Free Spaces as Organizational Weapons of the Weak: Religious Festivals and Regimental Mutinies in the 1857 Bengal Native Army

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Abstract

Free spaces are arenas insulated from the control of elites in organizations and societies. A basic question is whether they incubate challenges to authority. We suggest that free spaces foster collective empowerment when they assemble large numbers of people, arouse intense emotion, trigger collective identities, and enable individuals to engage in costly collective action. We analyze challenges to authority that invite repression: mutinies of regiments in the East India Company's Bengal Native Army in India in 1857. We take advantage of an exogenous source of variation in the availability of free spaces—religious festivals. We predict that mutinies are most likely to occur at or right after a religious festival and find that the hazard of mutiny declines with time since a festival. We expect community ties to offer alternate avenues of mobilization, such as when regiments were stationed close to the towns and villages from which they were recruited. Moreover, festivals are likely to be more potent instantiations of free spaces when regiments were exposed to an oppositional identity, such as a Christian mission. Yet even free spaces have a limited ability to trigger collective action, such as when the political opportunity structure is adverse and prospective participants are deterred by greater chances of failure. These predictions are supported by analyses of daily event-history data of mutinies in 1857, suggesting that free spaces are an organizational weapon of the weak and not a substitute for dissent.

Keywords: social movements, collective identity, empowerment, organizing protest

In repressive social systems, potential dissenters face an organizational challenge: they can neither frame grievances by broadcasting public messages to whip up emotion and forge a common identity, nor can they organize public outreach to recruit followers. Underground meetings and proselytizing must be on a small scale to avoid detection, but any attempts to overthrow authority from below need large-scale participation to have any chance of success, and in turn, if potential recruits anticipate small numbers joining, they themselves would not join.

In such cases, "free spaces" have been held out as a potential solution. Free spaces are social settings that are insulated from the control of elites in a social system and therefore invite the voluntary participation of the subordinated and ready them for collective action (Evans and Boyte, 1986; Fantasia and Hirsch, 1995). The free-space construct suggests that the cultural practices of the subordinated are proto-political, but they also undermine the divide between tradition and radicalism (Polletta, 1999). Traditional elements such as public rituals, or organizations such as the African-American churches that fuelled the civil rights movement, can serve as free spaces that promote collective action. Scott (1990: 114–115) argued that free spaces provide the subordinated with opportunities to smuggle dissent into the open, to safely vent "the assertion, aggression, and hostility that is thwarted by the on-stage power of the dominant" and hence "serve as a substitute for an act of assertion directly in the face of power." An alternative view is that the subordinated can transpose schemas from free social spaces into new settings and organize overt collective challenges (Fantasia and Hirsch, 1995; Polleta, 1999).

While the literature depicts free spaces as an organizational weapon of the weak, it suffers from two limitations—one theoretical and the other methodological—that supply the motivation for our study. First, the literature on free spaces describes them as small meeting places for a band of

activists who come together to develop common identities and strategies (see Johnston, 2011: 97–135, for a review). Such portraits of free spaces overlook how they provide political opportunities for a large group of individuals and trigger mass mobilization. For example, in Leipzig, East Germany in 1989, the Monday evening peace prayer at 5 [SMALL CAPS:]p.m. in the historic center of the city by the Nikolai Church became a venue for dissenters to congregate and "without leadership and organization" to march into the Karl Marx Square and challenge the regime's right to govern (Oberschall, 1996).

Second, reported research on the role of free spaces as incubators of protest suffers from problems of external and internal validity. The empirical record mainly focuses on free spaces and how they spawn movements directed against the state, yet typically says very little about free spaces available to the subordinated in hierarchies, with a few exceptions (e.g., Kellogg, 2009). Moreover, most studies of free spaces in organizing collective action are rich accounts of successful mobilization, without examining failed cases, and, in some of them it is hard to claim that free spaces were a cause of mobilization rather than being a consequence. For example, it could be argued that lesbian feminist communities (Taylor and Whittier, 1992), while acting as abeyance structures, were consequences of mobilization and movement-sustenance efforts rather than the cause. Furthermore, it is unclear if it is free spaces themselves that triggered protest or whether they attracted a particular kind of activist. An ideal experiment for testing the causal role of free spaces would be to have them assigned randomly (in space and/or time) to social groups and then evaluate whether they lead to large-scale mobilization. Such an experiment being infeasible in the real world, the next best alternative is to allow for exogenous variation in the availability of free spaces to the subordinated to discern if they ignite protest. We pursue this option in our paper.

We study an extreme setting for collective action: mutiny, or the overthrow of authority in a hierarchical organization. The setting is extreme in that collective disobedience in armies is taboo, and opportunities for subversive mobilization are few (e.g., Rose, 1982). In an early *ASQ* article on mutinies, Lammers (1969: 528) observed that in "modern organizational theory, the conflict between rulers and ruled has not been extensively studied." Four decades later, his lament rings true, even though mutinies in armies are precursors of wider political challenges to the status quo. For example, of the 750 attempted coups against governments that occurred between 1946 and 2010 in countries ranging from Algeria to Zimbabwe, a significant fraction were triggered by the rebellions of lower-level soldiers against lawful authorities (INSCR database, 2011). Even though mutinies have been likened to movements (Lammers, 2003), there has been little systematic study of how mutineers overcome collective action problems.

Empirically, we analyze the rate of mutiny in the East India Company's Bengal Native Army regiments in 1857.[1] Given the administration's monopoly on the post and telegraph, and a large network of informants and local bureaucrats, how did soldiers in some regiments mobilize on a large scale? Officers, from ensign to general, were British, and the soldiers were predominantly Hindu or Muslim. Although soldiers nursed a number of grievances, we argue that religious festivals were the free spaces that lit the fire of mutiny. Religious festivals involving public rituals such as processions and community gatherings assembled people, primed emotions of anger and pride, fostered a sense of shared identity, and created a sense of empowerment for collective disobedience to occur at the regimental level.

Our empirical setting provides a quasi-experimental "treatment" that allows us to determine if free

[1] Our study benefited from the advice of two period historians who specialize in the study of the Indian military labor market: Seema Alavi of Delhi University and Dirk Kolff of Leiden University.

spaces do in fact cause mobilization. To begin with, 142 of the 208 regiments mutinied, but 66 others did not, and different regiments mutinied at different times, so there is variation in the dependent variable. Second, because the dates of Hindu and Muslim festivals were based on the position of the sun and the moon, these instantiations of free spaces were determined well before mobilization began, and reverse-causality can be ruled out. Thirdly, data on regimental attributes (e.g., wage levels, battle honors, demographics) and the underlying propensities of regiments (based on the local environment) are uncorrelated with the dates of the festivals themselves. Hence if regiments engage in collective mutiny at or just after a festival rather than before one, it would constitute evidence that free spaces indeed enable mobilization for collective action in organizations.

FREE SPACES AS ORGANIZATIONAL WEAPONS OF THE WEAK

Evans and Boyte (1986: 17) defined free spaces as "settings between private lives and large-scale institutions where ordinary citizens can act with dignity, independence and vision." As spatial and temporal havens, free spaces have two characteristics. First, they can be any social setting insulated from the control of the elites and thereby allow the subordinated to question the status quo. Therefore, at the most basic level, they are meeting places where communication occurs without deference to the power of elites (Fantasia and Hirsch, 1995: 146). Second, they involve direct, interpersonal interactions in the presence of several others, but distinct from interactions of daily work. These can be embodied in physical space (Evans and Boyte, 1986) or in cyberspace (Gamson, 1996) and can take the form of a wide range of associations, such as public rituals, taverns, block clubs, cooperatives, and communes. Do free spaces trigger collective action against the status quo?

One view is that free spaces offer an alternative to overt organizing in defiance of authority. Thus, Scott (1990) contrasted public transcripts—the public narratives deferent to those in power—with

hidden transcripts or a private discourse critical of those in power. He argued that in between these two worlds is an intermediate realm of discourse that unfolds publicly but shields individuals because it is anonymous and disguised. If gossip consists of stories designed to ruin the reputation of specific individuals and occurs among relative equals, rumors are directed against a particular group, but both are ephemeral expressions of sedition that have marginal lives (Scott, 1990: 157). Public rituals, such as carnivals or religious festivals, stand out as they allow the subordinated to smuggle insubordination into the public without the threat of immediate suppression because

> by the subtle use of codes, one can insinuate into a ritual . . . meanings that are intended for one audience, and opaque to another audience the authors wish to exclude. Alternatively, the excluded audience may grasp the seditious message in the performance but may find it difficult to respond because the sedition is clothed in terms that can lay claim to a perfectly innocent construction. (Scott, 1990: 158)

A concurrent view is that free spaces enable mobilization by offering an alternative organizational infrastructure. Free spaces are not just associations, but instead embody schemas and routines that can be transposed into other settings and therefore can create political opportunities even when none might objectively exist (Fantasia and Hirsch, 1995; Polletta, 1999). The literature on free spaces typically equates this effect to activists being allowed to come out and share their concerns and mobilize like-minded people for a cause. We extend this line of reasoning by arguing that free spaces not only empower individuals to act on their shared grievances, but also enable the subordinated to become aware of a shared willingness to engage in costly action and help build commitment for oppositional mobilization.

From Shared Grievances to Collective Empowerment

Tullock (1971) pointed out that the paradox of rebellion is that it would be rational for every individual to be inactive. He argued that rebellions are large-scale phenomena wherein the typical individual's contribution to the success of a rebellion is insignificant. Additionally, given the slim chances of success, the expected value of the collective benefit accruing to the individual is close to zero; so if one disregards the psychological benefits an individual derives from the process, all that the individual is left with are the costs of action, and so it is rational for individuals to free-ride.

How then is the free rider problem overcome? Coleman (1968) noted how a shared grievance in a group of individuals does not necessarily imply that there will be collective action. There must not only be an awareness of everyone in the group facing a similar problem, but also the additional awareness that the shared problem can be solved by joint action, and such joint action is actually possible. Prospective participants face uncertainty about the participation of others because individuals who dislike a regime may hide their desire to mount a challenge as long as opposition to an existing regime appears to be weak, and so the disjuncture between private intention and what is publicly stated inhibits action (e.g., Kuran, 1989). To violate the taboo of mutiny in armies, soldiers therefore require not only shared grievances but also knowledge of others' willingness to break the taboo of mutiny (instead of just complaining through the usual channels), to seek restitution for those grievances. Chwe (2001: 10–12) summarized such a problem of common knowledge succinctly:

> Because each individual wants to participate only if others do, each person must also know that others received a message. For that matter, because each person knows that other people need to be confident that others will participate, each person must know that other people know that other

> people have received a message, and so forth.

For such confidence to emerge, Goldstone (2001) observed that group identity and solidarity need to overcome free-riding problems. Drury and Reicher (1999) reported that participants in a demonstration against a tax initially saw themselves as unconnected circles of acquaintances. It was only when they were excluded from the council meeting and experienced a common fate, that they shared a sense of identity and unity, felt increased support from the others, and experienced a greater sense of empowerment that allowed them to take bold actions. In an account of student protests of May 1968 in France, Gregoire and Perlman (1969: 37–41) elucidated the process of empowerment as follows:

> The occupants of Censier [near the Sorbonne] suddenly cease to be unconscious, passive objects shaped by particular combinations of social forces; they become conscious, active subjects who begin to shape their own social activity . . . people who have never expressed ideas before, who have never spoken in front of professors and students, become confident in their ability.

Drury and Reicher (2005) provided a cogent account of empowerment as a radicalization of the collective self. Illegitimate actions by dominant actors, a shared identification among the subordinated, and mutual expectations of support lead to what appears as an emotional contagion of pride or anger. In their discussion of protests, Drury and Reicher (2005: 46) reported how participants felt that the actions of individuals sent "a wave of kind of empowerment through a lot of people, including protesters . . . a lot of people suddenly realized that—they could actually take some responsibility for what was going on and actually take control." Thus collective efficacy or the belief in the conjoint capability of action (e.g., Sampson et al., 2005) is the outcome of not just the

existence of grievances but emotional empowerment that all members will act and support each other.

Collective Empowerment in Free Spaces

Much of the discussion on free spaces has depicted them as havens for small bands of activists to develop a sense of unity and a new definition of reality that allow them to recruit followers. Evans and Boyte (1986: 192) stated that: "From the Hicksite Quakers and female abolition networks to benevolent societies in Richmond's African-American community or the large scale associations in Steelton which laid the groundwork for the steelworkers unionization, such associations create a consciousness that many people can act together." While small organizations such as black churches or informal clubs may serve as wellsprings of collective action, large gatherings also play a critical role as free spaces. Thus Marchi (2005) noted how Day of the Dead processions and altars have often emerged as mobilization tools for immigrants' rights activists pushing for change in U.S. border patrol policies. These events allowed for "the tremendous moral . . . power of the unquiet dead to flow into the public sphere, empower individuals, and challenge the would-be guardians of the nation state . . . of its meaning and of its destiny" (Taussig, 1990: 219–220).

Free spaces are also liminal, to varying degrees. Turner (1986: 42) proposed that liminality resides in marginal social spaces outside of everyday constraints, which liberate participants from routine activity. He defined liminality as "a fructile chaos, a storehouse of possibilities." Interstitial social spaces such as religious festivals create communitas and provide occasions for the legitimate performance of illicit behavior (inversion) by the "structurally inferior," which includes derision and challenge of the "structurally superior" and which may be accompanied by role reversals (cf. Bakhtin, 1968). Davis (1975: 155–164) in her account of religious violence in France suggested that

such riots were clustered around processional life, wherein crowds are prompted by religious traditions that legitimize and prescribe violence, and violence is not random and limitless but is aimed at defined targets. The crowd acts out roles: clerical roles, concerned with defense of true doctrine through dramatic challenge and destruction of polluting elements, and magisterial roles, such as trials, executions, and seizure of property. It may well be that prison riots feature preexisting leaders who use weakly liminal free spaces such as a time-out (e.g., exercise hours in the prison yard) for coordination purposes. By contrast, we focus on free spaces that involve large gatherings of people and are more liminal than the small bands of activists congregating in informal enclaves within a hierarchy, or in small organizations outside hierarchies (e.g., Kellogg, 2009).

Free spaces assemble people and empower collectives for often-risky action. The sheer assembly of people provides social proof of the willingness of others to participate in the protest. Identity threats gain traction when individuals hear from many different individuals (Heath, Bell, and Sternberg, 2001), and in turn, exposure to several sources of information leads to high-risk activism (McAdam, Tarrow, and Tilly, 2001).

By bringing people together, free spaces also center the attention of individuals on their shared identity. For example, Durkheim (1915: 348–349) argued that religious festivals ensure that the thoughts of individuals are "centered upon their common beliefs, their common traditions, the memory of their ancestors, the collective idea of which they are the incarnation; in a word, upon social things." Large gatherings and processions in festivals are liminal spaces that allow for communication of voices and meanings that challenge existing interpretations of hierarchy, justice, and convention (e.g., Davis, 1975; Turner, 1979). These communications are not necessarily individual enactments, instead, they allow for what Turner (1979: 465) called plural reflection, or

ways in which a group communicates dissent within itself, to itself, through "gestures, music, dancing, graphic representation, painting, sculpture, and the fashioning of symbolic objects." In this way, large gatherings and festivals allow not only for the emotional nudge to consider previously unthought-of courses of action, such as organizing against powerful authorities, but also for the communication of these intentions within the social group through verbal and nonverbal gestures, expressions, postures, and movements that are evocative to the in-group and trigger emotional contagion (e.g., Hatfield, Cacioppo, and Rapson, 1993: 5). When solidarity is instantiated and celebrated, vocal and physical cues in a large assembly of people also provide feedback and trigger imitation. By priming emotion and triggering emotional contagion, public rituals make distant identities very real and very proximal. Students of collective identity recognize that identities are nested within each other and conclude that "higher-order" identities such as religion are less salient than "lower-order" identities such as that of the soldier (see Ashforth, 2001). Higher-order identities such as religion are inclusive rather than exclusive, abstract rather than concrete, distant rather than proximate. Free spaces, especially public rituals such as religious festivals or carnivals render these distal extra-organizational identities more proximal, accessible, and salient: solidarity is enacted through the dense assembly of people, a boundary that separates insiders from outsiders, a mutual focus of attention on a common symbol or activity, and a common mood or emotional shared experience (Durkheim, 1915; Collins, 2004: 48).

Shared grievances might create a risk set of individuals who can join collective action, but liminal free spaces precipitate the sense of shared identity, expectations of mutual support, and a wave of emotional empowerment that leads to collective efficacy and thereby, collective challenges to authority by the subordinated.

The Empirical Setting and Hypotheses

The mutinies of locally raised regiments in mid-nineteenth-century India, and the subsequent wider uprising of 1857, were watershed events in Indian history. Karl Marx and Frederick Engels contributed several articles to the *New York Daily Tribune* seeing the mutinies as the coming of a revolution, as the accomplices to British conquest turned on their masters (e.g., Marx, 1857). Nationalist historians extolled it as the First War of Independence (Savarkar, 1909); later writers belonging to the subaltern school inspired by the work of E. P. Thompson described the mutinies as a manifestation of peasant insurgency (Stokes, 1978; Guha, 1999), and others labeled it as a clash of religions (Dalrymple, 2007) and civilizations (Malik, 2008). Irrespective of the label used to describe the mutiny and its wider consequences, what is indisputable is the cruelty on both sides and loss of life.

The East India Company's Bengal Native Army. The British entered India as traders in 1600 with the chartering of the East India Company by Queen Elizabeth I. The Company quickly developed a military presence; the Battle of Plassey in 1757 saw the defeat of the ruler of Bengal and the rise of Company rule in India (Stern, 2008; by "Company" we mean the East India Company). It swiftly expanded its rule by conquest of neighboring kingdoms, and by 1857, the Governor-General of India oversaw directly or indirectly the administration of most of the subcontinent. Since 1757, these campaigns had been fought by a large army of predominantly locally raised regiments. For example, the standing army of the East India Company in Bengal in early 1857 comprised approximately 40,000 British troops and four times as many native soldiers. In contrast to the difficulties in recruiting British troops to serve in India (e.g., Gilbert, 1975: 92), it was much easier to recruit local troops to the Company's army. On occasion, entire regiments of up to a thousand men could be recruited from a small geographic area, owing to the competitive pay (Heathcote, 1974:

111) and lower demand in the local military labor market due to the cessation of fighting between princes as territories increasingly came under direct or indirect rule of the Company (see Kolff, 1990).

The recruitment of native soldiers was based on regions and districts inhabited by the so-called "martial races" (e.g., Singh, 1976: 157). Three-fourths of the infantry were high-caste Hindus, and one-fourth was composed of low-caste Hindus and Muslims; the majority were Brahmins and Kshatriyas. These high-caste recruits to the infantry were farmers' sons and carried their own utensils for cooking and drinking water to maintain religious rituals. In turn, dietary practices helped sustain social boundaries (Alavi, 1995: 76; also see Peers, 1995). Insofar as the cavalry was concerned, the Company sought to attract to its regular regiments Afghans and Rohillas who were men of resources (Alavi, 1995: 195). Every recruit was required to pay an entry fee, was expected to buy his own horse, and occasionally received small loans. Additionally, the Company also relied on officers like Captain Thomas Rattray and James Skinner to recruit irregular cavalry and to exploit areas near Delhi as a military labor market for the Jat, Rohilla, and Pathan aspirants. As Alavi (1995: 262) observed, the cavalry became based on the elite Ashraf Muslim class, just as the infantry were based on caste-conscious Hindus.

Overall, among the 208 regiments of the Bengal Native Army, Hindus accounted for 71.2 percent of the native soldiers, Muslims constituted 27 percent, and other local religious groups (Buddhists, Jains, Sikhs, Parsees, and Christians) were in a minority, broadly reflecting the demographics of the Bengal presidency. All regiments were led by British (or European) officers, and the only officer ranks open to native troops were the non-commissioned, or junior-commissioned ranks, so that any native soldiers irrespective of their progress, could never outrank a lieutenant (for details, see

Saxena, 1974: 204–205). These native troops, however, caused fewer disciplinary violations than their British counterparts (Hough, 1855; also see Stanley, 1998).

Threats to religious practice and identity. The policies of Lord Dalhousie, the Governor-General, and his successor, Lord Canning, led to dissatisfaction among native soldiers (David, 2001). Dalhousie initiated the Doctrine of Lapse in 1856, wherein any kingdom without a legal heir would pass on to the British, and adoptions by rulers was forbidden. He annexed the (vassal) Kingdom of Oudh; a sizable number of troops were from Oudh and perceived the annexation to be illegitimate. Canning passed a law that permitted the remarriage of Hindu widows and issued other regulations for native soldiers that were seen as affronts to religious custom, raising the ire of Hindu troops concerned about the threat to their religion. Additionally, new rules stated that soldiers declared unfit for foreign service could no longer qualify for pensions. It was in this context that the East India Company planned to introduce the new Enfield Rifle to regiments of the Bengal Native Army. Soon rumors began to circulate that the new cartridges were greased with pig fat and beef tallow.[2] Holmes (1904: 80–82) described the onset of the rumor as follows:

> One day in January, 1857, a *lascar* attached to the magazine at Dum-Dum, near Calcutta asked a *sepoy* of the garrison to give him a drink of water from his *lotah*.[3] Nettled by his reply that the vessel would be contaminated by the lips of a low-caste man, the *lascar* retorted that the *sepoy* would lose his caste altogether, for the government was manufacturing cartridges greased with the fat of cows or swine and the *sepoy* would have to bite the forbidden substance before loading. . . . For him to be told that

[2] Our risk set consists of locally raised regiments of the Bengal Army, which were the only local regiments in which the new rifles and cartridges were to be introduced. We also don't include the British troops in our study, because they were unaffected by the religious taboos on contact with cows and pigs that triggered identity-related threats to the Company's Hindu and Muslim troops.

[3] A *lascar* was a (non-serving) militiaman/sailor/worker, employed by the British. *Lascars* were usually recruited from the lower social strata, while *sepoys* came predominantly from the higher social strata of both Hindu and Muslim society. A *lotah* was a small spherical tumbler of copper or brass meant to hold water.

> that he was to touch with his lips the fat of the cow was as appalling as it would have been to a medieval Catholic to listen to the sentence of excommunication. . . . The terrified Brahmin rushed to tell his colleagues, and from them the report flew in all directions with lightning like rapidity.

John Lawrence, a leading commander who played a central role in subduing the insurrections in the Bengal Army wrote that the greased cartridge was the chief culprit. Yet there was an initial wave of mutinies, which administrators called "disturbances" to downplay the early acts of violence as being endemic to particular regiments (e.g., see communications and trial proceedings in Forrest, 1893, vol. 1: 1-28), then two months of relative inaction, and then a wave of mutinies. How did soldiers manage to mobilize against their superiors to such devastating effect, given the Company's control of the post and telegraph, the existence of several caste/sectarian/religious divides among the soldiers, and the great penalties to collective action?

Below, we suggest that mere receipt of the rumor was not enough to trigger protest in a regiment. We propose that regiments were more likely to mutiny after receiving the rumor when there was a religious festival involving communal gatherings, processions, and public rituals which provided free spaces that led to mobilization. While one might think that soldiers had opportunities to talk to each other during meals, in reality, each soldier carried his own utensils, bought cooking supplies, and cooked his own food to preserve caste and religious boundaries (e.g., Asiatic Journal, 1827: 130; Alavi, 1995). Similarly, occasions for expressing individual piety, such as ritual fasting and periods of dietary exclusion (e.g., *ekadashis* for Hindus), while emotional episodes, would fail to trigger the communicative processes possible in festival gatherings. Festivals involving communal gatherings allowed for the communication of dissent outside the boundaries of the regimental organization, under a shared frame in which different sects and castes could come together in the celebration of a

shared identity, and provided the solidary incentives that enhanced commitment to overturning the status quo in the face of staggering odds.

Religious festivals as free spaces for soldiers. The British East India Company typically followed a policy of not interfering with soldiers' religious lives and permitted regiments to celebrate traditional festivals and participate in religious rituals, gatherings, and processions (Alavi, 1995: 74–75; Streets, 2004: 26).

[Insert Figures 1 and 2 about Here]

Several religious festivals in India are large public affairs, involving communal gatherings, processions and public rituals. Figure 1 for example, is a photographic image from 1880 of the Muharram procession in Baroda (Vadodara) in western India. Muharram denotes the start of the holy month of Muharram and is predominantly celebrated by members of the Shiite sect of Islam. It's a festival mourning the slaying of Imam Hussain (Prophet Mohammed's grandson) at the hands of the troops of the Umayyad Caliph at Karbala in AD 680 (on the tenth day of Muharram, Hijri 61). The public rituals involve processions, frenzied acts of religious mourning such as chest-beating and sobbing, and so on, all in public view, prior to the "majlis" gathering itself (e.g., see Jones, 2012: 73–113). Special gatherings ("majlis") are called, which are held preferably in spaces larger than a mosque, such as an "imambara," providing a gathering place for many people to share in the public rituals. Such festivals often broke down sectarian boundaries in colonial India. For example, Schimmel (1980: 120) noted how celebrations of Muharram were large public displays of piety, which in earlier times were not restricted to Shiites but were also celebrated in Sunni families in the Punjab and the Gangetic plains. Furthermore, Schimmel (1980: 120) noted that "in some provinces the Muharram procession changed into almost a kind of carnival, and Hindus participated in the

happenings . . ." (also see Pandey, 1990: 131, n. 34), including the (heretical) worship of the alam or sacred flag by lower-caste Hindus in Bihar (in eastern India). The atmosphere was of mourning and was often charged with emotion, so riots were commonplace in the first ten days, during which floats of miniature tombs ("taziyas") were carried in the procession (for details on this and other Islamic festivals in colonial India, see Jafar, 1975).

Similarly Hindu festivals such as Holi and Dusshera/Ramleela, illustrated in figure 2, involve communal gatherings and evocative public rituals.[4] Holi is a spring festival involving large gatherings of people on the streets and open spaces; people throw colors on each other, breaking the barriers of age, gender, economic status, and caste. Bhang, a milk-infused beverage made from the cannabis plant is typically consumed by adults at the end of the day. Celebrated on the last full moon day of the lunar month of "phalguna" (February/March), it constitutes a celebration of the miracle of a boy-devotee ("Prahalad") being saved from fire by Lord Vishnu, the Hindu god of creation. Dusshera/Ramleela involves the celebration of the mythological king Rama defeating the ten-headed demon Ravana. People in neighborhoods gather together in open spaces and eat sweets, burst fireworks, and set ablaze a larger-than-life straw figure of Ravana, symbolizing the victory of good over evil. Figure 2 is a print by James Prinsep showing the Ramleela being celebrated in 1834. Pollock (1993) noted how the Ramleela festival became an ever-widening site for public gathering and communication, often political and sometimes subversive to the British authorities. Harvest festivals, such as Baisakhi, which are celebrated under different names across the subcontinent similarly, involved rites, rituals, public gatherings, and sometimes folk-singing and dancing, all celebrating transitions in the annual harvest cycle (e.g., see Guha, 1999: 35).

[4] For more recent descriptions, see Mukundcharandas (2005).

In the earlier part of the nineteenth century, British officials and soldiers were often invited to and participated in these celebrations. For example, John Chips, the Company's Auditor-General, organized a celebration of the worship of Goddess Durga at his office in eastern India. In 1840, however, a law enacted by the British government forbade such participation by Company officials (Chaudhuri, 1991: 25). In later years, the Company came to represent the undisputed hegemon of the subcontinent's political landscape, and the Company's administrators certainly came to have apprehensions about the free celebration of festivals (e.g., see Bayly, 1996: 206–207; also Freitag, 1989b: 19–52). Yet attempts at suppression were likely to be seen as further affronts to religion in an already politically charged environment. The Company strove to take the middle ground between laissez faire and explicit cultural control by having informants report on the various seditious activities that might be going on in public gatherings. Even so, this information-gathering process perhaps did not work as well as the administration hoped, given the large numbers typically assembled at these gatherings and the dual loyalties of informants to the Company and to their religious brethren (e.g., Bayly, 1993, 1996: 207).

Religious festivals and collective empowerment. Religious festivals were occasions during which soldiers of diverse castes who shared a religion (in the case of Hindus) or of different sects (in the case of Muslims) came together. In the Bengal Army in 1857, as Alavi (1995: 75) observed, although British officers had the formal authority to regulate religious festivals in the cantonment, in practice they permitted the celebration of festivals, seeing it as a necessary cultural adaptation to respect the sentiments of native troops. On some occasions, soldiers were allowed to fire their muskets in the air in celebration. Soldiers made voluntary contributions of money for festivals such as the Ramlila, celebrating the legend of the Ramayana, or Holi (Alavi, 1995). Illustrating the mobilizing power of religious festivals, historians have studied how religious festivals such as Dusshera/Ramleela were

concurrent with several disturbances challenging British rule between 1800 and 1856 (e.g., Heitler, 1972; Farooqui, 1998).

Religious festivals in India in 1857 were a public form of discourse that allowed for ideological insubordination (e.g., Freitag, 1989b; Pollock, 1993). Freitag (1989a: xi–xii) argued that the religious festival in India involved processions, "crowds, rites, music, and swordplay, sacred space and sacred time" and "became an alternative world to that structured by the imperial regime, providing legitimacy and recognition to a range of actors and values denied a place in the imperial order." Media such as homilies, songs, dance, and theatrical performances were also prevalent as tools of satire and subversion in 1857 (Crooke, 1911; see also Joshi, 1957), and festivals provided a perfect site for these transcripts of the oppressed to come out in the open, in a religious idiom and in the presence of several others (Bayly, 1996: 207–210). For example, the mutiny of the 3rd Light Cavalry in Meerut on May 10 coincided with one of the holiest days of Ramadan. Wagner (2010: 143) noted that

> any perceived infringement or attack on their religion would almost certainly result in an intensely violent response. . . . The rallying cries were Shia in character and would normally have accompanied the procession at Muharram. . . . Religious festivals and processions were particularly sensitive times, and there was a fine line between religious processions and riots, which sometimes spilled over into one another. The outbreak at Meerut constituted a powerful rejection of colonial rule, but because the British were seen as Christian, it assumed the form of a sectarian riot. The Government by its actions was seen as subverting Hindu and Muslim faiths; anti-British sentiments were expressed through the use of religious idioms.

Several other anecdotes in colonial India point to the role of festivals in empowering aggrieved

social groups through symbolic performances that converged on festival gatherings. For example, protest against caste inequities was coded in folk ballads such as Punjabi "jhaggra" or "jhannau," which follows broadly a stereotyped series of arguments between a higher-caste Khatri woman and a lower-caste Jat woman, challenging existing notions of the rationale behind a caste hierarchy (Johal, 1984). Entertainers such as puppeteers, theatrical actors, jugglers, and musicians often converged on festival gatherings to make money off their trade, while bringing with them stories and performances that conveyed political satire and treasonous ideas couched in humor (Bayly 1996: 208–209). The themes for these performances and utterances in festival gatherings were often derived from traditional Sanskrit plays, the traditional laments of Shia martyrs, or even local secular folklore, and blended with contemporary references, such as mimicry of British court proceedings (e.g., criminal trials, courts martial, and trials for treason), and ballads of local heroes who opposed hegemons such as the Mughals and the British (e.g., the Jats of Bharatpur, Nawab Wazir Ali of Benares), and so on.

Festivals also manifested and reinforced social and moral solidarity. The Hindu calendar is lunisolar and the Islamic calendar is lunar, so Hindu and Muslim festivals sometimes coincide, or one leads the other by very short durations. Also, Muslim rulers, as Freitag (1989a) noted, participated in and endorsed Hindu festivals such as Holi and Diwali in pre-1857 India. Thus it is also likely that religious festivals reminded Hindu and Muslim troops of their common foe—the Company—which, as rumor had it, was trying to take away their religion by supplying them with the greased cartridges. Mukherjee (2002: 67) cited a Hindu soldier who emphasized the fraternal comity among all troops by saying "All black men are one. It is a matter of religion. Why should we lose our religion?" Mukherjee (2002: 153) considered it remarkable that when Muslim leaders such as the (nominal) Mughal Emperor issued proclamations, "no divisive issues were invoked. The rebellion was seen as a war in which both Hindus and Muslims had a lot to gain or lose. . . . The prevalent spirit of

harmony was expressed most convincingly when the rebels hailed the young Muslim prince Birjis Qadr as Lord Krishna." So when the regiments at Lucknow mutinied four days after Eid-ul-fitr[5]—the recently recruited irregulars mutinied with the long-serving regulars, the Hindu infantry mutinied along with the Muslim cavalry, and even regiments recruited from towns 600 miles apart, differing in language and culture, mutinied together—local officials were taken by surprise, in spite of warning signs. For example, a few days after the Eid-ul-fitr festival at Lucknow, the system of buying goods on credit froze in the city (Rizvi and Bhargava, 1957, vol. 2: 8). Shopkeepers refused to give credit to local administrators and their servants and attendants. In spite of these portents of coming unrest, it seemed scarcely believable to local officials that sepoys would overcome their religious, linguistic, and pay differences to rise in mutiny.

Religion is multimodal, instantiated in sight, sound, smell, and even touch. Religious festivals are rich with symbols and enable individuals to experience all these modalities of a religious identity, both in terms of similarity and difference. Schelling (1960: 90) suggested that public events, such as processions and other ceremonies involved in religious festivals, provide a substitute for overt communication and leadership and trigger mobilization. We suggest that these festivals were free spaces that provided both emotional empowerment and sites for the emergence of collective efficacy in violating the taboo of mutiny, to challenge the status quo in the face of staggering odds of failure.

> **Hypothesis 1 (H1):** Regiments are more likely to mutiny at or after the observance of a religious festival, so the rate of mutiny declines as the time elapsed since a festival increases.

[5] May 26, 1857 was the date of Eid-ur-fitr in Lucknow. Eid-ul-fitr denotes the end of the Muslim holy month of Ramadan, when people assemble in a large Jama'at gathering after which there are processions, feasts, and visits to the bazaar.

Community ties as mobilization mechanisms. Calhoun (1980: 111) noted that "communities give people the 'interests' for which they will risk their lives—family, friends . . . , and ways of life." If religious festivals are free spaces that trigger oppositional mobilization, their effect might also be influenced by the strength of ties to the local community. A fast-growing body of research suggests that collective identity and solidarity is sustained through community ties (McAdam and Boudet, 2011). Bearman (1991) found that the Confederate army was a collection of local militias: each company was organized within one county, and soldiers volunteered to serve with their kith and kin. His study of desertion showed that the Confederacy crumbled because the old localisms nurtured through these neighborhood ties emerged as the basis for identity and undermined the Southern identity that originally induced men to go to war. In his study of insurgency in the Paris Commune in 1871, Gould (1991) reported that organizational and informal ties together underlay identity and mobilization of the Paris National Guard: units were organized along neighborhood lines (the only exceptions were 35 volunteer battalions); this policy of recruitment meant that members of each battalion were not only coworkers but also neighbors linked in an organizational network. In general, the insurgents in the neighborhood-based units were arrested at a later stage of combat, thereby suggesting they were more cohesive. Hence, neighborhood social ties provide both the identity and the solidarity necessary for collective action. To some extent, community ties themselves may be considered a complementary source of indigenous free spaces available to rebels (Polletta, 1999).

Recruitment in the Bengal Native Army was voluntary (Barat, 1962: 128), and each regiment was typically recruited almost entirely from a particular district, town, or a set of villages. Recruitment drives were regiment-specific, wherein a senior officer and an adjutant would be sent to raise an army from a district or town well known for supplying good soldiers (e.g., see Cardew, 1903: 461–

496; Barat, 1962: 1–52, 118–186). As a result, the composition of a regiment reflected the particular district, town, or villages from which the entire regiment was recruited. Instead of using direct recruitment to replenish losses to battle and old age, the Company's policy of recruitment by referral through village and family connections reinforced the parochialism of these regiments (e.g., Barat, 1962: 127; Heathcote, 1974: 95; Streets, 2004: 26). Existing native soldiers were asked to bring back suitable candidates from their villages when they went on leave, giving each regiment a distinctly local character and reproducing the solidarity of coming from the same district, town, or villages. Each of the regiments therefore had ties with a particular district or town from which they were recruited.[6]

The closer an infantry or cavalry regiment was stationed to the towns and villages from which the men were recruited, the greater was their interaction with civilian kith and kin. Consequently we expect kinship networks and neighborhood ties to become additional means of mobilization when regiments were stationed close to their place of recruitment. When soldiers were located far from their place of recruitment, religious festivals were likely the only opportunities available to organize for collective action. Hence,

> **Hypothesis 2a (H2a):** As the time elapsed since a festival declines, the hazard of mutiny rises at a faster rate for regiments located far away from their place of recruitment than for regiments located close to their place of recruitment.

Alternatively, it is also possible that closeness to home communities enhanced regiments' Hindu or Muslim identities. If festival gatherings were purely emotional episodes, one would expect the

[6] The British needed to station troops in the Gangetic plains to thwart power grabs by princes and vassals and also place them at the borders of Afghanistan and Persia to the west and the Arakan Peninsula to the east. Deployment seems to have been driven purely by strategic requirements, without consideration for keeping regiments either systematically close or far away from their place of recruitment.

emotional empowerment to be greater when soldiers were closer to their places of recruitment. Malleson (1858: 7), while decidedly biased in perspective, noted how the same sepoys that seemed to be the finest obedient soldiers in faraway garrisons such as Afghanistan, became what he called "bigoted, relentless Brahmin[s]" when they were stationed close to their place of recruitment. This provides a competing hypothesis that closeness to the place of recruitment, instead of being an alternate avenue of fostering knowledge of others' participation, actually primed religious and caste identities, rendering the festival celebrations more emotional episodes. Hence,

> **Hypothesis 2b (H2b):** As the time elapsed since a festival declines, the hazard of mutiny rises at a faster rate for regiments located closer to their place of recruitment than for regiments located far away from their place of recruitment.

Oppositional symbols and free spaces. The impact of religious festivals is also likely to be augmented by the presence of oppositional symbols that condense a master frame into a symbol. Benford and Snow (2000) observed that the presence of antagonists is essential for articulating grievances, arousing emotion, and mobilizing identity for collective action. For example, craft brewers, committed to artisanal techniques and a small scale, mobilized in response to contract brewers who were not brewing beer on the premises and lambasted them as impostors (Carroll and Swaminathan, 2000). Similarly, low-power FM radio activists were able to mobilize when the concentration of ownership of radio stations by chains increased (Greve, Posner, and Rao, 2006). In the context of the Bengal Army, the presence of Christian missions championing Christianity would have activated the Hindu and Muslim identities of soldiers. The missions were infused with evangelical zeal, inveighed against traditional customs, actively sought to convert people, and violated the tenets of Hindus and Muslims. Often, they took the sermons of Christianity into the

streets, preached in public places, organized religious debates, and proclaimed victory.[7] Contemporary Indian intellectuals also voiced the religious discontent during the period in pamphlets, personal communications, vernacular newspapers, and book-length manuscripts (e.g., Khan, 1873; also see materials translated from the vernacular in the compendium by Rizvi and Bhargava, 1957).

A number of modern writers have depicted Christian evangelism as an element of British imperialism. For example, Panikkar (1959) suggested that evangelism was an effort to impose spiritual dominion and buttress political authority. Other scholars such as Porter (2004) and Stanley (2001: 45–70) questioned whether the relationship between religion and empire was so collaborative, suggesting instead that it was more troubled and contentious. On the one hand, the East India Company spent money to support local religious festivals, while on the other, Company officials were criticized by evangelists for their "pagan" excesses. Early on, the Company strenuously sought to maintain religious neutrality, so that its trading activities would not suffer resistance on religious grounds. While the evangelical party, led in the House of Commons by William Wilberforce, sought to commit the parliament to the active propagation of Christianity in India, Company officials such as Lord Teignmouth sought to separate their personal evangelical convictions from the need for religious neutrality while administering the Indian colonies (e.g., Ilbert, 1922: 75).

The Charter Act of 1813, however, marked a turning point, when the system of requiring licenses for proselytizing activity was replaced by a more laissez faire, or even an encouraging attitude toward missionary activity in the Indian colonies (Palmer, 1966: 5). This was accentuated by the reform-

[7] Nearly half of these missions were established by missionaries from places other than Britain, such as continental Europe and the Americas. The location of missions and seats of local government were generally uncorrelated. Note that we consider missions and not stand-alone churches.

minded governor-generalship of Lord Bentick in 1828 and an 1834 act that further modified the East India Company's charter so that it could no longer regulate the entry and activities of British subjects and missionaries in India (Metcalf, 1994: 33; Streets, 2004: 27–28). Evangelical minded officials slowly began to occupy positions of power in the 1830s. Missionaries and the Company found common ground in the provision of Western education to the Indian elite and of Christian morality to the lower social strata in Sunday schools (Van der Veer, 2001: 6). A few of the Company's directors, such as Charles Grant, sought to increase proselytizing activity as a moral imperative (Dalrymple, 2007: 62), and officers such as Colonel Wheeler, commander of the Kanpur garrison, issued sermons and preached to the soldiers. As a result, the local populace likely perceived missionaries as an arm of the East India Company (Anderson, 2007: 4); sepoys in the Bengal Army increasingly came to believe that the policies of religious tolerance by their British officers were rapidly being eroded and would soon be a thing of the past (Saxena, 1974: 88; Singh, 1976: 156–157).

We expect Christian missions to be an additional source of identity salience and oppositional consciousness for discontented soldiers, and so regiments located near a Christian mission would have a magnified effect of festivals as free spaces in mobilizing for collective action. Therefore,

> **Hypothesis 3 (H3):** When regiments face an oppositional identity, they are even more likely to mutiny at or after the observance of a religious festival.

Threat of repression and free spaces. Free spaces have limits: constraints that derive from the local opportunity structure. On one hand, while festival gatherings offered the opportunity for a collective willingness for mutiny to emerge, the same processes of communication could also alert participants about the unfavorability of the local environment for protest if the town had a large

British presence. On the other hand, a larger local British presence might also be seen as offering contrast and its consequent results on oppositional consciousness. If these exogenously imposed instantiations of free spaces triggered mutiny through purely emotional episodes, then one would predict the latter to predominate. Conversely, if the willingness to take the leap from shared grievances to collective mutiny required some threshold level of knowledge about others' participation, then one would expect such strategic deterrents to impede the formation of collective efficacy in favor of mutiny. This leads to two competing hypotheses about the effects of local British presence on the hazard of mutiny:

> **Hypothesis 4a (H4a):** Regiments stationed at towns with greater British presence are less likely to mutiny after a festival because of lower perceived chances of success and greater chances of discovery at festivals.

> **Hypothesis 4b (H4b):** Regiments stationed at towns with greater British presence are more likely to mutiny after a festival because of greater oppositional consciousness through contrast.

METHODS

Event History Data

To test our hypotheses, we constructed an event history dataset. The dependent variable is the hazard of mutiny for a particular regiment in a particular time period. The period intervals are days, and the units of analysis are regiments. The period of analysis is 303 days; the observation window begins with the beginning of rumors about the greased cartridges at the Dum Dum Arsenal And Ordnance Factory and ends when the East India Company's charter was revoked, the subcontinent came under the direct rule of the Queen and her Viceroy, the existing regimental regulations were dismantled, and extensive reorganization of the Bengal Army was undertaken.

The event in our empirical setup is an act of mutiny. We recorded 142 mutinies out of 208 regiments, at different times and places. Regiments exit the risk set once they mutiny, because once they mutinied, they would either be punished by death, disbanded, or at least asked to lay down weapons and stay confined in their quarters awaiting trial by courts martial. British officials, on their part, would normally have relied on the military-legislative definition as provided by the Mutiny Act, which stipulated a mutiny as a collective action by serving members of the military: to overthrow or resist lawful authority, to disobey and subvert discipline, or to cooperate with such forces; any act of collective and violent refusal to obey orders was therefore construed as a mutiny. We focus on the Bengal Native Army because it was the only army scheduled to receive the Enfield rifle. Neither the Madras nor the Bombay armies were at risk of receiving the rifle and remained largely unaffected by the rumor of the greased cartridges. A few regiments, such as the Malwa and Jodhpur contingents, were raised at the frontiers of the political demarcations between the Bengal and Bombay presidencies, so we included them in the study, following the extant practice in the lists and returns compiled by the British. The sources we relied on were based on our need for accuracy rather than novelty; we wanted the most accurate reconstruction of the event history and regimental attributes, rather than to discover new sources to add to historical scholarship.

Sources

Few events in British colonial history have been as widely reported on as the 1857 mutinies in India. Even as early as 1858–1859, British army officers such as Malleson (1858; and later Kaye and Malleson, 1888–1889) and Bourchier (1858), and civil administrators such as Robertson (1859) were beginning to assemble a chronology of the events and their observations on the social forces at work in triggering these mutinies. The only published narrative of the mutinies from an Indian soldier

comes from the translated account of a veteran soldier, Sita Ram Pandey, from 1873 (Lunt, 1970), which was subsequently verified by Cadell (1959). We do not rely on these early accounts by and large as the sources of event data, because of their very personal interpretations of events and limited accuracy and breadth, but they offer an interesting perspective on the beliefs and views of the participants in these episodes.

The first comprehensive investigations of the mutiny events as well as depositions to establish their causes were made by a commission of enquiry headed by Jonathan Peel, the Secretary of War in 1858, and presented to the House of Commons in 1859 (Peel Commission, 1859). These reports also provide valuable data on the composition of the regiments, as well as enumerating the lesser-known aspects of regimental organization, discipline, and morale. A compendium of communications and proclamations made by the Indian mutineers, assembled by Rizvi and Bhargava (1957–1960), provides the perspective of the soldiers and bystanders in the mutinies. Communications between British military commanders and civil administrators were assembled by G. W. Forrest (1893) in great detail; these were especially useful in tracking down the series of early events. These early events are often lost on analysts of the mutiny because they were spread over time, and at the time they occurred, the early acts of arson and collective disobedience by soldiers were interpreted by officers and administrators as sporadic acts of misbehavior, in denial of the endemic perceptions of religious identity threat fostered by the rumors among the sepoys. Forrest (1893) also provided transcripts of courts martial and depositions by British officers, Indian soldiers, and civil administrators, at least up to the point at which it was feasible to hold these inquiries. Based on these transcripts and depositions, the first events in the history are the early acts of collective disobedience, arson, and violence in January 1857 in eastern India, rather than with the larger episodes beginning in May 1857 in Meerut (northern India), which are typically studied more

intensely because of the large scale of unrest and breakdown of local authority.

We also consulted reconstructed timelines of the mutiny by modern authors. Although the East India Company expended substantial resources in collecting demographic, revenue, and other information—including a network of informants and agents, especially since Bentick became Governor-General in 1828 (see Bayly, 1996: 142–179)—the outbreak of several mutinies in several places at the same time would have severely strained these information-gathering capabilities. For that reason, we also relied on several modern sources to reconstruct the event history of the mutiny as accurately as possible. These include competent accounts by Indian historians such as S. N. Sen (1957) and Rudrangshu Mukherjee (2002), and British historians such as P. J. O. Taylor (1997) and Saul David (2001). This list is not exhaustive by any means. On the occasions on which there was a lack of unanimity about the dates or places of mutiny, we looked to triangulate the event details among these sources as well as with events mentioned in correspondences and statements of officers, administrators, mutineers, and observers. Different pieces of information about regiments—date, location, and action—were triangulated separately to arrive at the most agreed-upon parameters of each event. Furthermore, we also consulted accounts that were written specifically for smaller time windows of the rebellion, such as Palmer's (1966) account of happenings in Meerut, Tapti Roy's (1993, 1994) account of events in Bundelkhand, I. A. Khan's (1998) reconstruction of the actions of states' troops, such as the Gwalior regiments, and Mazumder's (2003) account of the situation in Punjab.

The independent variable: Days since a religious festival. Data on religious festivals were gathered based on past calendars. We focused on religious festivals that were public performances; they involved the public display of faith, a procession or a gathering, and large numbers of people.

We excluded religious festivals that were exclusively private observances. The Hindu calendar (the Saka calendar) is lunisolar, based on the positions of the sun and the moon. The Islamic calendar (the Hijri calendar) is lunar, based on the phases (and sighting) of the moon. We connected these calendars to the Gregorian calendar of 1857 to integrate the dates of the religious festivals with the event history. We looked at calendars in several regions of India because the positions of the moon vary by location sometimes, moving festival days around on a few occasions.

Our list of festivals excluded Ekadashis, considered spiritually beneficial days, when devout Hindus individually fast as a means of spiritual purging. The Hindu calendar allows for two Ekadashis each month, one each when the Earth is closest to the moon and farthest from the moon. Instead, we restricted attention to festivals devoted to the turning of seasons and specific deities in the Hindu religion. We also obtained an Islamic calendar for Islamic years 1273 and 1274, which overlap with the Gregorian year of 1857, and then compiled our list of Islamic festivals belonging to the Shia and Sunni faiths. We constructed a clock, which was set to 0 on the day of the festival and then began ticking upward in increments of 1 with the passage of each day. The clock gets reset to zero again once the next festival happens and then increases thereafter, in steps of a day each.

Community ties: Distance from place of recruitment. We measured the connections between soldiers and their places of recruitment by spatial distance. We gathered data on the locations of regiments as part of the event history data noted previously. Data on the places (city/town/district/village) from which regiments were recruited were gathered mainly from a publication by the Military Department (Cardew, 1903). Similar data are also available in lists released by the East India Company (references available on request), but we consider Cardew (1903) to be the more comprehensive source. We translated location names into coordinates

(latitude and longitude). On a few occasions, regiments were recruited from a couple of nearby towns or villages, in which case we took the average longitude/latitude. We computed distances using the spherical distance formula, using standard R libraries for trigonometric functions.

Even though we would have preferred to have road distances, such data are unobtainable for the period of our study. But because these events transpired mostly in the flat plains of the subcontinent, we feel comfortable in using the spherical distance formula as a reasonable substitute for proximity. We took the log of distance to the place of recruitment, with the logic that the effectiveness of ties of communication and kinship decreases with the log of spatial distance.

Oppositional symbols: Presence of Christian missions. Data on the presence of Christian missions (as of 1857) came from Neill (1984). There are other possible sources, such as the official lists of missionaries and their locations in India as reported by the East India Company's administration (references available on request). But we found Neill's (1984) data to be more comprehensive, especially with regard to enumerating missions of lesser-known missionary societies, as well as those from non-British regions such as Denmark, Germany, Sweden, the Americas, and so on. We consider missions but not stand-alone churches, because the latter were typically located only in the bigger cities in 1857, and therefore it is hard to say if their effect of enhancing oppositional consciousness was based on the presence of the church itself or that of the large number of Europeans in the area.[8] Missions however, were located independent of the local

[8] In 1857, conversion efforts in the Bengal Presidency weren't very successful per se, so churches would largely be indicative of the population of local Europeans; see American Board of Commissioners for Foreign Missions (1861), Oddie (1969), Neill (1984), and Porter (2004) for accounts of missionary activity in India, including the Bengal Presidency; also see Dubois' (1823) lament on the state of conversion efforts.

Christian population.[9]

We considered a mission proximate to a regiment if it stood within a 25-mile radius of the regiment. The decision to use a 25-mile radius takes into account the distance a healthy soldier could walk in a day. This is important in that the mission must be sufficiently proximate to the regiment to influence the sepoys by social contact. Differing distance windows (20 miles and 30 miles) were used as well to demarcate proximity and yielded similar results. We used a dummy variable set to 1 if a regiment was located within 25 miles of a Christian mission, and zero otherwise. Among the regiments, 100 out of 208 were located near a Christian mission.

Size of British presence. When regiments were located in stations with a larger British presence, it could serve as a deterrent to mutiny or it could trigger greater emotional reactions; so we considered the strength of British presence as a way of testing whether festivals operated as purely affective mechanisms, rather than a mix of affective and informational. We used an ordinal scale ranging from 1 to 3 to measure the size rank and used a variable with an inverted scale [4 – (size rank)] in our models to make the coefficients easier to interpret. A larger value indicates greater strength of British presence.

Regimental characteristics. Typical accounts of mutiny, such as by Lammers (1969), trace mutiny to material concerns such as pay and working conditions, although wages for native officers and sepoys were generally higher in the Bengal Army than in the Company's other two armies that

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[9] It is also important to note that the setup of missionary societies wasn't necessarily used as a political weapon by the East India Company, even though it might have been perceived as so by the threatened Hindu and Muslim soldiers of the Company's army. Dubois (1823: 84) noted the irreligiosity of the Company's trade officials and administrators, although missions got charitable donations from Englishmen and locals when they ran into dire straits financially (e.g., American Board of Commissioners for Foreign Missions, 1861: 356).

weren't scheduled to receive the new cartridges, namely, the much smaller Bombay and Madras armies (e.g., Barat, 1962). To control for variations in such material concerns within the Bengal Native Army, we gathered data on wages drawn by the different regiments from the sources mentioned previously and also Khan (1998), Butalia (1998), and Saxena (1974). We used the data on wages in the form of a wage-rank, which ran from 1 to 9, with 1 representing the highest paid troops, and 9 representing the lowest paid troops. Because wages are correlated with specialization (e.g., infantry, cavalry, artillery), we did not explicitly control for specialization.

To account for heterogeneity in regiments in terms of their past history of loyalty to officers—something that is only truly tested in battle—we gathered data on the regimental honors awarded to each regiment for battles in the period 1757–1857, as assembled in two in-depth accounts by Norman (1971) and Cook (1987); the numbers of these honors ranged from 0 to 13 as of 1857.[10] Sarbans Singh (1993) also has some data on regimental honors, but we found no relevant information that was not already available in the previous two volumes. Because only one-third of the regiments received any honors at all (and two-thirds didn't), we constructed a dummy variable that was set to 1 if a regiment had received any honors in battle in the past.

To control for the demographic diversity of regiments, we collected data on regimental composition from the Peel Commission (1859) reports, supplemented by data from Barat (1962), Butalia (1998), Khan (1998), David (2001), Mazumder (2003), and others. We recorded composition in terms of five categories as used by the British for tabulation: Mohamedan, Brahmin, Rajpoot, Other Hindu

[10] Regiments were awarded collective honors for loyalty in battle, which were subsequently proudly displayed on the regimental standard. For infantry regiments, a typical achievement would comprise holding their line under a heavy cavalry charge or intense artillery fire, or refusing to flee even when the flanks were completely decimated. For cavalry regiments, these would take the form of successful offensives against the enemy even while decidedly outnumbered or under intense fire. These honors therefore were marks of a regiment's collective discipline and loyalty to their officers.

(including lower-caste Hindus and animists), and the fifth comprised religious minorities such as Sikhs, Buddhists, Christians, Jews, and Parsees. Once composition was established, for each regiment, we computed a Simpson index of diversity, which represents the probability that two individuals randomly selected from a regiment will belong to the same demographic group. Higher values of the Simpson's index represent lower diversity and vice versa. For running the models, we used (1 – Simpson's Index) as the diversity variable, so that higher values indicate higher diversity.

Two broad tiers of locally raised troops existed in the Bengal Native Army. These were the regulars and the irregulars, the latter also including various armed contingents of the princely states. The regulars were regiments whose employment was akin to a government job, with perquisites including subsidized stamp duty, pensions, promotion by seniority, and the assurance of an inquiry by courts martial in case of unfair punishment by an officer. Along with these substantive benefits were also symbolic manifestations such as having uniforms similar to those of the European light infantry and light cavalry regiments (Mollo, 1981). The irregular regiments, in contrast, were much more like mercenaries, recruited ad hoc, rather than stolid government servants; they included the irregular armies of vassal princes commanded by the British. They had no pension, unless granted specifically by a senior British officer as recognition for some outstanding act, and their uniforms were plain, if they had any specific uniform at all. Overall, the regular regiments were part of the administrative establishment, while the irregulars were usually local levies that grew large enough to be called regiments. We used a dummy variable that was set to 1 if the regiment was a regular regiment and 0 if it was an irregular regiment.

British strategic advantage. Apart from the strength of British presence, we used another measure of strategic disadvantage for the mutineers: the presence of a proximate telegraph station. The need

for a telegraph line to connect the expanding breadth of the empire in South Asia was keenly felt as early as 1839, and the telegraph was placed under the exclusive control and use of the government with a view to retaining a strategic information advantage (Bayly, 1996: 318). We used proximity to the telegraph, computed using the spherical distance formula to account for ease of response by the British authorities. Closeness to a telegraph station also might have made sepoys wary of rising in mutiny, knowing that information calling for help was likely to spread quickly to other military stations housing loyal native and European regiments. We used a dummy variable that is set to 1 if a regiment was located within a 50-mile radius of any telegraph stations, and 0 otherwise. The presence of the telegraph in a 50-mile radius indicated whether information about local unrest could be relayed within a day to other stations by the British authorities calling for help, because 50 miles is the typical distance a horse-rider can travel in a day.

Effects of the wider unrest. A number of writers describe the events of 1857 as a mutiny scaling into a rebellion (Roy, 1994; Bayly, 1996), or a peasant insurgency (e.g., Stokes, 1978; Guha, 1999). In our study, we found that mutinies were sometimes concurrent with local breakdowns in law and order, and for that reason we controlled for the breakdown in local authority in two ways: presence in the region of peasant/taluqdari unrest, and extent of prison breakouts. Rural peasants and taluqdars (minor potentates who were de-facto revenue collectors) were connected together into a symbiotic relationship (Mukherjee, 2002: 24). The British curtailed the role of taluqdars by minimizing their role in revenue collection, restricting the size of private militia, and challenging their prestige. So we created a dummy variable for the Awadh region, where the taluqdars were located (see Mukherjee, 2002, for a study of the subsequent taluqdari revolt). A more telling indicator of the strength of the popular unrest against the British was jail breaking. Jails, as Anderson (2007: 27) noted, were "newly constituted colonial spaces where Indian bodies were confined,

controlled and disciplined in unprecedented ways. Penal practices often transgressed social norms, particularly, with regard to religion and caste . . . jails both embodied and symbolized broader social fears about colonial interference in religious affairs and forced conversions to Christianity." So we included the number of local prison escapees as a control for the extent of breakdown in local authority and the supply of civilian allies.[11]

Temporal and spatial diffusion. We used a number of control variables to account for the diffusion of violence. When socially transmitted information is unverifiable—as were the rumors of the profane cartridges—violent action by proximate others might be held as proof of the existence of a legitimate threat. So we controlled for the log of the number of prior mutinies, the log of distance to the nearest prior mutiny updated each day, and time since the previous mutiny. Table 1 presents a summary of variables and correlations among the control and independent variables.

[Insert Table 1 Here]

Model Specification

As noted previously, the dependent variable is the hazard of mutiny, and the periods of observation are days. A mutiny in our dataset is a discrete event that occurs over time and can be studied as a "hazard" that each regiment experiences over time. The instantaneous hazard rate is the limit over the number of events in a time period divided by the number at risk as the time interval decreases.[12] We have the day on which a mutiny occurred and estimated a parametric model of the hazard rate with a Gompertz specification in which the hazard rate is described by:

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[11] The prisoners escaped either because the guards fled in anticipation of local unrest or were overcome by mutineers. All we know is how many prisoners were deemed by the British to have "escaped" in particular prisons during the mutinies. The records don't indicate who opened the gates, just that large numbers of prisoners escaped coincident with the mutinies.

[12] In analyzing empirical data, the actual time intervals are not infinitesimal and continuous but discrete, such as days.

$$h\,(t \mid x_{j,t}) = h_0(t)\,\exp(x_{j,t}\,\beta_x)$$

where the baseline hazard is: $h_0(t) = \exp(a)\exp(\gamma t)$. When the constant term is ignored, the hazard rate in a Gompertz specification can be described as:

$$h\,(t \mid x_{j,t}) = \exp(\gamma t)\,\exp(x_{j,t}\,\beta_x)$$

The Gompertz model is a general model that allows for monotonically increasing or decreasing hazards and is well suited to model a diffusion process where the baseline hazard varies exponentially with time. $x_{j,t}$ is a vector of time-varying variables measured for each regiment *j*, and β_x is a parameter estimate for the contribution of x_j to the hazard of mutiny. It is a two-parameter model (β and γ). β is the scale parameter, or a vector of scale coefficients β_x. γ is the shape parameter; γ indicates that the hazard is increasing with duration if it is positive, decreasing with duration if it is negative, and constant with duration if it is equal to 0 (see Tuma and Hannan, 1984). Observations on each regiment are made over daily spells, and so we could update independent and control variables. Regiments exited the sample when they mutinied or were right-censored.

Diffusion-related variables and other continually updated variables were constructed using the R statistical environment, and the data were then converted to native STATA format for running the hazard models, which were run using the streg procedure in STATA. Because there are multiple spells for each regiment, we estimated robust standard errors, clustering on regiment, to correct for non-independence of observations across time. We used the Gompertz specification because it best represents the underlying hazard for a process such as the mutiny; also we determined that it

provided a better fit than the exponential or Weibull models. Our results were unchanged with specification, but some specifications (e.g., Cox) are discussed in the section on robustness checks.

Entry into risk set. We had two choices as to when regimental units enter the risk set. One option was to treat all regiments at risk of mutiny after the first recorded disturbance on January 26, 1857, when several soldiers broke ranks, set fire to the regimental lines, and disobeyed orders to stand down. The other option was to treat units as entering the risk set on the day when they received the cartridge rumor. Because, according to several historians, the rumor originated in mid-January in the Dum Dum Arsenal & Ordnance Factory, one can calculate how long it would have taken to reach a particular regiment by word of mouth.[13]

We chose the second option for two reasons. First, historians widely assume the rumor of the cartridges to be the trigger of the mutiny: as the proverbial last straw that broke the camel's back, in this case, tipping soldiers' perceptions of religious threat from the realm of idle speculation to an article of faith (e.g., see Forrest, 1893, vol. 1: 11–27; Peel Commission, 1859, for transcripts and depositions, or the modern sources cited previously). It is unlikely that the rumor could have reached everyone at the same time, given that native regiments were stationed across an area of land as large as one-third of the present-day United States. Second, in any case, when regiments enter the risk set on the basis of the date of receipt of the rumor, the last such regiment enters the risk set before the first recorded acts of collective disobedience and arson on January 26, 1857. Thus regiments become exposed to the effect of festivals after the rumor about cartridges is received.

For 1857 India, we assumed a speed of rumor transmission of 25 miles per day, based on the

[13] The British controlled access to the telegraph and also regularly checked letters to and from soldiers for seditious content (Bayly, 1996), so the rumors are unlikely to have been transmitted through those channels.

number of miles the average fit person can walk in a day, and based on that we estimated when each regiment would have received the rumor, demarcating its entry into the risk set for mutiny. We calculated the distance from Dum Dum (the place of origin of the rumors) to any location using the spherical distance formula that calculates the distance "as the crow flies" between two locations based on their latitude and longitude. This distance was divided by the speed of transmission to arrive at an estimate of how soon a regiment might have received the rumors. We also ran models in which all units enter the risk set after the first mutiny, with similar results, as discussed later.

Regiments drop out of the risk set when they mutiny or when they are censored at the end of the observation window. The end of our observation window coincides with the last acts of mutiny in November 1857 at Chittagong in the eastern hill tracts bordering Burma. After these events, the entire regimental structure of the Bengal Native Army was dismantled. The administration of the British East India Company's possessions was taken over by the British crown, which set about changing nearly everything about the military organization of the Bengal Army. New recruiting policies were implemented that sought to enforce the "divide and rule" principle by placing historically antagonistic ethnic, religious, or linguistic groups in significant proportions in each regiment.

RESULTS

The first hypothesis suggests that religious festivals provided free spaces that enabled mobilization for risky collective action, and therefore the hazard of mutiny would be highest at or just after a festival and would decline thereafter. A histogram of the mutiny events across different times since a festival is shown in figure 3; a simple count of mutinies across the independent variable points to the pertinence of festivals in triggering mutiny at or just after.

[Insert Figure 3 Here]

Table 2 (models 1 to 3) presents the results of the hazard rate analysis. All variables, except for clocks and dummy variables, were used in their standardized form. Empirically, the festival clock is an exogenous shock to the system under consideration, a fact borne out by the near-zero correlations with all other variables, as illustrated previously in table 1. Therefore the effect of the clock itself is unlikely to be affected by control variables. Nevertheless, we controlled for heterogeneity in regimental attributes, heterogeneity in British strategic advantage, and diffusion to test hypotheses 2, 3, and 4, which require interactions with distance from place of recruitment, presence of Christian missions, and size of British presence.

[Insert Table 2 about here]

Control model. Model 1 is the control model containing effects of the control variables classed by type. There is no significant effect of wage levels, and hence there is no support for the argument that poorly paid regiments mutinied at a faster rate than their highly paid counterparts. The dummy variable for whether a regiment had won battle honors is not significant; the regiment's history of collective discipline in previous battles therefore seems not to have mattered much when the soldiers were faced with threats to their religious identity. Irregular regiments were by and large less likely to mutiny than their regular counterparts. As relatively temporary regiments that grew out of local levies, irregular regiments were less bureaucratized and more tied to the particular officer who had raised these bands. Such regiments were therefore likely to be more loyal to their officer and not mutiny in response to the rumors. Demographic diversity is not statistically significant in determining the rate of mutiny.

The coefficient for distance from telegraph is not significant. The extent of local prison breakouts enhanced the rate of mutiny. This control variable can be interpreted in two ways. First the widespread freeing of prisoners reflects the level of general popular unrest in such locations, which would have made regiments mutiny at a faster rate. Second, as Anderson (2007) noted, freed prisoners often joined the rebellious soldiers, either as local guides or carriers of arms, ammunition and supplies, or sometimes as reserve fighters. The dummy for presence in a region of broader peasant rebellion, sometimes called the taluqdari revolt, is not significant.

The controls for diffusion are significant. The coefficient of (standardized) log distance to nearest previous mutiny is negative and statistically significant. The closer a regiment was to the location of a previous mutiny, the more likely it was to have erupted in collective violence as well. This suggests a diffusion process wherein a proximal act of collective violence lends credence to the rumors and renders future collective violence more likely. There is also a significant effect of temporal diffusion of mutiny. The coefficient on time since previous mutiny is negative and significant, indicating that recent acts of mutiny increased the rate of mutiny. As diffusion of violence proceeded, the identity threats came to appear more credible, and the act of violating the taboo of mutiny became more acceptable as a collective response.

The main effect of distance from place of recruitment, the proxy for community ties, is significant and negative; being closer to the regiment's place of recruitment alone increases the hazard of mutiny. The dummy for the presence of a Christian mission is significant and positive, so regiments located in the proximity of Christian missions were more likely to mutiny. The size of British presence has a negative and significant effect, and therefore larger stations have lower rates of mutiny.

Main models. Model 2 includes the effect of the religious festivals, which is represented by the clock of elapsed time since a religious festival. The effect of elapsed time since a religious festival is significant and negative, the hazard of mutiny is highest at or just after a festival and declines with days elapsed since a festival. So there is support for hypothesis 1.[14]

We didn't standardize the festival clock variable so as to ease interpretation. In terms of magnitudes, one additional day elapsing on the time-since-festival clock causes (approximately, on average) a 17 percent decline in the hazard of mutiny. When compared with the diffusion variables incident in the model, this is equivalent to the magnitude effects of a decline in the hazard of mutiny from being located 23 miles farther away from the previous mutiny site, or four additional days having elapsed since the previous mutiny, or 20 fewer regiments having mutinied previously (detailed calculations are available on request). When compared with the other factors influencing mutiny, the decline in the hazard of mutiny from one additional day elapsing since a festival is also equivalent to the decline in hazard from the regiment being 91 miles farther away from its place of recruitment, or a 26 percent lesser chance that there is a Christian mission in proximity of the regiment, or 46 percent fewer prison escapees in the neighboring area, or a 13 percent higher chance that the regiment is irregular instead of regular, and so on (coefficients used are from model 2).

Model 3 presents tests of hypotheses 2a and 2b, 3, and 4a and 4b. The interaction effects provide

[14] We also considered whether the effect of festivals as avenues for organizing collective action changes in importance over time. We did so by placing the elapsed time since religious festival into the shape or | parameter when estimating the Gompertz survival model in STATA, to account for the effect of duration at risk on the effect of the festival clock. Over time, the effect of festivals declines, presumably as the forces of diffusion too are set in motion, and mutiny begins to appear as less of a taboo. Because the number of festivals to which a regiment is exposed is linearly correlated with duration, we didn't include a separate control for the count of festivals (we were already allowing for time-varying hazards by using the shape parameter of the Gompertz model and controlling for the number of prior mutinies, which is dependent on the duration at risk).

support for hypotheses 2a, 3, and 4a and run counter to the competing processes suggested by hypotheses 2b and 4b. In model 3, the interaction of elapsed time since religious festival and distance from place of recruitment is negative and significant, but introducing the interaction term takes away the main effect of distance from place of recruitment. The interaction effect is plotted in figure 4, which shows that the hazard of mutiny increases at a faster rate with the declining clock when regiments are located far from their place of recruitment. So there is support for H2a, in that community ties were predominantly alternate mechanisms for the activation of solidarity, instead of enhancing the emotional empowerment to be found in a festival gathering. The interaction of time elapsed since a festival with the presence of a Christian mission is significant and negative, supporting H3, which held that regiments that were in proximity to Christian missions were even more likely to have their oppositional religious identities activated and to rise in collective mutiny after festival gatherings. The interaction of the size of British presence with the festival clock is significant and is impeding rather than enhancing, lending support to H4a. Instead of triggering greater anger and salience of an identity threat, a larger British presence signaled strategic disadvantage and made it harder to build a sense of collective efficacy for mutiny at festival gatherings. Figures 4, 5, and 6 illustrate these interaction effects.

[Insert Figures 4, 5, and 6 here]

Alternate form of festival clock. Subsequently, we also used a different form of the independent variable, separating the festivals of the majority in each regiment (Hindu or Muslim) from the festivals of the minority in that regiment (Hindu or Muslim). These were operationalized as separate clocks; one clock measures the time since a religious festival relevant to the majority in the regiment, and the other clock measures the time since a religious festival for the minority in the regiment (the correlation between the two clocks is –0.17 and between the separate clocks and the aggregated

clock is less than 0.25). Next we ran hazard rate models similar to the previous ones, except that the single festival clock was replaced by two festival clocks (both in the main model and the shape/ancillary parameter). These are reported in model 4 in table 2. Both the majority's festivals and the minority's festivals trigger mobilization, but the latter has a magnitude that is less than one-third that of the majority festivals. The difference in the mobilizing effects are intuitive, given that the minority's festivals primarily offer free spaces for a smaller group of soldiers to mobilize in collective action against the hierarchy, than if it were a festival celebrated by the majority religious group in the regiment.

Robustness Checks

We conducted a number of robustness checks. First, we considered the possibility that diffusion effects cause a non-proportional increase in the hazard rate, and so, to control for variation in diffusion dynamics across the duration, one needs to rule that out. Model 5 in table 3 includes the distance from prior mutinies and time to mutiny in the shape (gamma) parameter of the Gompertz model: it was implemented in STATA by placing the variables in the "ancillary" option while retaining the same variables in the main model. The coefficients indicate that the effect of spatial diffusion affects not only the scale of the hazard but also the shape of the hazard. Spatially proximate mutiny events have a greater influence on other regiments at low durations, and the effect declines over time. The time since previous mutiny has no significant effect. More importantly, the effects hypothesized in H1–H4 remain unchanged even after controlling for variation in diffusion rates over the duration at risk.

[Insert Table 3 Here]

We reestimated the main and interaction models using the Cox proportional hazards specification

with time-varying covariates (models 6 and 7 in table 3). The tests for hypotheses H1–H4 are robust to these changes in specification. The appropriate coefficients are significant and have the same directional and magnitude effects. For example, the effect of one additional day elapsing on the festival clock decreases the hazard of mutiny by 14.2 percent in the Cox model (model 6, table 3), compared with 16.5 percent in the Gompertz model (model 2, table 2). Similarly, the coefficients on the interactions of the festival clock with distance from place of recruitment, presence of Christian missions, and size of regimental station are also similar in magnitude across the Cox model (model 7, table 3) and the Gompertz model (model 3, table 2).

Some historians suggest that there was an alternative coordination mechanism: disk-shaped cakes of coarse unleavened flour, called chapattis, about the size and thickness of a biscuit, which were being passed on by hand between villages and towns. Some scholars question the link between the mutiny and chapattis, but others describe them as omens of uprising (see Downs, 2000, for a summary). Did the circulating chapattis overwhelm the effect of religious festivals? In unreported models, we included a measure (dummy) for regiments that would have been exposed to these chapattis. We find that while the receipt of a chapatti induces them to mutiny, the effects of the elapsed time since a religious festival endure, as does support for H2a, H3, and H4a (interaction effects). The results therefore persist even after controlling for the chapattis as an alternative coordination mechanism.

Finally, we considered whether altering the criterion for entry into the risk set changes the effects that were hypothesized in H1–H4. The models discussed so far are based on the assumption that regiments entered the risk set when they received the rumor of the greased cartridges. What if they all were at risk of mutiny right after the first acts of arson and collective disobedience at Barrackpore on January 25–26, 1857? In our view, this mode of entry into the risk set is largely untenable because

all regiments would not have heard of the rumor, or for that matter, the mutiny, simultaneously. Nonetheless, we reestimated the main and interaction models under this different rule for entry into the risk set (models 8–9) and found that H1, H2a, H3, and H4a are still supported.

Our analyses emphasized time since a festival gathering because participants needed to experience the ritual and ceremony to have solidarity and common knowledge. The other possibility was that mere anticipation of a festival itself might have made religious identities salient. We therefore created a clock for time to festival, but in unreported analyses, we did not find that clock to be significant. So the implication is that religious rituals need to be observed for the solidarity to be felt, and large numbers of individuals ought to assemble together for the collective empowerment effect to operate. Parenthetically, it should be noted that mere assemblage of soldiers was not enough; soldiers did have opportunities to assemble in their quarters ("regimental lines").What was crucial was for group solidarity and avenues for common knowledge to become manifest simultaneously. We also gathered data on proximity to the center of Maratha power (Bithur), but it was not significant. Even though locations such as Bithur and Kalpi have come to be known as historically important in the 1857 uprising, these were predominantly locations at which mutineers eventually assembled, seeking leadership from deposed rulers such as Nana Saheb and Queen Laxmibai.

DISCUSSION

Although a number of recent historians have depicted the Indian mutiny-uprising of 1857 as part of a religious struggle rather than an uprising fed by economic factors (e.g., Dalrymple, 2007; Wagner, 2010), our study poses the transformation of religious solidarity into mobilization as a problem that has to be causally explained rather than a historical narrative to be offered. While historians have focused on the accumulated grievances of soldiers and how they presaged the collision of two

institutions—the army and religion—and two ensuing identities—that of a professional soldier and a member of a religion—they have not paid as much attention to how soldiers within regiments overcame collective action problems. Our study emphasizes religious festivals as free spaces that ignited challenges to authority. While rumors of a technological change in the organization insinuated the violation of a religious taboo, ironically, it was a religious festival that induced them to violate the organizational and professional taboo against mutiny.

The study expands research on mutinies as challenges to authorities. Much conflict in organizations, as also in states and cultural institutions, occurs through extra-institutional channels, and challenges from below in hierarchies can be studied through the lens of social movement analysis (Zald and Berger, 1978). Earlier studies have likened mutinies to movements (Lammers, 2003) and implicate working conditions as the cause, but they have neglected how rebels transition from shared grievances to collective empowerment. Similarly, studies of prison riots have described them as micro-revolutions that occur when prison staff are overwhelmed by demands from higher authorities, grievances among prisoners about their conditions of confinement, and the spread of ideologies that undercut the legitimacy of the prison (Goldstone and Useem, 1999), but they do not account for how prisoners overcome problems of pluralistic ignorance and free-riding. Research on naval mutinies in the seventeenth and eighteenth centuries show that mutineers in ships relied on contracting to overcome coordination problems. They signed a "round robin" petition—on which names of the complainants were written in a circle—allowing everyone to learn that everyone else had signed on but so that the ship's commander could not discern who the ringleader was (Rediker, 1987: 101, 234–235). Contracting solutions were feasible because the average merchant ship was small: it had 13 to 17 crew members, including the captain and officers (Rediker, 1987: 101). Such contracting solutions are unviable mechanisms for organizing mutinies in regiments with large

numbers of soldiers. In such cases, as our results indicate, free spaces become incubators of protest because they create collective empowerment.

Our study also showcases the interactions between the hidden transcript of a rumor and free spaces. Scott (1990) described rumors, which are anonymously authored and transmitted, as the second cousin of gossip and refers to them as ephemeral manifestations of sedition. The cartridge rumor embodied a contamination threat, had anonymous origins, and diffused by word of mouth. Yet, mere receipt of the rumor was not enough to kindle the fire of mutiny because of pluralistic ignorance about the intentions of others. Religious festivals were necessary for the rumor to become translated into oppositional speech acts and for the crystallization of a collective intent for costly action. In showing the interactions, our study directs attention to what DiFonzo and Bordia (2007) referred to as the chat room model of rumors. Much of the research on rumor is based on the paradigm of a one-way telephone call and emphasizes the supply of rumor: when individuals receive a rumor is decisive. By contrast, a chat room model of rumor suggests that consumption is as important as supply. Our study directs attention to the role of free spaces—settings in which the consumption of rumors and uncertain information is accelerated by the presence of several others engaged in sensemaking activity—in translating private beliefs into collective action.

Prior studies of free spaces have examined smaller group settings, mostly because those are typically the kinds of free spaces that have led to mobilization. Larger free spaces would rarely avoid detection, and collective action would be repressed, leaving few cases to study; so, in effect, most large spaces would rarely be "free" because of the lack of social closure in keeping subversive activities outside the view of the oppressors. The small versus large space dichotomy therefore is a theoretical condition that has largely remained unexplored. Our study provides evidence that free

spaces need not necessarily be small-group gatherings; even large gatherings can become free spaces for mobilization when the weak have weapons of subversion, such as communicating political dissent in a religious idiom. To trigger collective action, however, such large free spaces need to be sufficiently cultural-symbolic in their ability to allow for what Turner (1979) called "plural reflection and communication" yet be at low risk of discovery and immediate repression. Festival gatherings in colonial India were settings in which even large groups could air their anonymous dissent, with discursive tools and hidden meanings that eluded those in power. By drawing attention to how festivals were the triggers of emotional arousal and collective empowerment, and that as a result, processions sometimes spilled over into challenges to authority, our study underscores that the emergent organization typical of collective behavior also ought to be considered as a complement to more organized social movements.

Our study speaks to the call for synthesizing rational choice models of collective action and constructivist models of contention (McAdam, Tarrow, and Tilly, 2001). By exploiting how religious festivals were exogenous sources of variation in the supply of free spaces, our study sheds light on the processes by which free spaces ignite challenges to the status quo. Free spaces are weapons of the weak because they empower individuals to communicate their willingness to act on their private beliefs by instilling a shared sense of identity and providing alternative schemas outside the realm of cost-benefit rationalization of the status quo. By fostering common knowledge of participation, they reduce uncertainty about the beliefs of others and lead to a sense of greater collective efficacy in the absence of contracting solutions. Religious festivals were public arenas that linked symbol and social problems, and their effects are testaments to how the "the symbolism of events" encourages political action (Goodwin and Jasper, 2004: 28).

The results extend the boundary conditions under which resources are mobilized by the subordinated through formal structures. A basic tenet of resource mobilization theory is that social networks and formal structures are prerequisites for collective action (e.g., McAdam, McCarthy, and Zald, 1996). But the subordinated seeking to challenge authority in a hierarchy such as an army may lack access to such formal extra-institutional structures due to the strength of surveillance. Our account suggests that free spaces outside organizations are the intermediaries that enable members of the organizational world to engage in collective behavior outside the normative patterns of compliance expected of them in a hierarchy by allowing for emergent mobilization without overt organizing and leadership, and even when prospective participants are far away from their communities.

The findings also address critiques that research on social movements is too preoccupied with movements and neglects other influences (e.g., McAdam and Boudet, 2011: 3). Fligstein and McAdam (2011) described hierarchies as strategic action fields in which challengers fight with incumbents and are nested like Russian matryushka dolls in other strategic action fields. In our study, it is notable that the relative effect of religious festivals on mutiny is less important for troops located close to the communities from which they were recruited. Community ties are sociological superglue that holds groups together and enable swift mobilization through neighborhood and kinship ties, even in the absence of alternatives such as free spaces for large-scale mobilization. Also, exposure to oppositional cultural symbols, such as the Christian missions in mid-nineteenth-century India, ratchets up the effect of religious festivals on mobilization. Moreover, our study also considers how external influences such as wider political unrest, jailbreaks, or the strategic advantages enjoyed by the British shaped the trajectory of contention.

Finally, while students of collective action have studied religious movements and religious organizations as progenitors of mobilization, they have overlooked religious festivals as opportunities for subversive mobilization. Roman emperors carefully regulated the organization of religious festivals, and modern autocratic regimes in East Asia, South Asia, and the Middle East routinely regulate festival gatherings as potential flashpoints of organized political dissent and sectarian riots. Although our study is confined to one army in one country in the nineteenth century and looked at religious festivals, it directs attention to how weapons of the weak, such as Facebook and Twitter, serve as large free spaces to organize collective action in repressive systems. After all, communal gatherings and processions were the nineteenth-century ancestors of electronic meeting places and social media in the twenty-first century.

Table 1. Summary of (Non-standardized) Variables and Correlations

Variable	Mean	SD	Min.	Max.	1	2	3	4	5
1. Days since festival	4.48	4.09	.00	16.00					
2. Log distance from place of recruitment	4.85	1.96	.00	7.02	.00				
3. Presence of Christian Mission in the area	.48	.50	.00	1.00	.00	.17			
4. Wage rank of regiment	6.74	2.81	1.00	9.00	.00	.17	.11		
5. Demographic diversity of regiment	.27	.13	.02	.61	.00	.10	.03	.21	
6. Dummy for irregular regiment	.45	.50	.00	1.00	.00	-.51	-.33	-.48	-.05
7. Regiment received 'Battle Honors' in the past	.62	.49	.00	1.00	.00	.34	.15	.13	-.03
8. Size of British military presence	1.55	.62	1.00	3.00	.00	.07	.46	.02	.06
9. Located near telegraph station	.18	.38	.00	1.00	-.01	.00	.22	-.09	-.07
10. Located in region of wider peasant uprising	.13	.34	.00	1.00	.01	-.15	-.15	-.05	-.19
11. Number of escapees from local prison	489	627	32	3300	.01	.06	.22	-.11	-.05
12. Log distance from nearest last mutiny	4.65	1.95	.00	7.17	.05	.01	.08	.03	.00
13. Days since previous mutiny	8.94	9.07	.00	33.00	.02	-.01	.00	.00	.00
14. Log number of mutinies till previous day	3.87	1.32	.00	4.98	-.07	.01	.00	-.01	.00

Variable	6	7	8	9	10	11	12	13	14
7. Regiment received 'Battle Honors' in the past	-.40								
8. Size of British military presence	-.15	.04							
9. Located near telegraph station	.12	-.02	.31						
10. Located in region of wider peasant uprising	.20	-.20	-.33	-.11					
11. Number of escapees from local prison	.03	-.01	-.05	.13	.13				
12. Log distance from nearest last mutiny	-.06	.10	-.12	-.05	-.06	.04			
13. Days since previous mutiny	.00	.00	-.01	-.01	.01	.01	.12		
14. Log number of mutinies till previous day	.01	.00	.01	.01	-.02	-.02	-.45	-.21	

Table 2. Gompertz Models of the Hazard of Mutiny: Maximum Likelihood Estimates*

Variable	Model 1	Model 2	Model 3	Model 4
Wage rank of regiment	-.125 (.121)	-.111 (.120)	-.118 (.117)	-.152 (.118)
Regiment received 'Battle Honors' in the past	.397 (.297)	.414 (.293)	.387 (.287)	.422 (.288)
Irregular regiment	-1.428••• (.290)	-1.378••• (.289)	-1.406••• (.285)	-1.298••• (.283)
Demographic diversity of regiment	.161 (.119)	.150 (.118)	.150 (.112)	.147 (.118)
Located near telegraph station	-.420 (.397)	-.441 (.389)	-.507• (.402)	-.465 (.380)
Located in region of wider peasant uprising	.475 (.295)	.439 (.300)	.546 (.283)	.395 (.290)
Number of escapees from local prison	.438••• (.090)	.434••• (.091)	.456••• (.090)	.415••• (.087)
Log distance from nearest last mutiny	-1.722••• (.124)	-1.712••• (.123)	-1.733••• (.120)	-1.701••• (.122)
Days since previous mutiny	-.050•• (.023)	-.047•• (.023)	-.049•• (.024)	-.027 (.020)
Log number of prior mutinies	.364 (.268)	.513•• (.255)	.561•• (.227)	.501• (.293)
Log distance from place of recruitment	-.409••• (.155)	-.426••• (.154)	-.155 (.167)	-.430••• (.148)
Presence of Christian Mission in area	.622•• (.289)	.688•• (.293)	1.238••• (.323)	.586•• (.280)
Size of British military presence	-.827•• (.167)	-.818••• (.163)	-.594••• (.181)	-.763••• (.164)
Days since last festival		-.181••• (.050)	-.163••• (.053)	
Days since festival X Log distance from place of recruitment			-.058••• (.017)	
Days since festival X Presence of Christian mission			-.149••• (.041)	
Days since festival X Size of British military presence			-.074••• (.026)	
Days since festival of regiment's religious majority				-.073••• (.024)
Days since festival of regiment's religious minority				-.020••• (.006)
Constant	-5.480••• (.525)	-4.577••• (.606)	-4.434••• (.624)	-3.721••• (.738)
Effects on duration dependence:				
(Ancillary) Days since last festival		-.001••• (.000)	.001•• (.000)	
(Ancillary) Days since festival of regiment's religious majority				.000•• (.000)
(Ancillary) Days since festival of regiment's religious minority				.000••• (.000)
(Ancillary) Constant		-.015••• (.004)	-.017••• (.004)	-.020••• (.005)
Overall model fit:				
Akaike information criterion (AIC)	-94.23	-99.26	-121.82	-111.79
D.f. for AIC	15	17	20	19

* Robust standard errors are in parentheses. Except for clocks and dummies, variables are used in their standardized form. • $p<0.1$, •• $p<0.05$, ••• $p<0.01$, two-tailed tests.

Table 3. Robustness Checks: Models of the Hazard of Mutiny*

Variable	Model 5 (Robust to duration-dependent diffusion)	Model 6 (Cox prop. hazards)	Model 7 (Cox prop. hazards)	Model 8 (Units enter risk set after first mutiny)	Model 9 (Units enter risk set after first mutiny)
Wage rank of regiment	-.101 (.117)	-.037 (.108)	-.037 (.104)	-.134 (.122)	-.145 (.119)
Regiment received battle honors in the past	.379 (.282)	.127 (.244)	.115 (.230)	.413 (.293)	.372 (.286)
Irregular regiment	-1.341••• (.283)	-1.188••• (.257)	-1.155••• (.249)	-1.321••• (.293)	-1.345••• (.288)
Demographic diversity of regiment	.145 (.107)	.117 (.103)	.107 (.097)	.142 (.115)	.133 (.110)
Located near telegraph station	-.695• (.394)	.022 (.380)	-.062 (.404)	-.423 (.397)	-.496 (.417)
Located in region of wider peasant uprising	.667•• (.288)	-.057 (.284)	.083 (.272)	.229 (.315)	.352 (.292)
Number of escapees from local prison	.475••• (.091)	.250•• (.110)	.272•• (.110)	.398••• (.096)	.403••• (.098)
Log distance from nearest last mutiny	-2.249••• (.202)	-1.558••• (.108)	-1.567••• (.105)	-1.727••• (.121)	-1.749••• (.119)
Days since previous mutiny	-.084• (.047)	-.012 (.020)	-.024 (.020)	-.029 (.027)	-.033 (.027)
Log number of prior mutinies	.747••• (.239)	-.041 (.281)	.084 (.249)	1.389••• (.315)	1.396••• (.298)
Log distance from place of recruitment	-.165 (.166)	-.334••• (.124)	-.027 (.140)	-.431••• (.152)	-.144 (.170)
Presence of Christian mission in area	1.360••• (.315)	.337 (.230)	.863••• (.282)	.655•• (.297)	1.161••• (.323)
Size of British military presence	-.559••• (.172)	-.798••• (.157)	-.483•• (.190)	-.789••• (.158)	-.525••• (.175)
Days since last festival	-.127•• (.049)	-.153•• (.072)	-.124 (.077)	-.152••• (.053)	-.179••• (.065)
Days since festival X Log distance from place of recruitment	-.058••• (.017)		-.062••• (.019)		-.060••• (.017)
Days since festival X Presence of Christian mission	-.151••• (.043)		-.141••• (.047)		-.131••• (.039)
Days since festival X Size of British military presence	-.067••• (.025)		-.094••• (.030)		-.085••• (.026)
Constant	-4.633••• (.654)			-2.939••• (.730)	-2.951••• (.743)
Effects on duration dependence:					
(Ancillary) Days since last festival	.001•• (.000)			.000• (.000)	.000••• (.000)
(Ancillary) Log distance from nearest last mutiny	.004••• (.001)				
(Ancillary) Days since previous mutiny	.000 (.000)				
(Ancillary) Constant	-.015••• (.004)			-.022••• (.004)	-.024••• (.004)
Time varying covariate in Cox model: Days since last festival		.000 (.000)	.000 (.000)		
Overall model fit:					
Akaike information criterion (AIC)	-130.83	974.44	956.18	-194.98	-215.44
D.f. for AIC	22	15	18	17	20

• p<0.1, • p<0.05, ••• p<0.01, two-tailed tests. * Robust standard errors are in parentheses. Except for clocks and dummies, variables are used in their standardized form.

Figure 1. Muharram festival procession in Baroda.
This photographic print by an anonymous photographer, 1880, shows a Muharram procession with several "taziyas" being carried through the streets. Copyright British Library, London; reproduced with permission
http://www.bl.uk/onlinegallery/onlineex/apac/photocoll/m/largeimage55775.html.

Figure 2. "Ram Leela Mela ["Fair"]. As Performed before the Raja of Benares."
This lithographic print by James Prinsep, 1834, describes the Ramleela gathering, where stories from the epic Ramayana are being enacted and fireworks being lit ceremonially. Available in the public domain under a commons license from the British Library, London; archived online at http://commons.wikimedia.org, and at http://www.bl.uk/onlinegallery/onlineex/apac/other/019xzz000007513u00004000.html.

Figure 3. Histogram of mutiny events by days since religious festival.

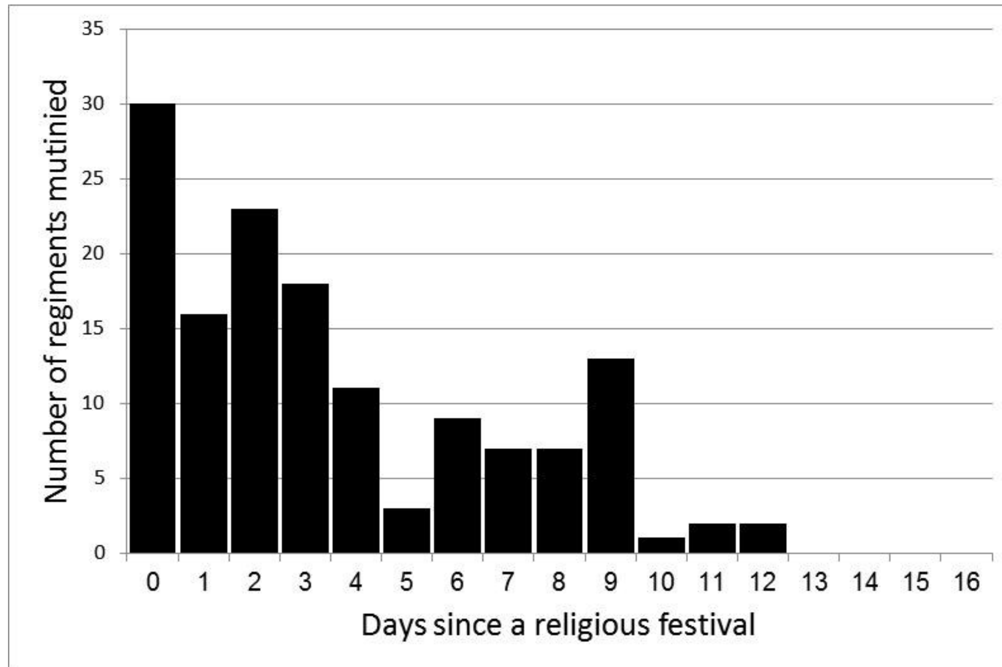


Figure 4. Interaction between days since festival and log distance from place of recruitment.

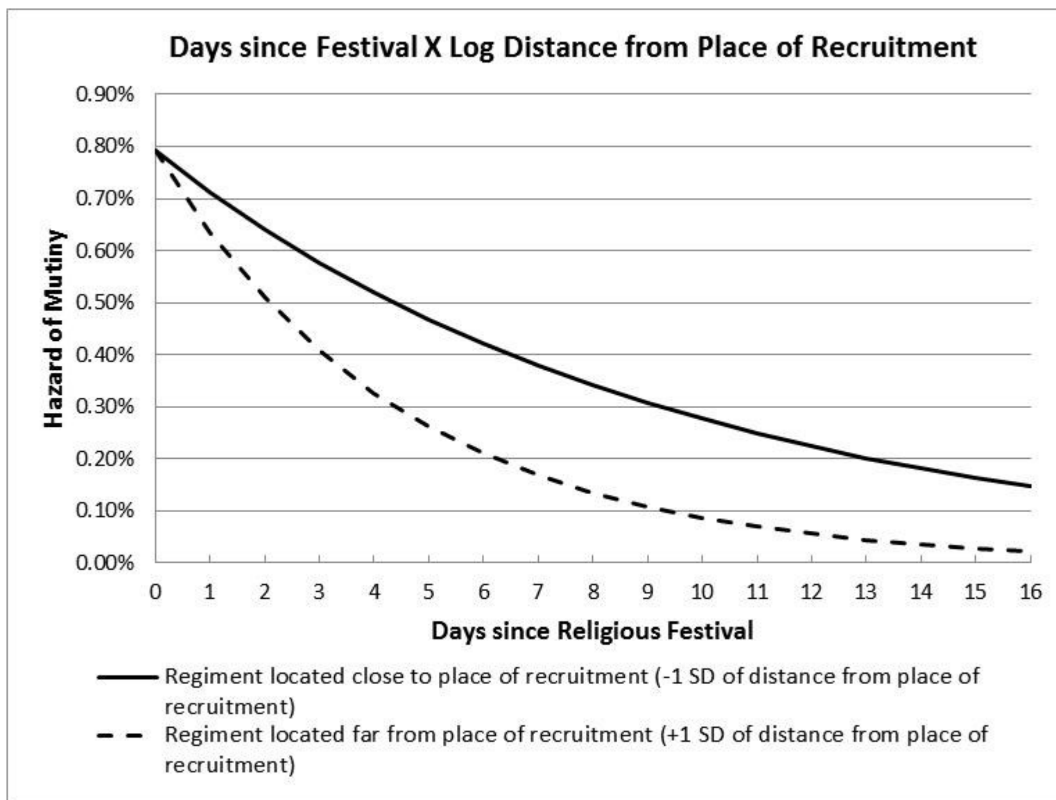


Figure 5. Interaction between days since festival and presence of Christian mission.

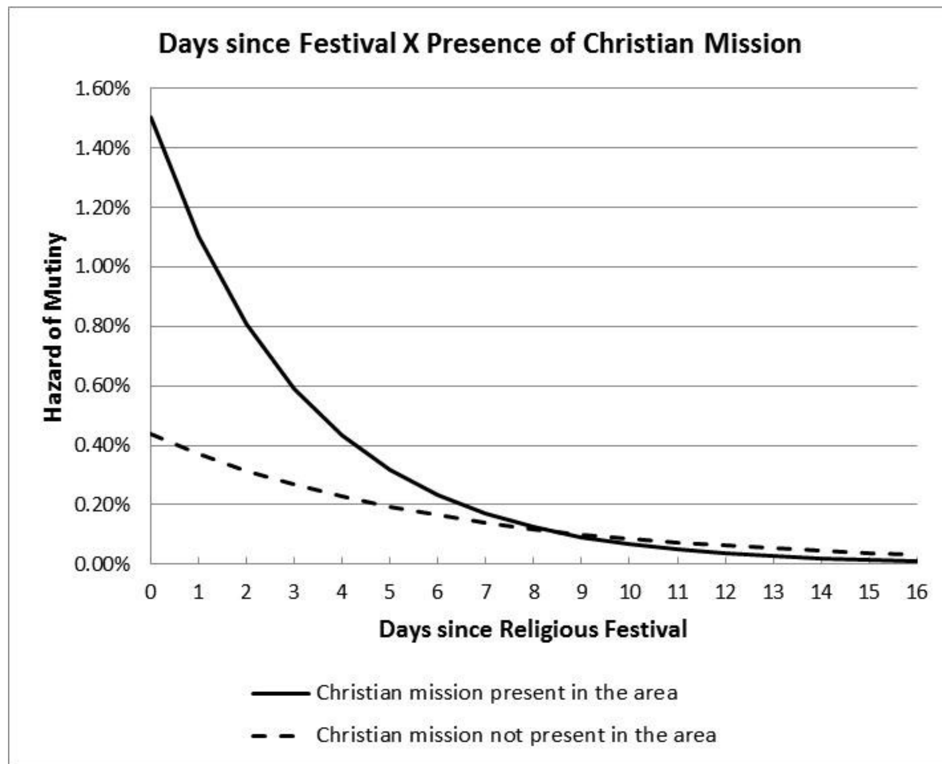
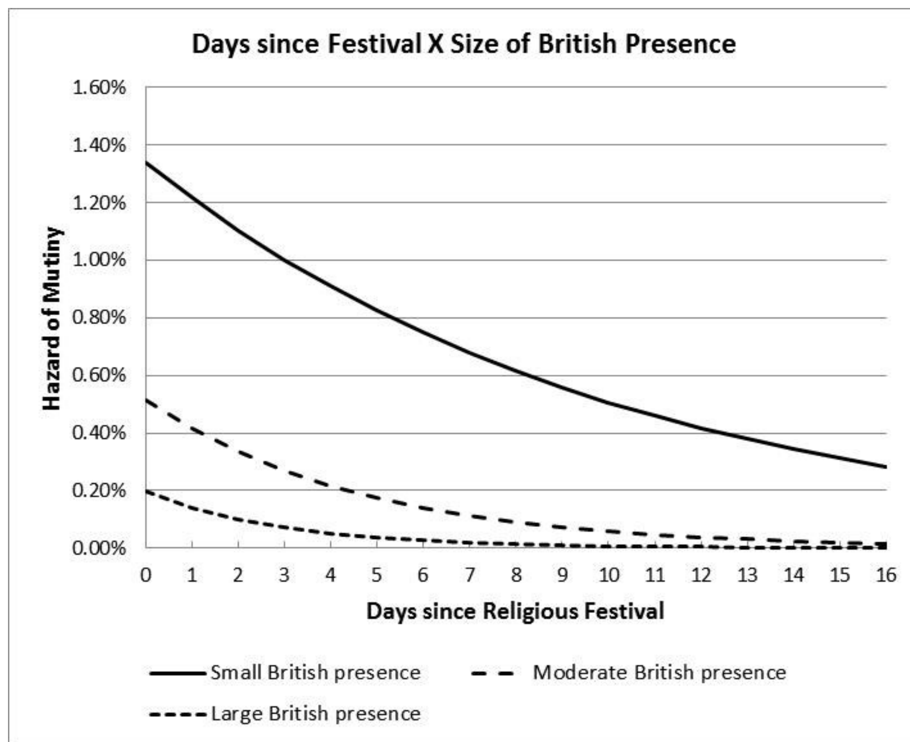


Figure 6. Interaction between days since festival and size of British presence.



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