup>4</sup>Avoidance of social-desirability bias and post-hoc rationalization of events seems especially advisable for this case. As explained above, ample evidence suggests that riots are not cleanly demarcated and probing for preferences rather than events grants a view on sentiments unobstructed by moral justifications.

<sup>5</sup>However, the presented mechanisms can overlap at the individual level. As others have done in prominent debates in conflict research, such as “Greed versus Grievance” in civil wars, or explanations for the “Democratic Peace”, I merely articulate which observable implications should hold true for each candidate explanation. For past debates, this does not rule out that individual combatants could be motivated by both greed and grievance or that individual countries could be motivated by both Realist and Liberalist considerations. For explanations of riot participation in India, prejudice and elite manipulation, for instance, could coexist in the minds of respondents. See also Table 8 in the supplementary information for a corresponding empirical test.

from a number disadvantages. Yet, a custom-tailored large-scale survey can meaningfully complement other lines on inquiry to advance the debate on drivers of communal conflict.

## Survey Design

I have conducted two online surveys using distinct platforms. Before resorting to MTurk, I ran a pilot study using a similar web service called Crowdfunder. The pilot survey was used to test the basic questionnaire and to assess ceiling and floor effects.<sup>6</sup> Based on the initial results, I ran an extended survey with MTurk workers. In exchange for \$0.7 (USD), I asked 1,500 MTurk workers from India to complete a short questionnaire developed and hosted at [www.unipark.com](http://www.unipark.com).<sup>7,8</sup> The payment was chosen to offer a meaningful incentive as the survey can be completed in just a few minutes while the reimbursement approximates an hourly wage in many parts of India.

I collected data on basic demographics and religious affiliation. Respondents were asked to which of the officially recognized groups they belonged and were subsequently grouped into three categories: Hindus, Muslims, and all remaining confessions. For the 217 participants that were neither Hindu nor Muslim, the survey ended right after these initial questions.

Hindus and Muslims received identical surveys, but the name of the out-group was

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<sup>6</sup>Results from the pilot are substantively very similar to main analysis despite a much smaller sample size. The full pilot questionnaire and the initial results can be found in section 1 in the supplementary information.

<sup>7</sup>Before conducting the electronic survey, I reached out to the ethics boards of University of Konstanz to get their approval. They had no objections against the overall research approach, but stated that the ultimate responsibility for the questions asked lies with the researcher. I therefore applied the central criteria for IRB approvals to my survey in terms of clarifying the nature of the survey in a disclaimer to ensure informed consent for taking the survey (1), by not asking any questions that could have legal or political repercussions for respondents (2), and by not asking any identifying information from respondents (3). The web session of survey participants was SSL encrypted and replication data will be made available after publication of this article in anonymized form. After completion of the surveys at [www.unipark.com](http://www.unipark.com), MTurk workers were provided with alphanumeric keys that uniquely identify each questionnaire. Those keys were contributed on MTurk to trigger the payouts.

<sup>8</sup>The survey was introduced with the following disclaimer: *This is a short survey asking about basic demographic information and interactions with members of other communities. All information will be treated completely confidentially and no names or other identifying information will be asked. Please note that you will be asked about possible negative experiences in your past and feelings you have towards other communities. If you do not wish to share this information, you should abstain from doing the survey. No detailed, identifying, or graphic information on any experiences or sentiments will be asked.*

adapted accordingly. For coding right-hand side variables, security concerns, elite messaging, and prejudice-inducing experiences were mapped onto a five-point Likert scale: political statements were presented and could be approved or dismissed to varying degrees ranging from “strongly disagree” to “strongly agree”. Security concerns were covered by asking participants how much they agreed with the statement “I am concerned about violence by [out-group] in the future”. As theories of elite manipulation are agnostic to the pro- or reactive justification for confrontation, the corresponding question was asked in two variants: “How much do politicians and religious leaders warn against [future/past] violence by [out-group]?” Prejudice questions included “how have your personal experiences been with [out-group]” and “have you, (or people you know personally) experienced violence by [out-group]?” Based on the emphasis put on inter-group contact in social psychology, the frequency of interactions with members of other religious communities was also probed.

In order to capture alternative explanations, ideological control variables were introduced. Democratic values were measured by asking whether “people who are wrong about politics should stay out of it” and if “having different opinions is important for democracy”. Entrenched thinking along group lines –for reasons possibly outside of the considered explanations– was probed by asking whether “[out-group] always causes a lot of problems” and “other [in-group] share my views on politics”.

As additional religious controls, respondents were asked how important their religious community was to them and whether their families ever “had to relocate for political reasons”. This question was intended to capture possible long-term grievances resulting from the killings and forced migration in the wake of the 1947 partition.

In order to measure hostilities against the out-group, two dependent variables were coded. **Stronger stance** reflects agreement with the statement “[in-group] should take a stronger stance against [out-group]?” Clearly, high levels of agreement with this question indicate animosity toward the out-group, but possibly no full-fledged hatred or aggression. However, asking a more direct question would have increased non-response and possibly

bias in fear of repercussions as discussed above. Therefore, a second question was asked that correlates with aggressive sentiments without explicitly endorsing attacks on specific groups. **Violence justified** reflects agreement with the statement “violence can be used for a just cause”. As I will show in the empirical analysis, calling for a stronger stance predicts violence approval. Section 2 in the supplementary information shows the full questionnaire with associated response options as well as distributions of responses.

One additional design feature of the survey is that question ordering was randomized. Approximately half of all respondents (47%) were given demographic questions first, questions for the dependent variables second, and then remaining items capturing explanatory variables and controls. The remaining 53% of respondents first received questions regarding security concerns, elite messaging, and prejudice, and were asked afterwards about supporting violence and a stronger stance.

Randomized question ordering was chosen to mitigate two undesired effects that could affect the results: social desirability bias and inadvertent priming. In the first version of the survey, respondents are first asked whether they support a tougher stance and violence. Conceivably, societal expectations promoting non-violence and tolerance might prevent participants from revealing their true preferences in this situation. In this case, the estimates would be biased towards zero. In the second version of the survey, asking about experiences first can induce unintentional priming. For instance, memories of negative experiences in the past might be activated, legitimizing calls for a tougher stance. In this case, estimates would be exaggerated. To make sure that these effects would not go unnoticed and possibly influence the results, responses from the two versions were compared. Section 5 in the supplementary information presents non-effects for question ordering.

# Empirical Analysis

## *Data Acquisition and Preparation*

The survey was launched on November 26, 2016. After 12 days (December 8), 1,414 MTurk workers had completed the assignment and the completion rate had dropped to about one per hour. At this point, I decided to end data acquisition. Non-response rates per question were extremely low due to the nature of the survey (see section 8 in the supplementary information for details): To prevent respondents from quickly navigating to the last page to obtain keys for the MTurk reimbursement, most questions were mandatory and respondents took the time to read them.<sup>9</sup> In only 22 cases, respondents did not complete the survey by closing their web sessions either intentionally or accidentally.

One plausible concern with the overall research design is that respondents might be located in areas that are entirely unaffected by Hindu-Muslim riots. Utilizing event data from the ACLED data collection, I can rule out this possibility (see [Raleigh, Linke, Hegre, and Karlsen 2010](#)). Figure 1 shows locations of respondents obtained via geo-location lookups of their IP addresses, and locations of riots in 2015 and 2016 from the ACLED event data that were explicitly associated with Hindu or Muslim groups. Due to this spatial matching, previous riots in the cities of respondents can be incorporated into the empirical analysis and the overall geographic overlap of violence and survey sample can be assessed: 166 locations are represented in ACLED, but not in the sample; 73 are represented in the sample, but not in ACLED; and 20 cities have both experienced riots and yield respondents. Moreover, the geographic distributions of respondents and events are clustered in the North and South, but other areas are represented as well. In sum, overlap between the studied conflict and the locations of respondents can be observed and aligns with a large fraction of respondents that claims to have experienced violence at the hands of the out-group.<sup>10</sup>

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<sup>9</sup>Section 3 of the supplementary information shows descriptive statistics for the duration of surveys.

<sup>10</sup>Another concern could be that attitudes toward out-groups are largely endogenous to previous levels of violence for entire cities which would render individual experiences less important. Table 9 in the supplementary information shows that there is no systematic correlation between previous city riots and



### Locations of respondents and previous riots



Figure 1: Overview of the locations of respondents and sites of previous religious riots from the ACLED data collection. The small gray crosses mark distinct locations of riots in 2016; the small gray circles mark localities unaffected by riots while being represented in the survey; and the large crossed circles in black indicate cities where both respondents are located and riots have occurred. As shown in the Figure, the resulting sample contains a balance between locations affected and unaffected by previous riots: 20 cities have experienced recent political violence and yield respondents, 73 cities have not been affected, but yield respondents, and 166 locations are affected, but are not represented in the survey.

To compensate for systematic regional differences, statistical models were estimated using regional fixed effects at the state level. A robustness check in Table 11 in the supplementary information shows that omitting responses from the state with the most the dependent variables.

respondents –Tamil Nadu– does not substantively change the empirical results.

## *Descriptive Statistics*

The resulting sample of unique respondents included 1,076 Hindus, only 121 Muslims, and 217 members of other religious communities. Descriptive statistics for all responses can be found in section 3 of the supplementary information. The two dependent variables –promotion of a strong stance against the out-group and violence approval– are very similarly distributed within the communities (see Figures 2 and 3). Strong support for a stronger stance and acceptance of violence is only indicated by a small minority of respondents. Distributions for all survey responses are plotted in section 2 of the supplementary information.

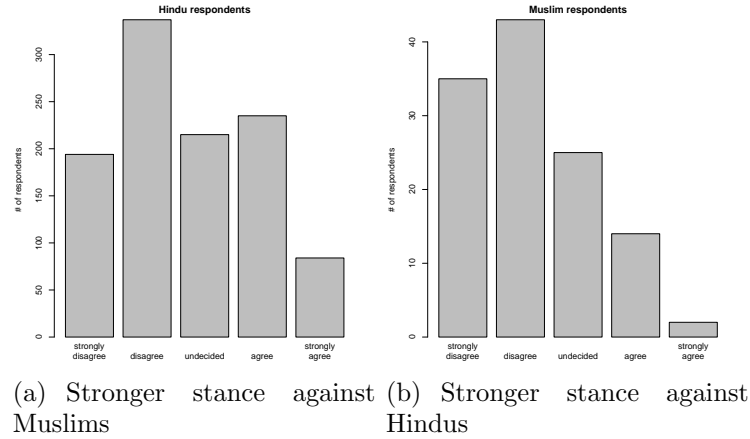


Figure 2: Promotion of a stronger stance against Hindus or Muslims within the respective other group. Note the different scales resulting from different sample sizes.

In order to rule out multicollinearity for the subsequent analysis, I calculated correlations between responses and corresponding results can be found in section 4 of the supplementary information. Overall, responses are void of ceiling and floor effects and measure orthogonal concepts, as visible in the small correlations between right-hand side variables. While some riot-prone areas such as the northern state of Uttar Pradesh are underrepresented, respondents are by no means detached from the conflict: around 80% indicate that their families had to relocate for political reasons at some point and around

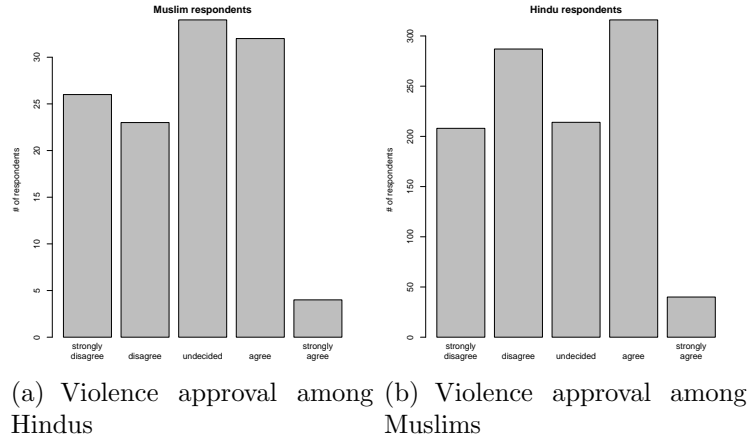


Figure 3: Strong approval of political violence is low among the surveyed groups. Roughly 3% indicate that they strongly agree with the notion that “violence can be use for a just cause”. However, 26% of Muslims and 29% of Hindus indicate that they generally agree with the statement. Note the different scales resulting from different sample sizes.

27% claim to have personally experienced violence at the hands of the other group (26% of Hindus and 32% of the much smaller Muslim sample).

To remedy the problem of non-representativeness for the demographic variables, I acquired data from the 2011 Indian census for a post-stratified analysis.<sup>11</sup>

## Multivariate Analysis

In order to test the theoretical expectations, I rely on two complementary regression designs. First, I estimate standard multivariate regression models. As survey responses were given on a five-point Likert scale, OLS regression is used to estimate statistical effects and central results are visualized in Figure 4.<sup>12</sup> In a subsequent step, I compare the explanatory power of the reviewed theories. To this end, I follow a recent methodological

<sup>11</sup>Specifically, I downloaded Table C-9, “education level by religious community and sex for population age 7 and above” from [http://www.censusindia.gov.in/2011census/population\\_enumeration.html](http://www.censusindia.gov.in/2011census/population_enumeration.html), last accessed on January 16, 2018. I used total national counts for urban residents for each of the levels of education presented in the survey by age, gender, and religious community, resulting in 96 strata. For each stratum, I calculated the corresponding fraction of respondents in the sample and the Indian urban population. Weights for the post-stratified analysis were obtained by dividing the fraction of individuals in the census by the corresponding fraction in the sample.

<sup>12</sup>Objections against using linear regression with numerical representations of Likert item have been raised, as the resulting distribution features discrete response options in an ordinal dimension. Table 7 in the supplementary information shows substantively identical results estimated via ordinal logistic regression.

innovation and estimate finite mixture models (FMM hereafter, see [Imai and Tingley 2012](#)).

Detailed statistics for the OLS models are reported in Table 2. Model 1 regresses support for a stronger stance against the out-group on all explanatory variables. Model 2 adds regional Fixed Effects corresponding to the state or union territory of the respondent. For Model 3, post-stratification weights based on the 2011 census are included in the estimation. Model 4 tests the central implication of the security dilemma: personal concerns over future violence should be positively associated with the promotion of a stronger stance against the out-group. Model 5 operationalizes elite manipulation theory. Model 6 focuses on past experiences and contact with the out-group as suggested by prejudice theory.

In model 7, agreement with the notion that “violence can be used for a just cause” is regressed on the full set of predictors. This model shows that the dependent variable in models 1 to 6 –support for a stronger stance– is reliably and positively correlated with violence approval. This insight underlines that asking for support of a “stronger stance” is an eligible approach to measuring attitudes towards the violent Hindu-Muslim conflict. Beyond the results communicated in Table 2, Figure 4 communicates the main results visually. It depicts statistically significant and robust estimates from models 1 to 3.

### ***Interpretation of the Regression Results***

Clearly, theoretical expectations derived from the existing literature have provided valuable guidance in the selections of interview questions. The adjusted  $R^2$  values of models 1-3 indicate that about half of the observed variance in attitudes is explained by the full model. Relating the numerical estimates back to the theoretical debate, we find that both bottom-up, as well as top-down accounts find empirical support. The highest estimate is obtained for security concerns, followed by personal experiences with the out-group. The estimate for elites warning of future attack is significant in the post-stratified analysis and

Table 2: Results from the multivariate analysis of sentiments and violence approval

	Dependent variable:						Violence justified
	Stronger against out-group						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Stronger stance against out-group							
Age	-0.037 (0.033)	-0.034 (0.033)	<b>0.210***</b> (0.030)				<b>0.212***</b> (0.038)
Gender	0.091 (0.062)	0.081 (0.063)	<b>0.422***</b> (0.055)				<b>-0.129***</b> (0.041)
Years in school	-0.015 (0.015)	-0.012 (0.015)	0.007 (0.008)				-0.014 (0.078)
Family relocation	<b>-0.258***</b> (0.075)	<b>-0.269***</b> (0.076)	<b>-0.522***</b> (0.078)				<b>-0.033*</b> (0.019)
Religious identification	<b>0.106**</b> (0.046)	<b>0.113**</b> (0.047)	<b>-0.161***</b> (0.049)				0.042 (0.094)
Political intolerance	<b>0.047*</b> (0.028)	0.040 (0.028)	-0.033 (0.031)				0.058 (0.058)
Democratic values	-0.007 (0.029)	-0.003 (0.029)	<b>0.075**</b> (0.031)				-0.023 (0.035)
In-group shares view	<b>0.146***</b> (0.031)	<b>0.142***</b> (0.032)	0.052 (0.039)				-0.017 (0.036)
Out-group “creates problems”	<b>0.420***</b> (0.030)	<b>0.410***</b> (0.031)	<b>0.390***</b> (0.033)				<b>0.098**</b> (0.039)
Personal concerns	<b>0.147***</b> (0.030)	<b>0.158***</b> (0.031)	<b>0.244***</b> (0.029)	<b>0.397***</b> (0.024)			0.061 (0.041)
Leaders warn (future)	0.042 (0.035)	0.046 (0.035)	<b>0.194***</b> (0.029)		<b>0.228***</b> (0.034)		-0.028 (0.038)
Leaders warn (past)	<b>-0.059*</b> (0.036)	-0.059 (0.036)	-0.029 (0.036)		-0.066 (0.046)		0.028 (0.043)
Personal experiences	<b>-0.116***</b> (0.038)	<b>-0.113***</b> (0.039)	<b>-0.174***</b> (0.040)			<b>-0.577***</b> (0.041)	-0.049 (0.044)
Experienced violence	0.106 (0.070)	<b>0.123*</b> (0.072)	-0.112 (0.074)			<b>0.369***</b> (0.083)	0.052 (0.048)
Contact with out-group	<b>0.003*</b> (0.001)	<b>0.003**</b> (0.001)	<b>0.006***</b> (0.001)			0.007 (0.002)	0.007 (0.087)
City riots	0.020 (0.017)	0.016 (0.023)	<b>0.042**</b> (0.017)			0.0004 (0.002)	-0.001 (0.002)
Religious group	<b>-0.305***</b> (0.094)	<b>-0.313***</b> (0.096)	0.184 (0.207)	0.041 (0.298)	0.035 (0.326)	0.305 (0.291)	-0.012 (0.021)
Constant	<b>1.094***</b> (0.330)	<b>1.259***</b> (0.366)	<b>1.287***</b> (0.261)	<b>2.155***</b> (0.250)	<b>2.514***</b> (0.284)	<b>4.224***</b> (0.266)	<b>2.613***</b> (0.412)
Regional FE	NO	YES	YES	YES	YES	YES	NO
Post-stratification	NO	NO	YES	YES	YES	YES	NO
Observations	1,101	1,101	1,083	1,153	1,153	1,083	1,101
R <sup>2</sup>	0.445	0.458	0.643	0.263	0.120	0.267	0.093
Adjusted R <sup>2</sup>	0.436	0.437	0.629	0.245	0.098	0.247	0.078

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

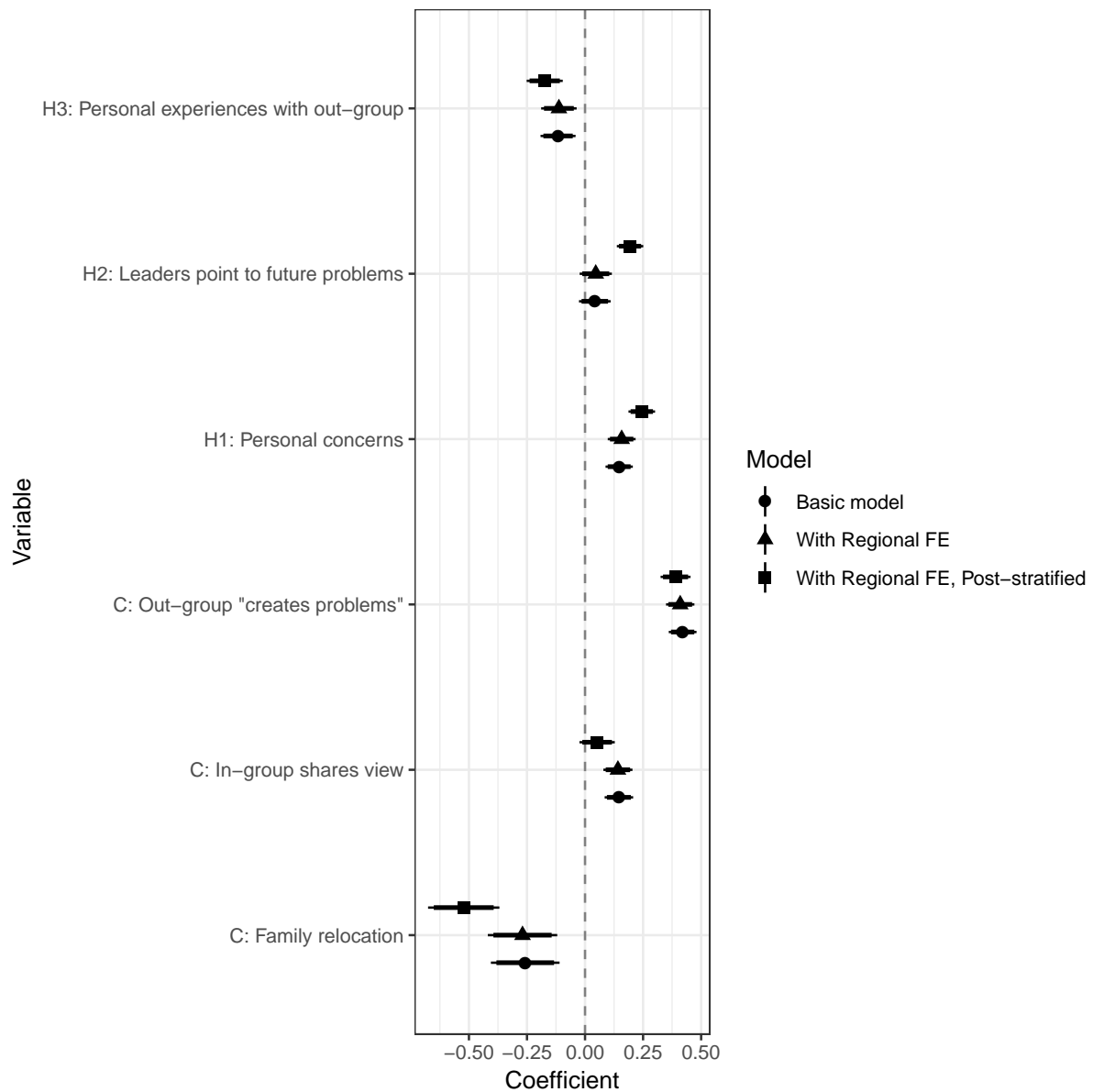


Figure 4: Coefficient plot with robust predictors for models 1 to 3. The main explanatory variables are statistically significant predictors of support for a “stronger stance” across model types. Please refer to Tables 2 for additional specifications and details.

marginally significant in the remaining specifications.

With regard to the justification of conflict, security concerns for the future seem to be more potent motivators than past injury: Personally experienced violence and leaders pointing to past attacks by the out-group do not reliably correlate with a stronger stance against the out-group. Additionally, forced relocation in the family history is robustly and negatively correlated with support for a stronger stance. This insight is crucial, as

memories of past injury frequently contribute to hardened identities (see [Bilali and Ross 2012](#); [Rozenas, Schutte, and Zhukov 2017](#)). In this case, the large number of respondents whose families had to relocate in the past are *less* supportive of confrontation. Inter-generational learning from earlier calamities seems to undermine the cycle of retaliation within this sample. The contrast between past and future motivations is most pronounced in responses to the elite-centric questions: agreement with the statement that “leaders warn against future violence by [out-group]” correlates with a hostile stance in models 3 and 5, but responses to the equivalent question about the past do not.

Personal security concerns for the future correlate with support for a tougher stance against the out-group across all specifications. While past violence is not correlated with a stronger stance against the out-group, the overall quality of past interactions seems to matter. As predicted by the prejudice literature, personal experiences are negatively correlated with a hostile stance against the out-group. Quite intuitively, better experiences lead to a less confrontative outlook. Interestingly, frequency of intergroup contact is positively correlated with agreement to taking a stronger stance. However, the corresponding estimate is minuscule and irrelevant in substantive terms.

The empirical picture is completed by the estimates for personal, political, and religious controls. The dummy variable coding religious group is negatively associated with support for a stronger stance in models 1 and 2. This means that Muslims are generally less confrontative in the sample, but the effect disappears in the post-stratified analysis (model 3). The number of Muslim respondents is much smaller in comparison to Hindus and the associated estimates do not allow for definitive insights. Religious commitment has a positive estimate in models 1 and 2, but a negative significant effect in model 3. These contradictory results suggest the estimates should not be taken at face value. However, out-group prejudice, as reflected in agreement with the statement that the out-group “creates problems”, is strongly and positively correlated with calls for a tougher stance. Similarly, believing that the in-group shares personal views is a strong predictor across groups. Based on these results, entrenched “us-versus-them” thinking

strongly contributes to promoting aggression, as suggested by [McPhail \(1994:23\)](#).

In summary, negative personal experiences, as well as security concerns for the future are robustly related to support for taking a stronger stance against the out-group. Support for “elite manipulation” explanations is less definitive: leaders pointing to future clashes is positively associated with a confrontative outlook, but elites leveraging the past shows no reliable correlation. Generally, the logic of null hypothesis significant tests cannot be used to disprove prominent theories. However, these results strongly suggest that the top-down emphasis in existing research needs to be complemented with bottom-up insights. Moreover, the estimates suggest that justifications based on the future contribute to hostile sentiments more reliably than references to past attacks. Beyond comparisons of effect sizes and statistical significance, I assess the relative explanatory power and the scopes of the theories in the next section.

### ***Finite Mixture Models***

Finite Mixture Models have become an increasingly popular approach to testing competing theories in political science (see [Heinrich 2013](#); [Miwa 2015](#); [Tingley 2014](#)). They can be used to measure the empirical scope of different specifications. As [Imai and Tingley \(2012\)](#) point out, estimating a full regression model with predictors proposed by competing theories is problematic as no single theory would suggest that the full model correctly represents the true data generating mechanism (see also [Achen 2002](#)). Estimating several models with distinct subsets of predictors can lead to omitted variable bias. Generally, neither estimation strategy fully maps on to the scientific goal of testing which theory applies best for a specific set of observations.

Several approaches to testing competing theoretical claims on observational data have been proposed. For instance, numerical predictions beyond the sample can serve as tests of external validity (see [Schrodt 2014](#); [Ward, Greenhill, and Bakke 2010](#)). [Imai and Tingley \(2012\)](#) propose utilization of FMM to estimate sub-populations within the observed sample (for an excellent substantive application, see [Weidmann \(2011\)](#)). In FMM, the



empirical sample is conceptualized as result of several data-generating mechanisms. This allows for viewing the empirical sample as the product of several component models that jointly contribute observations. The model specifications for security dilemmas, elite manipulation and prejudice –models 4 to 6– serve as component models that “generate” the empirical sample. Technically speaking, survey data is viewed as a product of a weighted combination of the three candidate models. Imai and Tingley (2012:221) propose a latent variable notation for an unobserved variable  $Z_i \in \{1, 2, \dots, M\}$  expressing which statistical model most likely generated observation  $i$ . They introduce a likelihood function for estimating  $\pi_m = Pr(Z_i = m)$ , that is the probability that model  $m$  has generated observation  $i$ , given the data.

In this application, FMM can further inform the theoretical debate. I assume that the reviewed theories are not mutually exclusive: respondents can be affected by security concerns, for instance, while being subject to elite messaging simultaneously.<sup>13</sup> In this case, the “relative explanatory power” (Imai and Tingley 2012:221) of each theory is reflected in  $\pi_m$ . Theoretically, the fraction of observations that are in line with the respective model specifications is informative. Although the latent classification can be modeled as a function of covariates, I apply the method most conservatively and limit the application to mapping the empirical spheres of influence inductively. Similar to Weidmann (2011), I rely on the implementation of Leisch (2004) to estimate mixture models.<sup>14</sup>

How do the different specifications perform? In 443 out of 1,101 observations, the security model yields the highest  $\pi_m$  of all three models. The elite model accounts for 193 observations, and the prejudice specification accounts for the largest number of 465. Representing the “Bottom-up” row in Table 1, security concerns and prejudice account

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<sup>13</sup>To underline this point, I have added a model specification with interaction term in Table 8 in the supplementary information. The results corroborate the theoretical point.

<sup>14</sup>Fitting FMM exceeds the steps required for parameter estimation in Generalized Linear Models. Instead of just applying Maximum Likelihood Estimation to obtain  $\beta$  coefficients, the latent classification and model parameters are fitted in alternating steps according to the “Expectation-Maximization” (EM) algorithm. Because updates of the estimated model parameters factor into the association of observations with component models, the EM steps have to be repeated until model convergence is achieved.

for a combined 82% of the sample.

Figure 5 shows the distributions of approval for a stronger stance by most likely component model. As visible at first glance, support for a stronger stance against out-groups is unevenly distributed for the proposed data generating mechanisms. The “security dilemma” specification applies for a sizable subset of respondents. Among those, support for a tougher stance leans slightly toward disagreement, but is generally evenly distributed. The “elite manipulation” specification is associated with higher levels of agreement. A tougher stance resonates much better with these respondents. Finally, the “prejudice” model is associated with overwhelming disagreement with the notion of taking a stronger stance against the out-group. The descriptive analysis of component models provides a plausible interpretation of how the proposed mechanisms coexist: security concerns seem to apply generally in the empirical sample. Both those concerned and not concerned drive the statistical estimates. Elite manipulation theories apply first and foremost to respondents that already support a tougher stance. This is plausible in that reception of aggressive elite messaging can result from self-selection into political activism. In this sense, aggressive leaders and agitated followers find one another. Plausibly, but somewhat surprisingly, prejudice seems to play the opposite role of what is theorized in the literature. Instead of negative personal experiences driving hatred for the out-group, positive experiences seem to undermine group-level hostilities.

As Varshney (2001:363) puts it: “Vigorous associational life, if interethnic, acts as a serious constraint on politicians, even when ethnic polarization is in their political interest. The more the associational networks cut across ethnic boundaries, the harder it is for politicians to polarize communities.” The presented data analysis suggests that such an optimistic outlook on crafting peace from below is justified.

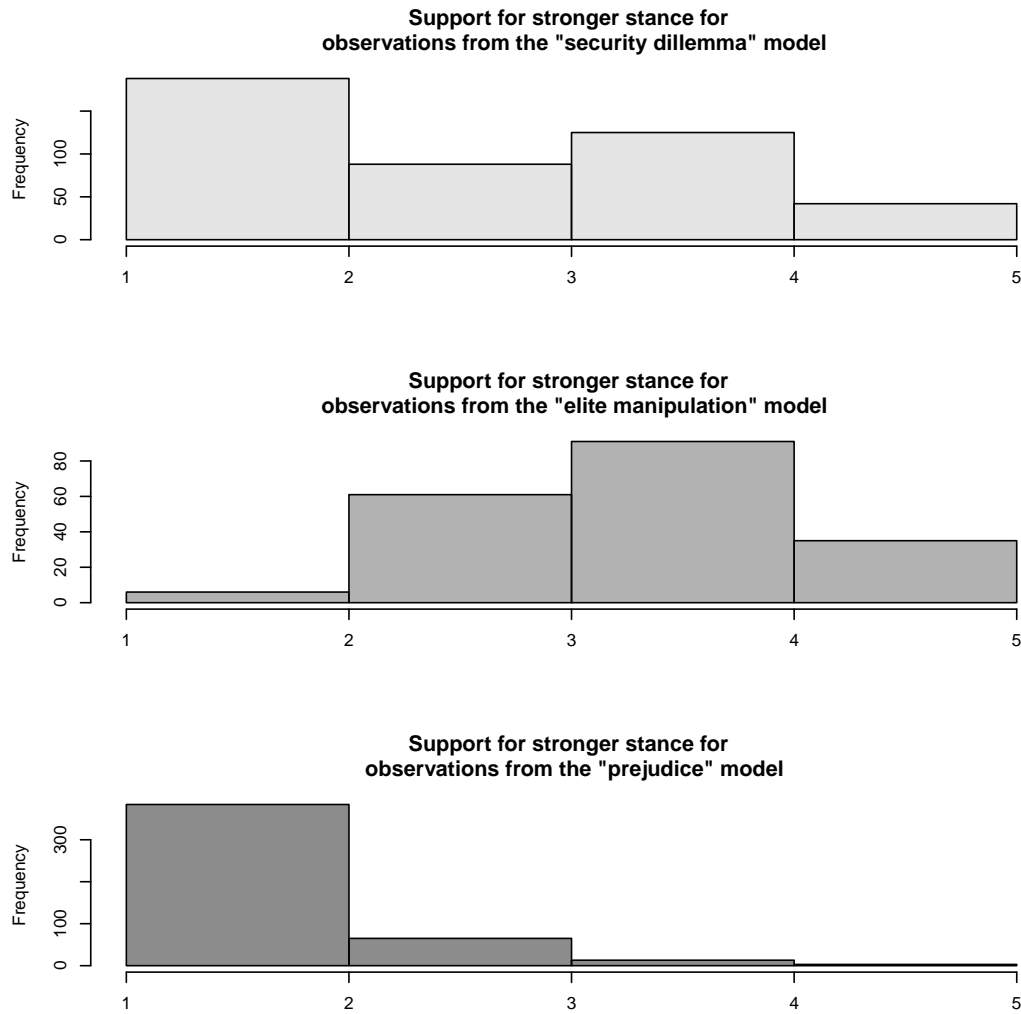


Figure 5: Distributions of support for a stronger stance by component model. Note the different scales resulting from affiliation of observations with the respective specifications.

## Discussion, Conclusion, and Outlook

A wealth of explanations for communal violence has been proposed over decades of research. By applying ordering concepts to the existing literature, I have identified two crucial dimensions along which existing explanations vary: agency and justification. Three prominent theories, security dilemmas, elite manipulation, and prejudice appear orthogonal along those axes.

In an initial step in the data analysis, I showed that respondents come from areas that are affected by Hindu-Muslim riots to varying degrees. Employing regional fixed effects

and post-stratification, I was able to show that there is merit to all three theories. Albeit elite manipulation (hypothesis two) yields significant estimates only for the post-stratified sample, the theory revealed its merits in the subsequent benchmark test: the minority of respondents that supports a “stronger stance” reports higher exposure to elite messaging. Whether this results from self-selection or successful elite broadcasting is impossible to tell with the introduced questionnaire. However, the production of violence as a top-down process features prominently in the literature and receives empirical support from the analysis.

While I have done my best to leverage novel approaches of data acquisition and analysis to the study of religious conflicts in India, some limitations of the research design must be acknowledged.

First and most importantly, the presented research design is currently only applicable to a small set of countries that yield low-level conflicts, high rates of literacy, high-quality census data, and large-scale Internet connectivity. This might change in the 2020s, as several initiatives for bringing broadband connectivity to the entire globe via satellite networks are ongoing.

Additionally, the purely cross-sectional nature of the survey entails limitations for the causal interpretability of the results. Individuals that engage in political or even violent actions against out-group run a higher risk of being targeted in crackdowns and attacks. The presented correlations between past negative experiences and support for a tougher stance should therefore not be read as causal effects.

A further area that leaves room for improvement is the employed questionnaire. To preempt privacy concerns of respondents, the online questions had to strike a balance between conceptual adequacy and ethical feasibility. While practically unavoidable, this compromise leaves room for ambiguity in at least two of the questions. Past forced relocation for political reasons can relate to the 1947 partition of India and Pakistan, but also to much more mundane and more recent events orthogonal to the Hindu-Muslim struggle.

Similarly, personal concerns over “violence in the future by the out-group” plausibly captures fear for personal safety, but it could also be driven by intellectual concerns of the political trajectory of the whole country. In both cases, specificity in wording was sacrificed to the benefit of privacy and ethics.

The paper has been motivated by the goal of reaching beyond observational data on violence and into intergroup attitudes that might or might not lead to communal conflict. Naturally, this also limits the conclusions that can be drawn. Relying on combinations of survey data and conflict event analysis, future studies could evaluate the salience of the presented narratives across attitudes and realized behavior.

Also, unobserved, structural factors can affect the salience of the proposed mechanisms. For instance, security concerns might be most pronounced where trust in local law enforcement is eroded. However, direct questions on trust in law enforcement were deemed to be invasive for the online questionnaire, leaving this concern empirically unaddressed.

Finally, the census-based post-stratification might not fully remedy the selection effects inherent to online sampling: illiterate strata of society remain excluded from the analysis. The relevance of age and gender for participation in political violence has been researched, but richer contextual data on income and residential environment could have been plausibly leveraged for post-stratification as well. In future studies, most of these limitations could be overcome by employing panel surveys and survey experiments in the pursuit of causal explanations.

Bearing these limitations in mind, the presented evidence can be related back to theoretical expectations as the empirical results underline the importance of bottom-up dynamics: individual-level experiences and personal security concerns contribute much to explaining relations with the out-group. This finding underlines the importance of micro-level dynamics in conflicts between groups. Estimates for the control variables for prejudice and in-group cohesion further corroborate this empirical picture. Policies that seek to pacify should take sentiments of individuals into account, as attempts to broker peace from above alone can fall short of swaying groups members. A critical outlook on

early “riot participation studies” is warranted, but omitting civilian agency in theoretical explanations would mean throwing out the baby with the bath water.

Building peace from below has been identified as a viable avenue by prominent scholars. Beyond suggesting a pathway to conflict between groups, [Allport \(1954:241\)](#) also envisioned ways to avoid it: “Prejudice [...] may be reduced by equal status contact between majority and minority groups in the pursuit of common goals”. [Varshney \(2001:374\)](#) seconds this assessment with insights from India: “by promoting communication between members of different religious communities, civic networks often make neighborhood-level peace possible.”

The results presented here support this view: personal fears for the future and past experiences account for much of the observed variance in hostile sentiments. The large-scale rejection of a tougher stance and political violence correlates with positive experiences and a trustful outlook on the future. Moreover, family experiences of relocation due to political reasons are robustly correlated with a non-adversarial outlook on Hindu-Muslim relations. This type of inter-generational learning could contribute to stable peace in the long run.

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