

# Trade, institutions and religious tolerance: evidence from India

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## Abstract

This paper analyses the incentives that shaped Hindu and Muslim interaction in India's towns from the rise of Islam to the rise of European intervention in the 17th century; it argues that differences in the degree to which medieval Hindus and Muslims could provide complementary, non-replicable services and a mechanism to share the gains from trade has resulted in a sustained legacy of religious tolerance. Due to Muslim-specific advantages in Indian Ocean shipping, incentives to trade across ethnic lines were strongest in medieval trading ports, leading to the development of institutions to support inter-religious exchange.

Using new town-level data spanning India's medieval and colonial history, this paper finds that medieval trading ports were 25 percent less likely to experience a religious riot between 1850-1950, two centuries after Europeans eliminated Muslim advantages in overseas shipping. Medieval trading ports continued to exhibit fewer and less widespread religious violence during the Gujarat riots in 2002. The paper shows that these differences are not the result of variation in geography, political histories, wealth, religious composition or of medieval port selection, and interprets these differences as being transmitted via the persistence of institutions that emerged to support inter-religious medieval trade. The paper further characterises these institutions and the lessons they yield for reducing contemporary ethnic conflict.

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# 1 Introduction

On February 27th, 2002, a carriage of the *Sabarmati Express* carrying Hindu activists caught fire at Godhra railway station in the western Indian state of Gujarat. At least 58 people were burnt alive. In the weeks that followed, towns throughout Gujarat succumbed to religious violence that claimed at least 800 lives by mid-April and forced 98,000 people into refugee camps. The city of Ahmadabad, particularly in its medieval precincts, experienced 24 days of rioting that took the lives of more than 324 people. Once Mahatma Gandhi's headquarters for non-violent teaching, Ahmadabad has since become notorious for the frequency and intensity of its religious conflict.

The patterns of violence in Ahmadabad stand in sharp contrast to those that prevailed in Surat, a historic port city just 140 miles south. Surat too, is divided into an old medieval city and newer settlements. Surat's proportion of Muslim residents, at 12.3 percent, mirrors Ahmadabad's 13.0 percent (Census of India 2001). Yet, over the course of the 20th century, Surat witnessed virtually no religious violence. Even in 1969, when most other large Gujarati cities, particularly Ahmadabad, succumbed to religious rioting, Surat was unaffected (Engineer 1995, Varshney 2002).<sup>1</sup> It took the destruction of the Babri Mosque in Ayodhya in December 1992 to end Surat's unusual record of religious peace, when six days of rioting left 175 dead. Following the Godhra incident ten years later, Surat also experienced six days of violence that led to at least nine deaths. Yet, unlike in Ahmadabad, where riots are often been concentrated in the old city, Surat's riots have largely been focused in newer migrant settlements (Varshney 2002). Despite possessing many attributes that commonly correlate with religious violence, Surat's reputation as an "oasis of peace" persists.<sup>2</sup>

Being relatively poor and housing Hindus and Muslims in close and crowded proximity, the medieval-era precincts of India's cities are often cited in the popular press and by academics as natural repositories for religious tensions that routinely explode into violence.<sup>3</sup> Indeed, the potent relationship between poverty, ease of insurgency and ethnic violence found in studies at the cross-country level (Fearon and Laitin 2003, Miguel, Satyanath, and Sergenti 2004) seem to find ample validation in the crowded precincts of India's towns. Hindu-Muslim violence has resulted in more than 40,000 deaths or injuries

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<sup>1</sup>Between 1885 and 1985 Surat experienced two incidences of Hindu-Muslim violence, with one death in each case. In 1985-1986, when another wave of violence combining religious and inter-caste tension hit Gujarat, Surat's riots were between castes rather than religions (Varshney 2002)[p228].

<sup>2</sup>This term was used to describe Surat during the Gujarat riots of 2002 by the Times of India editorial page, February 1st, 2007.

<sup>3</sup>See Engineer (1988) on Delhi, Vadodara and Hyderabad, Das (1990a)[p.65] on Delhi. For Aligarh, Brass (2003)[p.162-3] cites *Upar Kot*—the walled medieval city or "the upper fort" as the location for all 29 *mohallas* (neighbourhoods) prone to religious violence in 1978.

since 1947, the overwhelming majority in towns and cities.<sup>4</sup>

However, the aggregate statistics of religious violence in India mask a great diversity in Hindu-Muslim relations. Even within Gujarat, one of India's wealthiest states, the contrast between the relatively peaceful old city of Surat and its newer settlements and the violence throughout Ahmadabad city suggests that old towns in India exhibit patterns of religious conflict that are not completely explained by factors commonly associated with ethnic violence: the incidence of poverty, ethnic composition, state or town-level electoral incentives or even rioters' ability to avoid the police. Understanding how communities that have all the ingredients for conflict still succeed in maintaining tolerance may provide insight into how other communities may do the same.

This paper analyses the different incentives that shaped Hindu and Muslim interaction in India's towns from the rise of Islam in the 7th century to the rise of European involvement in the 17th century, and argues that differences in the degree to which Hindus and Muslims could provide one another with complementary, non-replicable services in this period has led to a sustained legacy of contemporary religious tolerance and integration. The paper finds that medieval trading ports—where Muslim advantages in accessing Indian Ocean trade routes provided such complementarities during this period—were 20-30 percent less likely than otherwise similar towns to experience a religious riot between 1850-1950, two centuries after Europeans eliminated Muslim advantages in overseas trade. Between 1850 and 1950, medieval port towns also lasted significantly longer without an outbreak of religious rioting. Though these differences have diminished over time, Gujarati medieval trading ports continued to experience fewer riots and exhibited less widespread religious rioting in the aftermath of the burning of the *Sabarmati Express* in 2002.

The paper provides evidence that these differences are not the result of variation of factors often suggested to explain ethnic violence, including differences in geography, political histories, wealth and ethnic composition. The paper further establishes that the results are not driven by unobserved differences emerging from the selection of medieval ports. Due to heavy silting of inlets and river mouths due to the monsoon rains, India's coasts have shifted over time, and a number of medieval ports that were at natural harbours historically are now landlocked. Those towns that became ports because of their location at natural harbours in the medieval period exhibit similar patterns of reduced religious violence as other medieval ports. Instead, the paper suggests that

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<sup>4</sup>Steven Wilkinson and Ashutosh Varshney (2004) calculate that 93 percent of religious riot deaths occurred in urban areas (settlements with above 5000 in population that possess a municipality) between 1950 and 1995. As the authors discuss, this figure may be subject to reporting bias, due to the greater likelihood of counting urban deaths.

the continued differences in religious violence between medieval ports and other towns reflect the persistence of institutional mechanisms that emerged to support inter-religious medieval trade. The paper characterises these mechanisms and the lessons they may yield for reducing contemporary ethnic conflict.

This work follows in a rich intellectual tradition on evaluating the long-term effects of historical institutions (Acemoglu, Johnson, and Robinson 2001, Banerjee and Iyer 2005). By stressing the central role of inter-ethnic complementarities in encouraging cooperation and discouraging conflict between ethnic groups, this paper introduces a new dimension into studies that have sought to understand the role of ethnicity as a determinant of civil conflict and public goods provision (Horowitz 1985, DiPasquale and Glaeser 1998, Montalvo and Reynal-Querol 2005). The paper suggests that without considering the structure of economic incentives for exchange and violence between ethnic groups, factors may be being omitted that can dramatically alter the impact of ethnic heterogeneity on modern indices of peace, public goods provision and growth.

In the Indian context, this paper builds upon important works by political scientists that have recognised the vital role of institutions in religious violence. Brass (2003) finds the existence of what he terms “institutionalised riot systems,” concerted action by local elites to maintain fissures along religious lines, for local, sometimes electoral, gain. Wilkinson (2004) focuses upon the state-level incentives for fomenting and responding to religious violence. He finds that when elections are close, riots are used by politicians to reaffirm religious identities and thus to sway votes. Varshney’s (2002) work provides a useful counterpoint to the work of Wilkinson and Brass. Varshney focuses on the importance of cross-religious social capital or “civic engagement” in defusing religious tension. “Peace committees” develop from existing cultural, political or business groups, that cross religious lines.<sup>5</sup>

These three works provide valuable insights into the proximate causes of religious violence in contemporary India. This paper complements these studies by analysing the historical incentives that led to the contemporary institutional environment they describe. This paper argues that contemporary inter-religious civic engagement, close religiously-delineated elections and religious violence are all in part the legacy of more than a thousand years of incentives for exchange between religious groups in India’s

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<sup>5</sup>Varshney’s use of pair-wise case studies is especially illuminating. Each pair consists of one town where religious riots are rare: Calicut, Lucknow and Surat—and one where they are common: Aligarh, Hyderabad and Ahmadabad. It is reassuringly consistent with the theory outlined here that two of the three cities that Varshney identifies as enjoying high levels of civic engagement—Calicut and Surat—were once major medieval trading ports and the three cities where civic engagement between Hindus and Muslims ultimately failed—Aligarh, Hyderabad and Ahmadabad—were centres of Muslim political patronage where Muslim clients acted as substitutes for Hindu clients.

towns.

Finally, this paper resolves an important paradox that concerns the effects of trade on tolerance. At least as early as Montesquieu, philosophers have argued that commerce encourages civility between individuals, as the loss of trade makes conflict more costly (Hirschman 1977)[pg.78,95]. Yet, historical and contemporary examples abound of even the most commercially-oriented minority groups becoming repeated targets of ethnic violence and expropriation (Benbassa and Rodrigue 2000, Landa 1994, Chua 2003). By outlining the conditions that favour peaceful exchange between groups over time, this paper shows the limitations of trade as a means of reducing ethnic tension, while also pointing to potential policy interventions that may bolster the effects of trade in encouraging inter-ethnic peace.<sup>6</sup>

Section 2 characterises the nature of incentives favourable for maintaining peaceful co-existence between ethnic groups over time. It then confirms that from the 7th century to the 17th century, the incentives for overseas medieval trade between Hindus and Muslims match this characterisation, and provides a taxonomy of the institutions that emerged to support these incentives. Section 3 describes the empirical strategy. Section 4 presents results from religious conflict across India between 1850 and 1950, as well as for the particular case of the Gujarat riots of 2002, drawing upon a new town-level dataset that combines data on medieval trade and political structures with colonial-era indicators of demography, development and conflict. Section 5 concludes.

## 2 Incentives for peaceful co-existence in the medieval Indian Ocean

A simple theoretical model can be used to illuminate why Hindus and Muslim traders enjoyed an enduring environment of peaceful co-existence in the Indian Ocean when many other commercial ethnic minorities have not. It is useful to provide an intuitive sketch of the model and its relevant predictions (please see Jha (2007b) for details of the formal theory).

The model focuses on settings where there are two types of agents: “local” and “non-local”. “Non-locals” differ from locals only in that they have better outside options. In the case of medieval India, “non-local” Muslim traders enjoyed resources, including

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<sup>6</sup> This problem has some parallels with the literature on trade and conflict between nations (see Polachek and Seiglie (forthcoming) for an overview). A crucial distinction is that unlike most trading nations, individuals living in the same town tend to have similar or replicable factor endowments and thus a key challenge is to maintain complementarity over time. The comparative advantages of each nation are generally assumed.

information and networks, that linked them to the Middle East and the rest of the Islamic World. These external resources made it less costly for Muslims to leave a particular town and go elsewhere. In contrast, the resources of “local” Hindus tended to be also concentrated locally.

In the model, individuals from either group have the following choices every period: to stay or leave town, to produce a good for exchange, and to attack any other agent that they encounter. Such violence is destructive, but violence may be useful for seizing the victim’s property and to deter or punish the victim’s actions. “Strong” individuals may exist who are more likely to prevail in a violent attack against weaker opponents. The model can be used to find conditions that favour “peaceful co-existence” over time: an equilibrium with a mixed population of locals and non-locals, full production, no out-migration and no violence.

In the environment above, an important condition that favours peaceful co-existence is that non-locals and locals produce complementary goods or services. To see this, consider first the alternative: that locals and non-locals provide substitute goods and thus are competitors. Then, with repeated interactions, a strong local will have an incentive to attack weak non-locals, as this allows that local not only to seize the non-local’s property but also to encourage non-locals to leave, reducing the future competition the local faces. In fact, non-local competitors provide more attractive targets of violence than weak locals, as local competitors are harder to drive out of town due to their lower outside options. Thus societies where local and non-local groups compete are likely to exhibit greater *ethnic* violence.<sup>7</sup>

In contrast, when ethnic groups provide complementary goods or services to one another, then the incentive to attack non-locals falls over long time horizons. If non-locals leave if attacked, locals will face reduced supply and higher future relative prices for goods that only non-locals can provide. The more that non-local goods increase the value of local goods, the more valuable the presence of non-local suppliers and the lower the incentives for ethnic violence.

Thus inter-group complementarity can support peaceful co-existence over time. However, even with repeated interactions, peaceful co-existence will fail if members of one group are able to cheaply replicate or violently seize the resources that make members of the other group desirable trading partners. Therefore, to sustain peaceful co-existence over time, it is necessary for the source of each group’s complementarity to be difficult for others to acquire. Complementarities emerging from expropriable assets such as wealth,

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<sup>7</sup>For an alternative theory for why ethnic violence is more likely to occur than class violence, see Esteban and Ray (2007). For evidence on economic competition and ethnic violence in the United States, see Olzak (1992).

machines or land, or even artisanal skills and other forms of human capital that may be replicated, can therefore fail to sustain peaceful co-existence in the long term.

Furthermore, in settings where the non-local group is a small minority, even such “robust” complementarities may be insufficient to maintain peaceful co-existence. With few competitors, members of a minority group that provide non-replicable complementary services will enjoy high relative prices and in many cases substantial profits. This has been a common feature in the histories of many ethnic minority trade networks. Particularly in times of resource shock or crisis, when strong locals discount the future more highly relative to the present, such high profits may result in a temptation for agents to engage in violence to seize these profits even at the cost of losing future gains from trade.<sup>8</sup> Thus the maintenance of peaceful co-existence over time will benefit from mechanisms that redistribute the surplus between groups and reduce incentives to expropriate.<sup>9</sup>

From the 7th century to the 17th century, Muslim traders involved in transoceanic commerce satisfied all three of these conditions. First, there were Islam-specific advantages to trade across the Indian Ocean. Pilgrimages, particularly to Mecca, coordinated the development of the world’s largest textile market during the Hajj (Lombard 2000). The Hajj was supplemented by pilgrimages (*ziyaret*) to other sites, such as Fustat (Cairo), Kerbala, Basra and in Hadramaut (Yemen), that all fostered regional trade. Muslims had strong preferential access to these pilgrimage routes, and the markets they induced.<sup>10</sup> Islamic laws were also conducive for medieval trade expansion (Rodinson 1972, Kuran 1997).

Second, Muslim advantages in oceanic trade stemmed from preferred access to trade

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<sup>8</sup>See e.g. Landa (1994) for a discussion of how high relative prices and the resultant wealth led to an expropriation of the Chinese in Southeast Asia, and Chua (2003) for many other examples around the world.

<sup>9</sup>As discussed in more detail in Jha (2007b), a rational response by minority members is to engage in greater transfers to the strongest locals, for whom the constraint not to engage in violence binds first—often the local ruler. “Protection” by dictators has been a common feature of the histories of many market-oriented ethnic minorities in both medieval and contemporary developing country settings (Chua 2003, Benbassa and Rodrigue 2000). However in these settings, equilibria can exist where elites demonstrate their “protection” of minority groups and thus extract greater long-term transfers by intermittently allowing pogroms by weaker locals.

With sufficient coordination within the minority community, a more efficient equilibrium may also exist where non-local minorities provide public goods that benefit the local group as a whole, as well as providing lower transfers to the elite. Such a pattern of transfers reduces the incentive by non-elites to engage in pogroms, as well as reducing the ability of rulers to extract transfers over the long term. Thus they are incentive-compatible for minority members. Such strategies have historically been employed by highly organised minority groups.

<sup>10</sup>The fate of Ludovico di Verthema (1503), who visited Mecca disguised as a Muslim, illustrates this preferential access. Exposed as a Christian in the holy city, he was sold as a slave to a merchant travelling to India. The chronicles of his journeys provide useful contemporary detail on the port towns of early 16th century India.

networks. A key characteristic of trade networks is that they enjoy increasing returns to scale. The remarkable scale of the Hajj in particular was such that it was prohibitively costly for even a substantial number of Hindus to replicate. Since trade networks are also intangible, they were also impossible for Hindus to steal. Oceanic trade was unlike land-based or riverine trade routes in this manner, as most long distance land-based trade can be divided into relays of shorter distances, each of which can be replicated by a member of the local group.<sup>11</sup> Most sea trade routes, however, cannot be replicated in relays. It is therefore at towns with direct access to the Indian Ocean that Muslim advantages in Middle Eastern trade became most relevant and gains from exchange between Hindus and Muslims were most pronounced.<sup>12</sup> Even at the height of Muslim power, Hindu and Jain merchants still maintained a strong presence in land-based commerce within India.

Third, Muslims had access to an inherent mechanism of redistribution of the surplus from trade to the local population: increased intra-Muslim competition due to the relative ease of entry by any Muslim into Indian Ocean trade. Unlike most kin-based trade networks that have high barriers to entry, entry into Islamic trade networks was relatively cheap for all Muslims. Pilgrimages provided a clear coordination device, so that even non-merchant and newly converted Muslims could enter trade; family or community ties were not necessary to follow established pilgrimage routes, and indeed many pilgrimages were financed through trade (Ibn Battuta 1355, di Verthema 1503, Lombard 2000). Though trading “communities” did emerge, members of these communities often were in economic competition either within their own communities or with other Muslim trading communities (Penrad 2000, Subrahmanyam 2000).<sup>13</sup> Incipient and actual entry by Muslim competitors could improve the terms of trade for the local population whenever relative prices for non-local goods became too high.

By satisfying these three conditions, trading ports in the Indian Ocean were well-favoured to provide geographical loci for peaceful co-existence and trade between Hindus and Muslims. From the 7th century onwards, Muslims, both immigrants to India and indigenous converts, dominated the shipping trade in the Indian Ocean and Muslim trad-

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<sup>11</sup>In the Indian context, for example, a Hindu trader in inland Aligarh who sought to sell to markets in the Middle East would not be forced to rely on a Muslim in Aligarh, but could hire a Hindu merchant to transport his goods to the coast.

<sup>12</sup>Sizeable colonies of Hindu and Jain traders were established in some parts of the Middle East - particularly neighbouring territories of Persia and Iraq. The French trader, Jean de Thevenot (1633-1667) noted the presence of *bania* moneylenders in Isfahan, Basra and Hormuz (Mehta 1991). However, shipping was dominated by Muslims, and the great textile mart at Mecca remained exclusively Muslim (di Verthema 1503).

<sup>13</sup>Though Muslims dominated shipping, other Middle Eastern communities, including Jews and Armenians, were also involved in the Middle Eastern trade and participated in the Karimi convoys across the Indian Ocean (Goitein 1966).

ing networks expanded along both coasts (Arasaratnam 1994, Dasgupta 2004). Muslim dominance of overseas trade continued for close to a thousand years. Though the Portuguese discovery of routes to the Indian Ocean in 1498 did not entirely disrupt the flow of trade, the Portuguese did destroy the commerce of a number of key trading ports, often via blockade (al Malibari 1528, Barbosa 1519). The end of Islamic trade dominance was further expedited in face of increased competition by the Dutch and English, and the disintegration of the Mughal empire (Dasgupta 1998).<sup>14</sup> Mughal ports, such as Masulipatam, Surat and Hughli, gave way to competition from Madras, Calcutta and Bombay (Dasgupta 2004). Muslim trading networks continued to be important in trade with Southeast Asia and Zanzibar, but the expansion of colonial rule to these regions brought with it competition from non-Muslim traders operating under colonial protection (Bose 2006). By the end of the 17th century, the era of Muslim trade dominance in the Indian Ocean was long over, and many medieval trading ports ceased to be commercially important.

Thus, for over a thousand years, inter-group complementarities existed between Hindus and Muslims in medieval trading ports. Yet, during this period, peaceful co-existence could still be threatened by shocks over time. Examples include resource or political shocks that threatened the survival of strong locals, such as emerged with the increased instability of regional kingdoms and the Mughal empire, or the exogenous development of new substitutes to Muslim shipping, such as occurred when the Europeans discovered routes to the Indian Ocean. During this period, higher mutual incentives existed in medieval ports than other towns for residents to invest in complementary mechanisms to maintain the incentives for peaceful co-existence even in the presence of such shocks.

Insofar as these investments, once created, were costly to reverse by any individual agent, they can be considered part of the “institutional” environment that shape an agent’s subsequent incentives for peaceful co-existence. Such institutional mechanisms appear to have persisted in shaping Hindu-Muslim interaction at medieval ports long after the decline of Muslim advantages in trade that initially encouraged them to develop.<sup>15</sup>

Table 1 summarises the forms that these mechanisms took in different regions of India. Institutional mechanisms to support peaceful co-existence seem to fall into two categories. One set of mechanisms redistributed the surplus from exchange between groups in the form of explicit transfers from the minority to the majority community. Another set raised the exchange surplus, whether by increasing the opportunities for future interaction through social and residential mixing, or by bolstering inter-group complementarity and

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<sup>14</sup>As early as 1621, the English were exporting pepper to the Levant, rather than importing it.

<sup>15</sup>The role of complementary investments in generating path dependence is explored in Milgrom, Qian, and Roberts (1991). Greif and Laitin (2004) provide a general theory of institutional persistence.

enhancing the surplus from exchange through between-group specialisation and religious proscriptions on members of one group encroaching on the speciality of the other.<sup>16</sup>

However, the form taken by inter-religious institutional mechanisms has differed across ports. For example, Muslim traders in Calicut and Surat showed (and continue to show) evidence of social and residential integration.<sup>17</sup> These cities are also notable for the presence of contemporary mechanisms, such as inter-religious peace committees, for defusing conflict (Varshney 2002). On the other hand, Muslim traders in the Coromandel Coast lived in more segregated communities; instead they engaged in explicit transfers to the majority community by endowing Hindu temples (Eaton 1993, Bayly 1989). Indeed, though social and residential integration between members of different religions does appear to have provided an important institutional mechanism in historically larger ports, explicit transfers from Muslim traders to the broader community appears to be the common feature among ports which attracted relatively fewer Muslim traders.<sup>18</sup> This pattern is consistent with the argument that ports with more potential for exchange encouraged more entry and thus more competition within the Muslim community. Ports with less competition had greater need for mechanisms of redistribution.

In direct contrast to the robust complementarities visible at medieval trading ports were the incentives present in towns that were the centres of Muslim patronage, where Hindus and Muslims acted as *substitutes* for one another and competitors for patronage. Concurrent with the spread of medieval trade, Muslim political control began to expand into India. With the conquest came control of patronage and land revenue systems, based upon control of the surplus from India's mainly agricultural wealth. These patronage

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<sup>16</sup>An important example of specialisation- supporting institutions is the norm of *Kaala-paani*: that Hindus that ventured across the “black water” offshore would lose their caste. This institution, though common to many Indian sea ports, was particularly prevalent in Calicut and other ports in Malabar (Bouchon 2000). In contrast to Malabar, it is interesting to note that the *Kaala-paani* proscriptions on Hindu travel overseas were not widely followed in Gujarati ports until Muslim dominance of overseas trade began to decline. Thus it may be that these institutions were established as a response to growing competition between groups. In contemporary Surat, Muslims and Hindus have continued to adopt complementary roles in production, long after the demise of Surat's trade. Diamond-cutting is almost exclusively conducted by Muslim workers, while other parts of the same production process are handled by Hindus and Jains. For other examples, including on restrictions on Hindu entry into the agate trade in Cambay, see Mehta (1991).

<sup>17</sup>As one respondent from the Bohra (traditional Muslim trading) community in Surat told the author in 2007: “When we went to our apartment complex in Nanpura [a predominantly non-Muslim neighbourhood], they asked us “are you ‘H-Class’ [Hindu] or ‘M-Class’ [Muslim]? When I said I am ‘M-Class’, they refused to rent to us. But then I said I was [a] Bohra, and they said ‘in that case, you are welcome.’”

<sup>18</sup>An important example is that of the trading port of Veraval, adjacent to the Hindu pilgrimage centre of Somnath. Temple authorities were willing to provide land on their own grounds to a Muslim trader to build a mosque, not long after Mahmud of Ghazni sacked the temple in 1026, a event long perceived to have resulted in a massive deterioration in Hindu-Muslim relations in the area. Hindu temple authorities encouraged Muslim traders as taxes on commerce provided a major component of their revenues. Such inter-religious transfers were a common practice in many medieval ports in Gujarat (Thapar 2004).

Table 1: Taxonomy of institutions in Indian medieval ports

Coast	Port	Muslim trading groups	Strong community organisation	Modern religious specialisations	Hindu restrictions on overseas travel (Kaalapaani)	Transfers	Inter-religious organisations/celebrations	Inter-religious residential mixing	Sources
Gujarat	Bharuch, Khambhat, Somnath-Veraval, Surat	Daudi Bohras, Nizari Ismailis (Khojas), Sidis	yes (among Bohras, Ismailis)	yes: agate (Cambay), diamond-cutting (Surat)	yes, from 18th C.	yes: temple commerce taxes (Somnath-Veraval)	yes: guilds (Surat), celebrations (Surat)	yes	Imperial Gazetteers (19-20C), Periplus M. Erythraei (4C), Varshney (2003), Gandhi (1932), Blank (2000), Thapar (2005), Mehta (1991)
Central West	Bhatkal, Honavar, Dabhol, Mangalore	Nawayats, Bearys	yes	no	no	yes	-	no	Imperial Gazetteers (19-20C), Yule (19C), Ibn Battuta (14C), Barbosa (16C)
Malabar	Calicut, Cochin, Cannanore, Quilon	Mappilas	no	-	yes, during medieval period	yes	yes (including coronations)	yes	Periplus M. Erythraei (4C), Bouchon (2000), Ibn Battuta (14C), Zayn al Din (16C), Barbosa (16C), Fryer (17C)
Coromandel	Kilakkara, Kayal, Masulipatnam, Negapatnam, Tuticorin	Marrakaiyars, Labbais	yes	yes	no	yes: endowment of temples	yes (including Muslim consort in temple)	no	Arasaratnam (1994), Bayly (1985), Subrahmanyam (1990)
Orissa/ Bengal	Balasore, Cossimbazar, Chittagong	Gujarati, indigenous	-	-	no	-	-	-	Imperial Gazetteers (19-20C)

systems were concentrated in towns, many of which were established by the *fiat* of the Muslim rulers themselves (see Figure 1) (Naqvi 1968, Raychoudhari 1998).<sup>19</sup>

In areas of the country under long periods of Muslim rule, conversion provided a means to avoid implicit and explicit religious taxation and to join the political patronage system.<sup>20</sup> In medieval Indian kingdoms, political and religious patronage played a very important role. Though not necessarily members of the royal household themselves, the majority of the city’s population was tied by client relations to people who were.<sup>21</sup> Once flourishing cities that lost their roles as political centres rapidly became ghost towns.<sup>22</sup>

Following the Muslim conquest, it is likely that Muslim clients, both converts and immigrants, substituted for and competed with Hindu clients for patronage. Though vertical inter-religious links existed between Hindu artisans and Muslim patrons, such ties were often in competition to intra-Muslim patron-client relations. Though the Hindu and Muslim artisans that constituted the majority of the populations of these cities lived side by side, there was no incentive for inter-religious exchange between these groups.<sup>23</sup> Thus,

<sup>19</sup>Christopher Bayly (1983)[p.52] estimates that during the Mughal period roughly 40% of the revenue from crops flowed directly to the Imperial household in Delhi.

<sup>20</sup>In the 17th century, *Jizya*, the religious poll-tax, represented roughly a month’s wage for an urban labourer, and may have provided around 15% of state revenues (Chandra 2003).

<sup>21</sup>Thus, when the Mughal Emperor Aurangzeb went South to campaign in the late 17th century, it was not unusual that four of five of Delhi’s 400,000 residents left with him (Blake 1991).

<sup>22</sup>e.g. Daulatabad, Tughlakabad and Fatehpur Sikri.

<sup>23</sup> The walled city of Delhi, Shahjahanabad, founded in 1638 as the capital of the Mughal empire, still appears to exhibit these features. In my fieldwork there, I found Muslims largely concentrated in separate *mohallas* near the Jama Masjid, the Fatehpuri Masjid and *Ballimaran*. Distinct styles of clothing, the focus of community common space around the mosque and stalls that advertise using Arabic

despite the fact that, like medieval ports, political centres provided historical incentives for conversion to Islam and enjoyed historical wealth, patronage centres were the historical focus of inter-religious competition rather than inter-religious complementarity. Thus patronage centres were unlikely to develop institutions to support religious tolerance.

### 3 Empirical strategy

As described above, the “robust” complementarities between Hindus and Muslims in India’s overseas ports were largely created by exogenous features, particularly the Hajj, that were inherent to Islamic doctrine. Such complementarities made medieval trading ports conducive to inter-ethnic exchange and favourable for further investment in institutional mechanisms that bolstered such exchange.<sup>24</sup>

My empirical approach will be to use those towns that became medieval trading ports as an indicator of the “treatment” of historic incentives for inter-ethnic trade. The ideal comparison would measure the difference in Hindu-Muslim relations between a town that enjoyed such incentives and the same town that did not. In the absence of such a counterfactual, I will construct a series of control functions that mimic such a counterfactual town under two sets of assumptions.

First, I assume that the selection of medieval trading ports was uncorrelated with subsequent religious interaction. This assumption will be violated if medieval ports differed in important respects in their initial conditions that might also have had an effect on religious violence, for example, through congenial geography that provided increased opportunities for subsequent wealth. Thus, I add a rich set of controls for initial conditions that might have such an effect, including polynomial controls for longitude and latitude, propensity for natural disasters, and proximities to navigable rivers and the coast. Conditional on these factors, I can estimate the average treatment effect of medieval trade on religious conflict in those towns that enjoyed medieval trade.<sup>25</sup>

The second approach will be to relax the assumption that the selection of medieval ports was uncorrelated with subsequent religious violence, and instead instrument for medieval port location using the presence of natural harbours on the historical coastline.

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script (Urdu) rather than Devanagari (Hindi) provide overt indicators of the religious composition of the *mohalla*. See also Noe (1993) on Delhi and Brass (2003)[p.150-160] on Aligarh.

<sup>24</sup>Insofar as other towns-e.g. Banaras- also developed inter-religious institutions over time, the measured medieval port effect will under-estimate the effect of institutions in those ports on religious tolerance.

<sup>25</sup>A related approach would be to construct a propensity score for medieval trade based upon the observables, and compare medieval ports to towns that had similar propensities to become such ports. This approach leads to similar results to those that follow in some specifications, but is not robust to the choice of variables that determine the propensity score.

Given the severity of the monsoon winds, medieval ports— more so than their modern counterparts— needed to be located in naturally-protected inlets. These harbourages were typically located at inlets either formed by irregularities in the coastline or at the mouths of rivers (Arasaratnam 1994, Dasgupta 2004). However, the coast itself has moved over time. The massive flow of water from the hills during India’s monsoon rains regularly pushes large amounts of silt to the mouths of rivers and inlets. Over time this has meant that a significant proportion of towns that were at natural harbours in the medieval period have become inaccessible to shipping and some are in fact completely land-locked today.<sup>26</sup>

I develop a indicator of natural harbours on the historical coastline as an instrument for the selection of medieval ports. The exclusion restriction on the instrument may be violated if natural harbours on the historical coastline increased wealth through channels other than through increased favourability for medieval trade, and this wealth had a direct effect on religious relations. Thus I employ a set of controls for other potential channels through which natural harbours on the medieval coastline might have an effect on contemporary religious relations, including proximity to navigable rivers and the coast and the propensity for natural disasters. I can then exploit this instrument for medieval port location to identify the local average treatment effect (LATE), comparing the effect of medieval trade on modern religious conflict in towns with natural harbours in the medieval period to those towns that would have been medieval trading ports had they been at natural harbours (Imbens and Angrist 1994).

Looking at effects over such long periods of history raises a separate challenge that deviates from a canonical experiment: even controlling for initial conditions, towns under study were subject to differences in external political influences both during and after the treatment that might also influence subsequent religious relations. Some component of these political influences— e.g. the expansion of Muslim or European political rule— might have been in part a result of a desire to occupy regions with active medieval trade. To account for these political channels, I compare the effect of medieval trade both with and without a rich set of controls for these political factors. As we shall see, these controls do not have an important influence on the measured treatment effects.

One common approach that this study cannot adopt is to use medieval trade as

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<sup>26</sup>At the mouth of the Tapti river, Barygaza—a major port in classical times—was superseded by Khambhat, Surat and Gogha in succession. Similarly, silting led to the decline of Tamralipti at the mouth of the Ganges, followed in turn by Satgaon and Hughli. Palayakayal on the Coromandel coast was superseded by Kayalapatnam, while Muziris was replaced by Calicut (Arasaratnam 1994). Even contemporary dredging techniques (which of course were unavailable during the period of Muslim trading dominance) are unable to contend with the volumes of silt generated. Even the modern port of Calcutta is no longer accessible to most shipping, which has been diverted to the downriver town of Haldia.

an instrument for measuring the effect of proximate indicators of contemporary inter-religious institutions - e.g. social capital measures or religiously-polarised voting patterns- on religious violence. Even if a credible observable gauge of inter-religious institutions did exist-e.g. the incidence of inter-religious organisations in a city, or some measure of the degree to which individuals consistently vote along religious lines- the “instrument” would still fail the exclusion restriction. Part of the medieval institutional system is likely to take the form of unobservables, such as norms of tolerance or beliefs about each the majority members’ actions in bad times, that vary systematically and have a direct effect on religious polarisation (Greif 2005).<sup>27</sup> Such unobservable channels will always be missing from any measure of contemporary institutions, violating the exclusion restriction and rendering any estimates inconsistent.

A preferred strategy, therefore, is to use medieval ports as an indicator of the strongest past incentives to encourage inter-religious institutions.<sup>28</sup> As discussed above, robust complementarities in overseas trade between Hindus and Muslims facilitated inter-religious exchange, that should manifest itself in increased historical wealth, a more mixed population as well as institutional mechanisms that further support exchange. However, many medieval ports ceased to be important for trade during the 18th century. If it is the case that in the 20th century, medieval trading ports were poorer, and continued to have a more mixed religious composition– both commonly associated with more religious conflict– and *yet exhibited less religious conflict*, it provides evidence that the effect of a medieval trade legacy on contemporary religious conflict is not transmitted chiefly through wealth but rather through institutional mechanisms that persist from medieval trade.<sup>29</sup>

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<sup>27</sup>Beliefs over the actions of others appear to be a critical component of religious integration. As a member of the Bohra Muslim trading community told Blank (2001) following the Mumbai riots of 1993:

The Hindus know we aren’t involved in Babri Masjid, so they have no quarrel with us. When they see the *topi* [a characteristic hat worn by Bohras], they leave us alone. In past riots, the *goondas* [thugs] have even broken into a house, seen the photograph of His Holiness on the wall [the Bohras’ spiritual leader, the *Dai*] and immediately left– with apologies. pg.276

Yet, Blank also finds following the Mumbai riots that “nearly all (Bohras) expressed shock, surprise and mystification. As a general rule, Bohras tend to enjoy closer social relations with Hindus than they do with Sunnis, so they were entirely unaccustomed to the shift of alliances.” [pg.277].

<sup>28</sup>Given that we seek to measure the effect of historic inter-religious complementarities, all towns can be thought of as “eligible for treatment” in principle. Future work will explicitly assess other potential exogenous sources of inter-religious complementarity, including long-distance trade across deserts, which are also indivisible. However, it may seem reasonable to consider only towns that are relatively close to the coast to be eligible for incentives stemming from medieval overseas trade in particular. Using the sample of towns within 100km of the modern coast lead to similar results to those below.

<sup>29</sup>Future work will measure whether medieval ports are more likely than other towns to display other correlates of inter-religious institutions, including greater public goods provision, residential integration

## 4 Data

I collected data on historical trade in India's ports from a number of sources. The *Periplus Maris Erythraei* (Casson 1989) provided the locations of a number of pre-Muslim and early Muslim ports. The records of contemporary Muslim, Christian and Chinese observers, including Chau Jua-kua (1225), Marco Polo (1298), Ibn Battuta (1355), Ludovico di Verthema (1503), Duarte Barbosa (1519) and Zayn al-Din al Malibari (1528) provided supplementary evidence. These contemporary accounts were augmented by secondary sources, including Yule (1866), Subrahmanyam (1990), Dasgupta (1994), Chaudhuri (1995) and Chakravarti (2000). Finally, every town listed in the Imperial gazetteers of India from 1907 was examined for evidence of contemporary and medieval trade.

I identified a town as a medieval trading port if it exhibited substantive evidence of direct overseas trade, prior to the 18th century and independent of European involvement. This definition eliminates most river ports and those ports either founded by Europeans (including the Presidency towns of Bombay, Calcutta and Madras) or those that became overseas trading ports as a result of European establishments (e.g. Tranquebar).<sup>30</sup> I found a total of 68 confirmed medieval trading ports in undivided India, of which 42 continued to have populations greater than 5,000 in 1901 and 48 appeared as distinct towns in the 1991 India census.

These medieval ports were linked to their geographical location using ArcGIS. To categorize medieval era "natural harbours," I used the US Geological Survey Digital Atlas of South Asia (2001) to identify water bodies that were within 10km of the modern Indian coastline, including non-perennial ponds and streams and those without an outlet to the sea. If these water bodies intersected the coast in the medieval period, they would have produced minor inlets, or sheltered harbours.<sup>31</sup> I define towns within 10km of those water bodies as having had access to a "natural harbour." This approach identifies major irregularities and inlets that are likely to have existed in the medieval period.

I constructed a GIS of the districts in colonial India by tracing and then georeferencing pre-Independence district maps.<sup>32</sup> This GIS was used to link towns across district and state changes throughout history and across periods of British and Muslim rule.<sup>33</sup> I was

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and less polarised voting patterns.

<sup>30</sup>This strict definition also eliminates ports such as Hughli, that was founded by the Portuguese, but was later occupied by the Mughal empire and became its chief port in Bengal. It also eliminates ports, like Alleppey, that were founded in the 19th century by the Raja of Travancore to compete with the Dutch in Cochin. The use of looser definitions does not affect the results substantively.

<sup>31</sup>In addition, as discussed above, due to silting, a number of medieval trading ports, e.g. Balasore and Agashi, are on water bodies that lack an outlet to the sea.

<sup>32</sup>To my knowledge this is the first GIS of colonial India's district boundaries.

<sup>33</sup>Histories of the Muslim conquest, such as Ferishta (1620), allow me to calculate the length of Muslim

able to match all towns to their British district and Native state<sup>34</sup> and derive controls both for the contemporary colonial ruler and the length of British rule, if any (see Figure 2).<sup>35</sup>

In addition, I collected data from the Imperial gazetteers on a number of different natural disasters from 1850 to 1900, including droughts, earthquakes, locust infestations and floods and cyclones.<sup>36</sup> The cross-district patterns in propensity to face these natural risks are likely to have persisted throughout history. In addition, the Imperial gazetteers provided information on the revenue, religious composition and political histories of each district and many of India’s towns. The decennial censuses (beginning in 1872) and Imperial gazetteers yielded data, mainly at the district level, but also for larger towns, on religious demography, land and total revenues, municipal income, land tenure, as well as political histories. Ten-year averages of land revenue, based largely upon agricultural productivity, provide a gauge of the wealth in the district that is arguably exogenous to religious relations in the town. Municipal income per capita provides a town-specific measure of the average wealth of the town—it was based mainly upon a tax on internal commerce (octroi) and a poll tax with minimum wealth requirements.<sup>37</sup>

## 4.1 Religious riots in India, 1850-1950

The dataset on pre-Independence Hindu-Muslim violence, drawn from newspaper reports and official sources, is largely based upon that compiled by Wilkinson (2005c). In this dataset, a religious riot was defined as a violent confrontation by two communally-

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rule in various locations. Because conquests tended to be delineated by natural features, such as the River Tapti and the Western Ghats, it is possible to trace fairly accurately the progress of Muslim rule. A measure for every area of India was constructed by layering the GIS using a combination of historical atlases, particularly Schmidt (1999) and Black (2004). These were then validated against histories of each British district and Native State from Malleson (1875) and the Imperial gazetteers (1909).

<sup>34</sup>Each native state was treated as its own district, with the exception of the largest native states: Hyderabad, Baroda, Mysore and Kashmir, for which data was available at the more disaggregated *pranth/ nizamat* level.

<sup>35</sup>Waves of successive invasion by different Muslim groups through the Khyber pass in the Himalayas meant that regions closer to this line of advance were likely to be occupied first and held by Muslim rulers for the longest. Similarly, England’s expansion largely occurred from their Presidency ports (Bombay, Calcutta and Madras) inwards. It is arguable that the major thrust of Muslim and British expansion was to select targets based upon agricultural wealth and thus higher population densities (Eaton 1993, Fisher 1993, Iyer 2003). Insofar as higher wealth from agriculture reduces incentives for conflict, this may mean that any increased prediction of conflict due to Muslim and British rule is biased downwards.

<sup>36</sup>The word “famine” was often used by colonial officials, but as famously pointed out by Sen, these can often be a manmade effect of administration. I separated those episodes that were clearly weather or nature-related (i.e. droughts and lack of rainfall), rather than “food shortages” or “famines”.

<sup>37</sup>Both land revenue and municipal income were collected differently in British and princely states. Thus, it is necessary to control for direct British administration in any regression that involves these variables.

Table 2: **Summary statistics, 1850-1950 data, by medieval port:** Sample of towns above 5000 in 1901.

Variable	Other towns			Medieval ports		
	Obs	Mean	Std. Dev	Obs	Mean	Std. Dev
Riot in town (1850-1950)	425	0.44	0.50	47	0.13	0.34
Number of riots (1850-1950)	425	1.22	3.60	47	0.17	0.52
Number killed in riots	425	23.85	252.84	47	0.17	0.64
<b>Initial conditions:</b>						
Town at natural harbour in med. period	425	0.12	0.32	47	0.79	0.41
Log. distance from navigable river	424	12.74	1.68	47	13.59	0.98
Town with 10km of the modern coast	425	0.09	0.29	47	0.91	0.28
Log. distance from the modern coast	424	12.12	1.89	47	7.44	1.44
Natural disasters, 1850-1900	424	1.55	2.50	46	1.89	3.54
Latitude (degrees)	419	22.64	6.29	46	16.01	5.22
Longitude (degrees)	419	77.90	6.32	46	75.59	4.77
<b>Factors influencing medieval religious relations in town:</b>						
Log (Distance to River Ganga)	424	11.75	2.01	47	13.52	0.64
Centuries Muslim Rule	425	4.09	2.26	47	1.86	1.99
Town Muslim- founded or Muslim capital	425	0.13	0.34	47	0.04	0.20
Muslim pilgrimage site	425	0.03	0.16	47	0.02	0.15
Hindu pilgrimage site	425	0.06	0.24	47	0.04	0.20
Major Shi'a state before 1857	425	0.20	0.40	47	0.15	0.36
<b>Factors influencing politics and administration in colonial period:</b>						
Town under British rule	425	0.76	0.43	47	0.72	0.45
Decades British rule	425	10.61	6.75	47	11.10	8.02
Log. Distance to (future) Pakistan border	424	12.88	1.17	47	13.48	0.89
Presidency town or suburb	425	0.03	0.16	47	0.00	0.00
Land revenue in district Rs. lakhs	395	18.08	14.74	45	22.34	16.17
<b>Contemporaneous factors and outcomes:</b>						
Log. town population, 1901	425	9.93	0.93	47	9.72	0.75
Port with foreign trade, 1907	425	0.03	0.17	47	0.40	0.50
Municipal income per capita, 1901	425	1.28	2.75	47	0.86	1.14
Log (Value of trade per capita), 1907	424	0.10	0.65	46	0.59	0.86
Proportion Muslim in district (1901)	399	0.19	0.21	44	0.15	0.16
Proportion Muslim in district (1942)	424	0.19	0.21	46	0.15	0.16
Proportion Muslim in town, 1901	245	0.30	0.18	23	0.32	0.22
Diff. in Town prop. Muslim & rest of district (1901)	227	0.12	0.20	22	0.17	0.20

identified groups (Varshney and Wilkinson 2004).

Table 2 presents summary statistics comparing medieval ports to other towns with populations above 5,000 in 1901. Medieval ports exhibit strikingly lower incidences of religious violence compared to other towns. In medieval ports the proportion experiencing at least one outbreak of religious violence between 1850 and 1950 was less than one in six; close to a half of other towns faced a riot. Medieval ports also experience significantly fewer riots on average. The intensity of the riots also seems to be less in these towns: on average, five towns with legacies of medieval commerce might together experience a single death due to religious violence, but in towns that lacked such a legacy, religious violence claimed an average of nearly 23 lives *per town*. However, medieval ports are on average poorer and have a greater proportion of Muslims relative to the rest of their districts than other towns. These indicators are commonly associated with *higher* rather than lower incidences of ethnic violence.

Columns 1-5 of Table 3 measures the average effect of medieval trade on the probability that a medieval port succumbed to at least one incident of religious rioting between 1850 and 1950.<sup>38</sup> Under the probit assumptions, I can use the historical natural harbour

<sup>38</sup>This table uses the sub-sample of 242 towns for which I have complete data. Using the full sample for

Table 3: **Probability of experiencing a religious riot in towns of India, 1850-1950:** towns > 5000 in 1901.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Probit, dF/dX	Probit, dF/dX	Probit, dF/dX	OLS	OLS	IV-2SLS	IV-2SLS	IV-2SLS (efficient)	IV-2SLS (efficient)
Medieval trading port	-0.219** [0.093]	-0.225** [0.097]	-0.254** [0.105]	-0.235* [0.133]	-0.237* [0.132]	-0.184 [0.453]	-0.079 [0.426]	-0.328* [0.169]	-0.394** [0.167]
Log. distance from coast	0.035 [0.047]	0.018 [0.047]	0.001 [0.050]	0.005 [0.036]	-0.009 [0.038]	0.006 [0.040]	-0.003 [0.043]	0.002 [0.037]	-0.015 [0.038]
Coastal town	0.462** [0.186]	0.381* [0.195]	0.319 [0.220]	0.269 [0.185]	0.159 [0.195]	0.239 [0.305]	0.065 [0.309]	0.323* [0.188]	0.253 [0.211]
Log. distance from navigable river	-0.001 [0.029]	0.056 [0.039]	0.036 [0.043]	0.033 [0.032]	0.073* [0.044]	0.033 [0.032]	0.076* [0.045]	0.032 [0.032]	0.07 [0.045]
Natural disasters, 1850-1900	0.021 [0.015]	0.023 [0.016]	0.024 [0.016]	0.018 [0.015]	0.029* [0.018]	0.017 [0.016]	0.027 [0.019]	0.019 [0.015]	0.032* [0.018]
Log. distance to Ganga		-0.051* [0.030]	-0.058* [0.033]	-0.047** [0.021]	-0.032 [0.028]	-0.047** [0.022]	-0.031 [0.028]	-0.048** [0.021]	-0.033 [0.028]
Centuries Muslim Rule		0.062* [0.034]	0.061 [0.038]	0.046 [0.032]	0.003 [0.063]	0.047 [0.034]	0.007 [0.066]	0.044 [0.033]	-0.001 [0.064]
Town Muslim-founded or capital		0.123 [0.105]	0.085 [0.107]	0.076 [0.095]	0.111 [0.093]	0.077 [0.096]	0.116 [0.094]	0.072 [0.095]	0.106 [0.093]
Muslim pilgrimage site		0.212 [0.168]	0.252 [0.168]	0.193 [0.119]	0.211 [0.138]	0.19 [0.118]	0.197 [0.140]	0.201* [0.118]	0.224 [0.136]
Hindu pilgrimage site		-0.078 [0.128]	-0.118 [0.131]	-0.071 [0.115]	-0.107 [0.119]	-0.068 [0.113]	-0.096 [0.118]	-0.075 [0.115]	-0.117 [0.119]
Major Shi'a state before 1857		-0.143 [0.110]	-0.144 [0.117]	-0.113 [0.109]	-0.275* [0.160]	-0.114 [0.111]	-0.280* [0.162]	-0.112 [0.109]	-0.270* [0.162]
Presidency town or suburb			0.104 [0.178]	0.085 [0.178]	0.091 [0.241]	0.089 [0.174]	0.099 [0.259]	0.077 [0.166]	0.084 [0.215]
Land revenue in district Rs. lakhs			-0.005* [0.003]	-0.003* [0.002]	0.002 [0.003]	-0.003* [0.002]	0.002 [0.003]	-0.003* [0.002]	0.002 [0.003]
Log. distance to Pakistan border			0.113** [0.051]	0.112*** [0.042]	0.118* [0.064]	0.112*** [0.042]	0.121* [0.065]	0.112*** [0.042]	0.115* [0.064]
Port with foreign trade, 1907			0.037 [0.163]	-0.007 [0.114]	0.06 [0.114]	0.00 [0.126]	0.09 [0.136]	-0.02 [0.116]	0.031 [0.122]
Town in British India			0.136 [0.100]	0.111 [0.094]		0.106 [0.095]		0.118 [0.095]	-0.605** [0.267]
Constant				-2.265*** [0.858]	-3.692** [1.581]	-2.288** [0.900]	-3.873** [1.648]	-2.225** [0.859]	-2.906** [1.461]
Province / Native State FE	no	no	no	no	yes	no	yes	no	yes
Observations	242	242	242	242	242	242	242	242	242
Clusters	166	166	166	166	166	166	166	166	166
Pseudo/ Adjusted R-squared	0.18	0.21	0.24	0.21	0.26	0.21	0.26	0.21	0.26
Ln L/ RMSE	-135.62	-130.09	-125.52	0.44	0.42	0.44	0.43	0.44	0.43
Smith-Blundell exogeneity test: chisq(1)	0.016	0.006	0.005	t-statistic (excluded instrument):		5.00	6.35	21.61	19.72
	(p-value)	(0.90)	(0.94)						

All regressions include linear and quadratic controls for longitude and latitude. Robust standard errors in brackets (clustered at 1901 district/native state/pranah): \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Columns 8,9 assume a linear response.

instrument to conduct tests for the exogeneity of medieval port selection (Smith and Blundell 1986). The probability of observing the selection of medieval ports under the null hypothesis of exogeneity is close to 90%, irrespective of specification. Thus it seems reasonable to interpret the coefficient of medieval port in the probit specifications as the average treatment effect of medieval trade on religious violence in those towns that enjoyed medieval trade.

A medieval trade legacy reduced that the probability of that a town experienced a religious riot by more than 20%. This result is robust and remarkably consistent to controlling for initial conditions that might shape port selection (Column 1), other historical factors influencing Hindu-Muslim relations (Column 2) and colonial era factors that might affect wealth, politics and Hindu-Muslim ties (Column 3). The probit marginal effect and the OLS estimate are remarkably similar (Columns 3 and 4), and adding fixed effects to control for individual native states and British provinces has no effect (Column 5).

It is possible that medieval ports may simply capture the effect of being on the coast, and coastal towns may be inherently more cosmopolitan. However, as Column 1 of Table 3 reveals, the effect of medieval ports is robust to matching towns by coastal location, and there is no consistent evidence that a coastal location favours religious tolerance. It may also be that the effect of medieval port is not due to the effect of a coastal location *per se*, but rather is due to belonging to the broader class of towns that face natural shocks more often and are thus more likely to develop better institutions of cooperation (Wade 1988) to deal with them. I find that if anything, towns in districts that face more natural disasters are *more* likely to experience religious riots. This is consistent with the theory, suggested by Miguel, Satyanath, and Sergenti (2004) and Fearon and Laitin (2003), that civil conflict may result from a negative resource shock.

Column 2 matches the histories of Muslim political involvement in towns between the 7th century and 18th century. It may be the case that the effect of medieval ports occurs because they are relatively more numerous in the South and East and thus experienced less time under Muslim political rule on average. The medieval port effect, however, is relatively unchanged after controlling for the duration of Muslim rule.

The effect of medieval ports on colonial religious relations may simply reflect historical wealth in towns that is not captured by the included indicators of wealth. If that is the case, then, after controlling for the duration of Muslim rule, there might also be a wealth effect in towns founded by Muslims or in erstwhile Muslim capitals, which were also

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each set of covariates yields similar results, but suffers from the problem of under-reporting of rioting in non-descript towns, including many medieval ports. Towns that are well-documented by official sources also tend to be those towns where the religious rioting is well-documented by those sources.

wealthy in the medieval period. Instead, the point estimates in Column 2 suggest that a history of Muslim patronage appears to have a insignificant but positive effect on the probability of religious riots. As discussed above, these towns did not have the historical incentives to generate inter-religious institutions to support peaceful co-existence.

Another plausible argument is that because medieval trading ports are relatively far from the Ganges, they are far from the centre of Hindu sacred geography and thus they are less likely to be in areas of competition between Hindus and Muslims in nearby rural areas.<sup>39</sup> Indeed, there appears to be a consistent effect of distance from the Ganges on religious rioting. However, the medieval trading port variable is still robust to the inclusion of this variable.

Beyond the location of the Ganges, India's sacred geography may bias the results for other reasons. It may be that sites of pilgrimage are particularly prone to violence, as they are the focus of religiosity and rival processions.<sup>40</sup> Indeed, the pilgrimage sites of Ayodhya, the site of Ram's birth, and Mathura, the site of Krishna's birth, are considered to be particularly prone to religious violence.<sup>41</sup> It may be that because relatively few pilgrimage sites are medieval trading ports, the results are biased.<sup>42</sup> There is some (non-robust) evidence that towns with Muslim pilgrimage centres have an increased probability of religious violence, but controlling for pilgrimages does not affect the medieval port results substantively (Column 2).

It has been argued by Bayly (1985) and Prior (1993) that pre-Independence religious violence tended to occur when major (Shia) Muslim festival processions—*Urs* and *Muharram*—tended to coincide with Hindu festivals. Since both religions follow the lunar calendar, these processions used to coincide roughly once every 30 years. According to Bayly (1983), such religious festivals were used as a display of wealth and power by an emergent

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<sup>39</sup> A key determinant of the agricultural and cultural frontier was the distance to the river Ganges, in part because the nature of Hindu sacred geography and royal patronage prior to the Muslim invasions meant that areas closer to the Ganges had a greater concentration of Brahmins, the main propagators of agricultural technology before the invasions (Eaton 1993). Sufis thus had the most impact in regions further from the Ganges, such as Kashmir and Eastern Bengal and areas in the Deccan (Eaton 1993, Bayly 1989). In regions, particularly in northern and western India, where conversion due to political patronage and Sufi missionary activities was incomplete due to the rival influence of India's existing religions, the lack of robust complementarities and similar (agricultural) endowments between members of different religions may have also encouraged economic competition.

<sup>40</sup>They may also be the focus of historical moves to assert authority that may leave lasting grievances. Eaton (2003) argues that most temple desecrations by Muslims occurred during periods when a territory was experiencing conquest or uncertainty. Once Muslim rule was established, temple desecrations were extremely rare.

<sup>41</sup>Though, it is interesting to note that Banaras, Hinduism's holiest city, has a well-established reputation for tolerance. This arguably stems from complementarities between the resident Muslims, who have specialised as weavers, and their Hindu suppliers and marketers.

<sup>42</sup>Dwarka and Somnath Patan (adjacent to Veraval) are notable exceptions.

Hindu middle class in the wake of the decline of Muslim political power (Jaffrelot 2005). If it is the case that the coincidence of timing of processions played an important role in pre-Independence riots, then it is likely that riots should occur more often in areas with long-term Shiite traditions. Column 2 of Table 3 also examines whether riots are more likely in regions that experienced long periods of Shiite rule prior to 1857 and in which there was a greater tendency for Shiite conversion and immigration.<sup>43</sup> If anything, there is a negative effect of Shia rule on religious violence.<sup>44</sup>

While other factors influencing Hindu and Muslim relations in the medieval period seem not to explain the medieval trade legacy on religious violence, differences in colonial era wealth and administration may be important. Columns 3 and 4 matches the presence of British administration, the distance to the newly created borders of Pakistan, the agricultural revenues being derived from the district around the town, as well as the special arrangements in the administration of the major “Presidency” towns of Bombay, Madras and Calcutta. An important control also included is whether a town engaged in foreign trade during the colonial period— it could be that the medieval port effect is actually the effect of wealth being derived from trade that continued into the colonial period. In fact, the medieval port effect is slightly stronger with the addition of these controls and unlike medieval trade, contemporary overseas trade seems to have no effect on the probability of a town experiencing a religious riot. Consistent with the cross-country evidence (Fearon and Laitin 2003), there appears to be some indication that towns in more agriculturally rich districts have less violence. Column 5 adds controls for each native state and British province to capture differences in administration and reporting of riots across jurisdictions. Addition of these controls once again strengthens the coefficient on medieval port.<sup>45</sup>

Even though the exogeneity tests suggest that we can ignore the selection of medieval ports, for completeness we provide IV estimates in Columns 6-9. Columns 6 and 7 of Table 3 estimate the local average treatment effect on towns that became medieval trading ports due to their proximity to natural harbours on the historical coastline. We control for other ways that historical natural harbours might influence contemporary religious conflict: wealth effects due to proximity to the coast and to navigable rivers, susceptibility

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<sup>43</sup>These include the Bahmani sultanate and its successor states—Ahmadnagar, Berar, Bidar, Bijapur and Golconda—in the Deccan, and Awadh in Uttar Pradesh.

<sup>44</sup>A further potential concern is raised by Pandey (1990): most riots involve both religious motifs—e.g. invocations of God and religious symbols—and large mobile groups of people, as do religious “processions”. In second hand accounts, these can easily be confused. Pandey reveals how colonial accounts of a riot in Banaras in 1805 were gradually distorted over time, reinterpreting a rare incident involving a mosque-temple land dispute that led to a riot into an example of a pattern of clashes between rival “religious processions”.

<sup>45</sup>Estimating the effect only among those medieval ports with silted harbours leads to similar results.

Table 4: **Incidence of religious riots in towns of India, 1850-1950:** Negative binomial regression providing incidence ratios of the number of Hindu-Muslim riots that occurred in a sample of towns over 5000 in population in 1901.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Neg. Bin., Incidence Ratios	Neg. Bin., Incidence Ratios	Neg. Bin., Incidence Ratios	OLS	OLS	IV-2SLS	IV-2SLS	IV-2SLS (efficient)	IV-2SLS (efficient)
Medieval trading port	0.190*** [0.121]	0.236** [0.146]	0.237** [0.149]	-1.031 [0.700]	-0.838 [0.828]	-2.813 [1.743]	-2.619* [1.434]	-1.259 [0.865]	-1.111 [0.989]
Town Muslim-founded or capital		2.045** [0.601]	1.877** [0.541]	1.637* [0.938]	1.422 [0.891]	1.573* [0.923]	1.364 [0.879]	1.629* [0.942]	1.413 [0.892]
Town in British India			2.624*** [0.951]	1.088*** [0.415]		1.238*** [0.427]		1.107*** [0.423]	
Constant				1.947 [6.412]	2.884 [8.983]	2.722 [6.710]	4.933 [9.319]	2.046 [6.461]	3.199 [8.962]
Province / Native State FE	no	no	no	no	yes	no	yes	no	yes
Historical controls*:	no	yes	yes	yes	yes	yes	yes	yes	yes
Contemporaneous controls**:	no	no	yes	yes	yes	yes	yes	yes	yes
Observations	242	242	242	242	242	242	242	242	242
Clusters	166	166	166	166	166	166	166	166	166
Adjusted R-squared				0.17	0.27	0.16	0.26	0.17	0.27
RMSE				2.88	2.71	2.9	2.73	2.89	2.71

All regressions include linear and quadratic controls for longitude and latitude and log. distances from coast, navigable rivers, coastal town, natural disasters. \*: Historical controls include: Centuries Muslim rule, Hindu and Muslim pilgrimage sites, major Shia state. \*\*:Contemporaneous controls include: Land revenue, Log. distance to Pakistan border, Contemporary port with foreign trade. Robust standard errors in brackets (clustered at 1901 district/ native state/ pranth): \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1% .Columns 8,9 assume a linear response

to natural disasters as well as wealth effects stemming from overseas trade in the colonial period. The first stage t-statistics suggest a strong residual correlation with medieval port selection. In Column 6, the LATE is negative, and similar in magnitude to the OLS and probit specifications, though not precisely estimated. The effect disappears when we control for state and province controls. Columns 8 and 9 use the more efficient IV estimator suggested by Wooldridge (2002)[p.623], assuming that the probability of a riot occurring is a linear function (not likely to be strictly true, but potentially a reasonable approximation in the range). These estimates are stronger, significant and consistent in sign to the OLS and probit estimates.

While Table 3 considered the probability that a town would witness religious violence, Table 4 uses the same controls to examine the number of religious riots faced by a town. As the table reveals, the medieval trade reduced the number of incidents of religious violence in a medieval port town by 75-80% of what it might have otherwise been. The LATE estimates in Column 6-7 show a significant negative effect on the incidence of riots of medieval trade on towns that became ports due to the presence of historical natural harbours.

As Table 3 revealed, British administration did not increase the probability of the failure of religious tolerance in a town. However, Table 4 shows that a British administration did significantly increase the average number of riots.<sup>46</sup> This suggests that British

<sup>46</sup>Insofar as the British were selective in their annexation based upon wealth that is not being captured

Table 5: **Effect of medieval trade on wealth and religious demography in 1901**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variables:	OLS	OLS	OLS	OLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
Municipal income per capita	-0.778 [0.743]	-0.513 [0.530]	-0.675 [0.615]	-0.188 [0.546]	-0.361 [2.580]	-0.024 [1.776]	-0.769 [0.945]	0.028 [0.832]
Log (value of trade per capita)	-0.587 [0.543]	-0.54 [0.503]	-0.42 [0.419]	-0.406 [0.388]	-0.609 [1.003]	-0.405 [0.831]	-0.6 [0.611]	-0.596 [0.538]
Diff.%Muslims (Town- Rest of Dist)	0.155* [0.081]	0.141* [0.075]	0.171** [0.073]	0.109 [0.074]	0.250 [0.204]	0.267 [0.177]	0.245*** [0.067]	0.184** [0.075]
Province / Native State FE	no	no	no	yes	no	yes	no	yes
Historical controls*	no	yes	yes	yes	yes	yes	yes	yes
Contemporaneous controls**	no	no	yes	yes	yes	yes	yes	yes
Observations	242	242	242	242	242	242	242	242

All regressions include linear and quadratic controls for longitude and latitude and log. distances from coast, navigable rivers, coastal town, natural disasters. \*: Historical controls include: Centuries Muslim rule, Hindu and Muslim pilgrimage sites, Town-Muslim founded or capital, major Shia state. \*\*:Contemporaneous controls include: Town in British India, Land revenue, Log. distance to Pakistan border, Contemporary port with foreign trade. Robust standard errors in brackets (clustered at 1901 district/ native state/ pranth): \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1% .Columns 7,8 assume a linear response

administrators were not systematically responsible for instigating religious acrimony, but that towns in British territories were more prone to repeated violence. Similarly, towns that were once Muslim capitals or patronage centres exhibit double the incidence of violence as other towns. As noted above, these places, despite being similar to medieval ports in their historical wealth and attractiveness to Muslims, lacked the incentives to develop inter-religious institutions.<sup>47</sup>

So far we have established that a medieval trade legacy reduced the incidence of religious violence in medieval ports. We have also provided examples of institutions present in these ports and argued that these have persisted over time. However, it may be that rather than the institutions, medieval trade is a proxy for unobserved differences in historical wealth, or conversely that following their decay, medieval trading ports lost their Muslim population in the colonial period, and thus had less potential for Hindu-Muslim conflict. Indeed, an argument with a venerable tradition in the popular press and among academics is that Hindu-Muslim violence is more likely in areas with a more mixed religious population. According to this argument, the more likely a member of one group is to interact with another, the more likely there is to be conflict.<sup>48</sup>

If inter-religious institutions drive the medieval port effect, they should provide the incentives for Muslims to remain in a town even when the opportunities for wealth are lower than in other towns. Table 5 uses the same specifications as before to estimate the

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by the land revenue, these results may underestimate the effect of British administration. See e.g. Iyer (2003).

<sup>47</sup>Other results, not reported here, show a negative but insignificant effect of medieval trading ports on the number of fatalities per riot.

<sup>48</sup>See e.g. Dion (1997) and Wilkinson (2005a) for an overview.

Table 6: **Interactions: probability of a town experiencing a religious riot, 1850-1850**

	(1)	(2)	(3)	(4)
	Probit, dF/dX	OLS	OLS	OLS
Medieval trading port	-0.317*** [0.100]	-0.114 [0.134]	-0.034 [0.132]	-0.059 [0.114]
Log. trade per capita	0.926*** [0.265]	0.143*** [0.052]	0.149*** [0.056]	0.156*** [0.047]
Municipal income per capita	0.018* [0.010]	0.010 [0.009]	0.009 [0.010]	0.018** [0.007]
Log. town population	0.328*** [0.087]	0.227*** [0.031]	0.235*** [0.032]	0.247*** [0.037]
% Muslim in town, 1901	0.019* [0.010]	0.007 [0.007]	0.009 [0.008]	0.009 [0.009]
% Muslim in town <sup>2</sup> , 1901	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]
MTP*(Income per capita - Mean(income per capita))			0.179** [0.070]	0.186*** [0.063]
MTP*(Log. Population- Mean(Log. Population))			-0.362** [0.157]	-0.475*** [0.130]
MTP*(% Muslim - Mean(% Muslim))			0.004 [0.012]	-0.010 [0.010]
MTP*(% Muslim <sup>2</sup> - Mean(% Muslim <sup>2</sup> ))			0.000 [0.000]	0.000 [0.000]
Constant		-3.631*** [0.817]	-3.595*** [0.823]	-5.889*** [1.570]
Province/ Native State FE	no	no	no	yes
Observations	242	242	242	242
Clusters	166	166	166	166
RMSE	-92.82	0.4	0.4	0.38
Pseudo / Adjusted R-squared	0.44	0.35	0.35	0.41

All regressions include linear and quadratic controls for longitude and latitude and log. distances from coast, navigable rivers, coastal town, natural disasters, along with historical controls that include: Muslim-founded town or capital, Centuries Muslim rule, Hindu and Muslim pilgrimage sites, major Shia state, and contemporaneous controls that include: Town in British India, Land revenue, Log. distance to Pakistan border, Contemporary port with foreign trade. Robust standard errors in brackets (clustered at 1901 district/ native state/ pranth): \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1% .

effect of a medieval trading legacy on indices of wealth and religious demography in 1901. As the first two rows demonstrate, a medieval trade legacy has, if anything, a negative effect on both the municipal income per capita in the town and even the value of overseas trade in 1901. However, medieval trading ports continue to have a significantly greater proportion of Muslims than the towns and villages in their surrounding district (see also Figure 3). With lower wealth and a more mixed population, medieval ports should be prone to *more* violence, rather than less. These results are consistent with the argument that the transmission mechanism that links a medieval trading legacy to contemporary religious relations cannot be purely through wealth, but rather the institutional factors described above.

Even though, as we have argued, income and religious composition are both endogenous to institutions, it may be of interest to make these results more comparable with existing studies and see how much of an effect a medieval trading legacy may continue to have on religious violence, controlling for measures of income and religious demography and the other factors already discussed. As Column 1 of Table 6 reveals, the probit estimate on medieval port is in fact stronger with the addition of these variables. Columns 3 and 4 include demeaned interactions. The effect of a medieval trading legacy is greatest in bigger, poorer towns.

## 4.2 The failure of religious tolerance in towns, 1850-1995

The previous section considered the cross-section of India's towns and found that erstwhile medieval trading ports were less likely to experience an outbreak of religious violence and experienced fewer riots than similar towns up until 1950. Figure 4 compares the timing of the first failure of inter-religious peace among the same sample of towns, using data on religious violence up until 1995 from Varshney and Wilkinson (2004) and Wilkinson (2004).

Notice first that most towns in the sample analysed above experienced at least one riot over the 145 year period, including a majority of medieval trading ports. This suggests that medieval ports at least had the potential for religious conflict in the preceding period. However, at all times, medieval ports have enjoyed a better survival probability than non-ports. The difference is most remarkable in such periods as the emergence of mass religious politics in the wake of the *Khilafat* agitations on the 1920s, and the turmoil of Partition in 1947, that steadily resulted in the failure of religious tolerance in other towns.<sup>49</sup>

Other factors may be driving the differences in Figure 4. Table 7 provides the results of Cox proportional hazards regressions on survival of religious tolerance for the same sample as above, between 1850 and 1950. Notice that a medieval trading legacy reduce the risk of the first outbreak of religious rioting in each year by between 80% and 95%. The coefficient strengthens with the addition of controls. In contrast, tolerance was likely to fail significantly more rapidly in towns with a history of Muslim political patronage, like Ahmadabad and Delhi, that lacked the incentives for institutional development. Tolerance in British administered towns was more likely to fail before those under native

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<sup>49</sup>Indeed, the differential effect of Partition on medieval ports and other towns is consistent with the theoretical framework: where Hindus and Muslims were competitors, Partition should exacerbate violence, as it was now easier for members of the majority group to push out minority competitors. Where minority and majority maintained complementarity on the other hand, the incentives for violence would in fact be diminished by Partition, as minority residents enjoy a more credible threat to leave if attacked.

Table 7: **Survival of religious tolerance in towns of India, 1850-1950:** Cox proportional hazards regression providing hazard ratios of the time till first incidence of Hindu-Muslim rioting in a sample of towns over 5000 in population in 1901.

	(1)	(2)	(3)	(4)	(5)
Medieval trading port	0.168 [0.123]**	0.170 [0.131]**	0.057 [0.082]**	0.031 [0.035]***	0.082 [0.070]***
Town Muslim-founded or capital		1.682 [0.416]**	1.585 [0.410]*	1.666 [0.389]**	0.605 [0.133]**
Town in British India			2.422 [1.213]*		
Log. trade per capita					1.271 [0.425]
Municipal income per capita					0.997 [0.046]
Log. town population					3.168 [0.478]***
% Muslim in town					1.101 [0.034]***
% Muslim in town <sup>2</sup>					0.999 [0.000]***
Province/ Native State FE	no	no	no	yes	yes
Historical controls*:	no	yes	yes	yes	yes
Contemporaneous controls**:	no	no	yes	yes	yes
Observations	402	402	402	402	402
Clusters	159	159	159	159	159
Ln L	-1096.45	-1061.25	-1049.41	-1014.23	-951.85
df	9	15	20	48	53

All regressions include linear and quadratic controls for longitude and latitude and log. distances from coast, navigable rivers, coastal town, natural disasters. \*: Historical controls include: Centuries Muslim rule, Hindu and Muslim pilgrimage sites, major Shia state. \*\*:Contemporaneous controls include: Land revenue, Log. distance to Pakistan border, Contemporary port with foreign trade. Robust standard errors in brackets (clustered at 1901 district/ native state/ pranth): \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1% .

rule.

While it appears that a medieval trading legacy slowed the failure of religious tolerance in towns over time, as Figure 4 suggests, the effect of institutions— even those forged over a millennium— can erode over time. The relative benefits from medieval trade institutions appear to have been challenged in recent history, particularly in the 1980s and 1990s. Understanding the time series variation in religious relations in India’s towns in this period cannot be addressed with the current data, but remains a topic for future research. It is possible, however, to obtain a snapshot of the role medieval trade institutions play in current religious relations. I turn to this in the next section.

Table 8: **Summary statistics, Gujarat riots data, February-April 2002:** Sample of towns and urban areas in Gujarat.

	Medieval port = 0			Medieval port =1			Welch t
	Obs	Mean	Std Dev.	Obs	Mean	Std Dev.	
Religious riot occurred	251	0.112	0.315	13	0.231	0.439	0.967
Days of religious rioting	251	0.311	1.768	13	0.769	1.481	1.077
Religious violence occurred	251	0.231	0.422	13	0.308	0.480	0.564
Days of religious violence	251	0.689	2.378	13	1.308	2.213	0.979
Coastal town	251	0.127	0.334	13	1.000	0.000	41.364
Town with Natural Harbour	251	0.127	0.334	13	0.769	0.439	5.199
Log (Dist. to Navigable River)	187	13.029	0.274	13	12.964	0.372	-0.617
Natural disasters, 1850-1900	199	2.055	2.223	13	1.308	2.250	-1.161
Log(population 1991)	251	9.849	1.016	13	11.342	1.267	4.179
Log(population growth, 1981-91)	232	8.361	1.366	13	9.495	1.651	2.431
Class 1 Town (100,000+)	251	0.056	0.230	13	0.385	0.506	2.329
Class 2 Town (50-100,000)	251	0.120	0.325	13	0.231	0.439	0.902
Class 3 Town (25-50,000)	251	0.219	0.414	13	0.308	0.480	0.652
Within 100km of Godhra	251	0.120	0.325	13	0.000	0.000	-5.826
Within 200km of Godhra	251	0.295	0.457	13	0.308	0.480	0.094
Within 300km of Godhra	251	0.470	0.500	13	0.385	0.506	-0.594
Town Muslim- founded or Muslim capital	251	0.008	0.089	13	0.154	0.376	1.399
Centuries Muslim Rule	201	3.427	1.034	13	2.998	1.176	-1.284
Town under Hindu ruler	251	0.490	0.501	13	0.462	0.519	-0.193
Town under Muslim ruler	251	0.064	0.245	13	0.231	0.439	1.362
Decades British rule	201	4.250	6.392	13	4.446	6.943	0.099
Prop. Scheduled Tribe in Town	250	6.739	11.293	13	3.433	5.412	-1.989
Prop. Scheduled Caste in Town	251	7.463	4.206	13	5.763	1.701	-3.141
Annual town income per capita, Rs. 1000s	242	0.170	0.244	12	0.287	0.198	1.980
Annual town expenditure per capita, Rs. 1000s	242	0.211	0.693	12	0.269	0.189	0.832
Active port in 2001	251	0.052	0.222	13	0.692	0.480	4.781
Prop. Muslim in Town, 1981	215	0.164	0.133	13	0.245	0.142	2.008

### 4.3 Results from the Gujarat riots, February-April 2002

While the country-wide analysis allows me to evaluate the generalisability of the analysis across the subcontinent, it leaves open the possibility that controls for unobserved geographical and historical variation are inadequate. Further, it is also possible that the effect of medieval trading institutions has weakened over time. I therefore supplement the country-wide analysis using data from the two months of religious violence in the towns of one particular state of India, Gujarat, following the burning of the *Sabarmati Express* in Godhra in 2002.

To construct this dataset, I went through news reports on Gujarat from the day of the burning of the Sabarmati Express, February 27th until April 15th.<sup>50</sup> Following Varshney and Wilkinson (2004), I coded a riot as occurring in a town if there was evidence of violence by communally-identifiable “mobs” or other large groups in that town. I also coded a day of “violence” as having occurred in a town if there was an isolated incident, such as a stabbing, without any evidence of broader groups being involved. I supplement these variables with the GIS of geographic and historical data described above, as well

<sup>50</sup>News sources include *rediff.com* and the *Times of India*. These were supplemented from an *amicus curiae* brief by the Concerned Citizens Tribunal, which provided information about less-widely publicised violence in smaller towns and villages.

as data on town-level religious composition from the 1981 Census and other data from the town directories of the 1991 Census. I also gathered data on ports from the Gujarat maritime board. Table 8 provides the summary statistics. Gujarati medieval trading ports are larger, somewhat richer and have, on average, a significantly larger proportion of Muslims than the average Gujarati town. There is no *a priori* evidence that Gujarati medieval ports were more peaceful than other towns following this incident. In fact, 23% of Gujarati medieval ports experienced religious rioting, compared to 11% of other towns.

Table 9 shows the results from a linear probability model of whether a town experienced a religious riot following the burning of the Sabarmati Express at Godhra. All specifications include district fixed effects and controls for town size and distance to Godhra. Once again, towns with a medieval trading legacy were around 20-30% less likely to experience a riot. The magnitude of this effect is remarkably consistent with the colonial sample across India.

Column 2 adds further historical controls. A history of direct British rule seems to have left a lasting legacy on religious tension. Column 3 adds a number of controls for the wealth of the town: the proportion of low castes, whether the port remains active and Census measures of the annual town income and expenditures per capita. As already discussed, these may be endogenous to the presence of inter-religious institutions, and may bias the results downwards. However, the variables appear to have no independent effect and only slightly diminish the effect of a medieval trade legacy. Column 4 adds a control for the religious mix of the town. As noted earlier, Gujarati medieval trading ports have more Muslims on average. If a higher religious mix results in more confrontation, then the effect of medieval trading ports should rise when controls for the religious mix are added. This appears to be the case.

Table 10 presents the coefficient on medieval port for other indicators: the duration of rioting, and whether the town experienced any violence (both riots and isolated incidents). As Row 1 suggests, a medieval trading port legacy reduces the number of days that a town experienced religious rioting by around two to three days. In contrast medieval trading ports appear to have a weaker effect on whether violent incidents occur at all. Rather, the major effect of medieval ports appears to be to reduce the escalation of religious conflict into broader confrontation.

## 5 Conclusion

This paper has sought to establish that medieval trade in the Indian Ocean provided incentives to generate institutions of religious tolerance among the residents of India's

Table 9: **Probability of religious riots in towns of Gujarat, February-April 2002:** Linear Prob. Model of Hindu-Muslim riot occurrence.

	(1)	(2)	(3)	(4)
Medieval trading port	-0.229 [0.049]**	-0.302 [0.077]**	-0.293 [0.099]**	-0.329 [0.114]*
Town Muslim- founded or capital		0.051 [0.313]	0.033 [0.320]	0.011 [0.339]
Centuries Muslim Rule		-0.018 [0.047]	-0.016 [0.055]	-0.01 [0.064]
Town in British India		0.204 [0.066]**	0.219 [0.072]**	0.285 [0.064]**
Land revenue in district Rs. lakhs		0.006 [0.004]	0.005 [0.004]	0.008 [0.005]
Prop. Scheduled Tribe in Town			-0.004 [0.005]	-0.005 [0.005]
Prop. Scheduled Caste in Town			0.011 [0.011]	0.013 [0.012]
Active port in 2001			-0.039 [0.102]	-0.045 [0.106]
Annual income per capita Rs.1000s			0.006 [0.190]	0.059 [0.223]
Annual expenditures per capita Rs. 1000s			-0.008 [0.025]	-0.012 [0.030]
Prop. Muslim in Town, 1981				0.5 [0.570]
Prop. Muslim in Town <sup>2</sup> , 1981				-0.44 [0.672]
Constant	-3.59 [3.377]	-1.434 [4.108]	-2.6 [4.082]	-2.294 [4.280]
District FE	yes	yes	yes	yes
Distance to Godhra (100km, 200km,	yes	yes	yes	yes
Class of Town (I,II and III) controls	yes	yes	yes	yes
Historical controls	no	yes	yes	yes
Observations	199	153	148	137
R-squared	0.46	0.56	0.58	0.61
Clusters	19	16	16	16
Adjusted R <sup>2</sup>	0.37	0.45	0.44	0.45

All regressions include controls for coastal town, log distance to coast, navigable river, natural disasters, log population (1991),\* Historical controls: Centuries Muslim rule, Land revenue 1901, \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 10: **Further effects on religious violence:, February-April 2002:** Effects of medieval port legacy on medieval ports on days of rioting and probability of violence (including isolated incidents), in towns of Gujarat.

	(1)	(2)	(3)	(4)
Days of rioting	-1.754	-2.805	-2.733	-2.903
	[0.858]*	[1.316]**	[1.418]*	[1.447]*
Incidence of religious violence	-0.104	-0.129	-0.141	-0.18
	[0.113]	[0.139]	[0.093]	[0.082]**
District FE	yes	yes	yes	yes
Distance to Godhra (100km, 200km, 300km)	yes	yes	yes	yes
Class of Town (I,II and III) controls	yes	yes	yes	yes
Geographical controls	yes	yes	yes	yes
Historical controls	no	yes	yes	yes
Contemporaneous controls	no	no	yes	yes
Religious demography controls	no	no	no	yes
Observations	199	153	148	137
R-squared	0.46	0.56	0.58	0.61
Clusters	19	16	16	16
Adjusted R <sup>2</sup>	0.37	0.45	0.44	0.45

All regressions include controls for coastal town, log distance to coast, navigable river, natural disasters, log population (1991),\* Historical controls: Centuries Muslim rule, Town Muslim founded or capital, Town in British India, Land revenue 1901, Contemporaneous controls: Proportions- SC, ST, Income and expenditures per capita, \*\*\*Religious demography: %Muslim, %Muslim<sup>2</sup> \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

erstwhile trading ports, and presents results that suggest that these institutions have left a lasting legacy on the patterns of religious violence in recent times. The paper identifies conditions that play an important role encouraging exchange between groups: complementarity between them, a high cost for the majority to expropriate or replicate the source of complementarity, and a means to redistribute the surplus from trade. Most trading networks fulfil the first two of these criteria, but many ethnically-based trading networks fail the third. This paper argues that in the medieval Indian Ocean, Islam, by making trade accessible to all Muslims, was successful in all three.<sup>51</sup>

The empirical component of this paper finds evidence that erstwhile medieval trading ports are 20 to 30 percent less likely to experience religious rioting prior to Independence,

<sup>51</sup>In a different sea, Ottoman Salonica, once known as the “Mother of Israel”, long provided a haven for Jews in Europe. Salonica appears to fit this theory closely. Salonica, then under the Ottoman Empire, became home to Sephardic Jews expelled from Spain in the late 15th century (the Jewish expulsion from Spain was itself in part facilitated by forced conversions to Christianity by Jews, who then provided substitutes for the skills that their erstwhile co-religionists had previously provided to Spanish rulers (Benbassa and Rodrigue 2000)). Maintaining their trading ties with Spain and the Atlantic economy, but with their immigration encouraged by local Ottoman authorities, Salonica was inundated by Jewish refugees, both rich and poor. For the next four centuries, Salonica maintained a remarkable degree of cultural tolerance and prosperity, with Jews specialised in overseas trade. On the eve of the Great War, in 1913, the population of Salonica was home to 61,439 Jews, the greatest number in Europe (Mazower 2005)[p.284].

and a medieval commercial legacy reduces religious violence more in poorer towns with more mixed populations. Between 1850-1950, a medieval trade legacy reduced the relative risk of a town experiencing its first episode of religious violence in any year by around 80 percent. The institutional legacy of medieval trading ports appears to have persisted throughout the twentieth century, continuing to reduce violence by around 20 to 30 percent following the Godhra riots in Gujarat in 2002.

The key intuition of the paper is that by encouraging members of different ethnicities and religions to be competitive among themselves but to assume complementary roles between groups, it is possible to provide incentives to encourage further investments in institutions that support inter-religious tolerance and economic integration. The institutions themselves may also provide insights for policy. Though there is heterogeneity in institutional responses, they share an economic logic. To encourage tolerance, methods that have been employed in medieval ports include the encouragement of specialisation within groups, the fostering of opportunities for repeated interaction in both economic and non-economic spheres, and the creation of institutionalised mechanisms to allow the minority to make explicit transfers to the majority population.

All of these approaches may yield dividends for ethnic tolerance today. Educational systems that allow minority individuals the choice of leveraging the advantages of their group to engage in broader exchange, rather than promoting homogenisation of a town's human capital, may result in both better retainment in schools and more opportunities for exchange. An explicit and well-publicised system of transfers or joint shareholding between communities may be effective in improving between-group relations, thereby opening up further opportunities for exchange (Jha 2007a).<sup>52</sup> Organisations that match members of different communities with complementary skills in the creation of joint business ventures may also be effective for improving ethnic relations.<sup>53</sup> Trading networks may have afforded minority groups an important source of comparative advantage that rendered them valuable neighbours. Long after the decline of Indian Ocean trade, it may be that we can apply some of their institutional learning to the pressing problems of inter-ethnic peace and minority economic integration today.

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<sup>52</sup>Chua (2003) suggests a similar intervention. Indeed, the approach of providing shares appears to have met some success in reducing ethnic violence in contemporary Malaysia.

<sup>53</sup>Such an organisation has indeed been established by the Ismaili community in East Africa.

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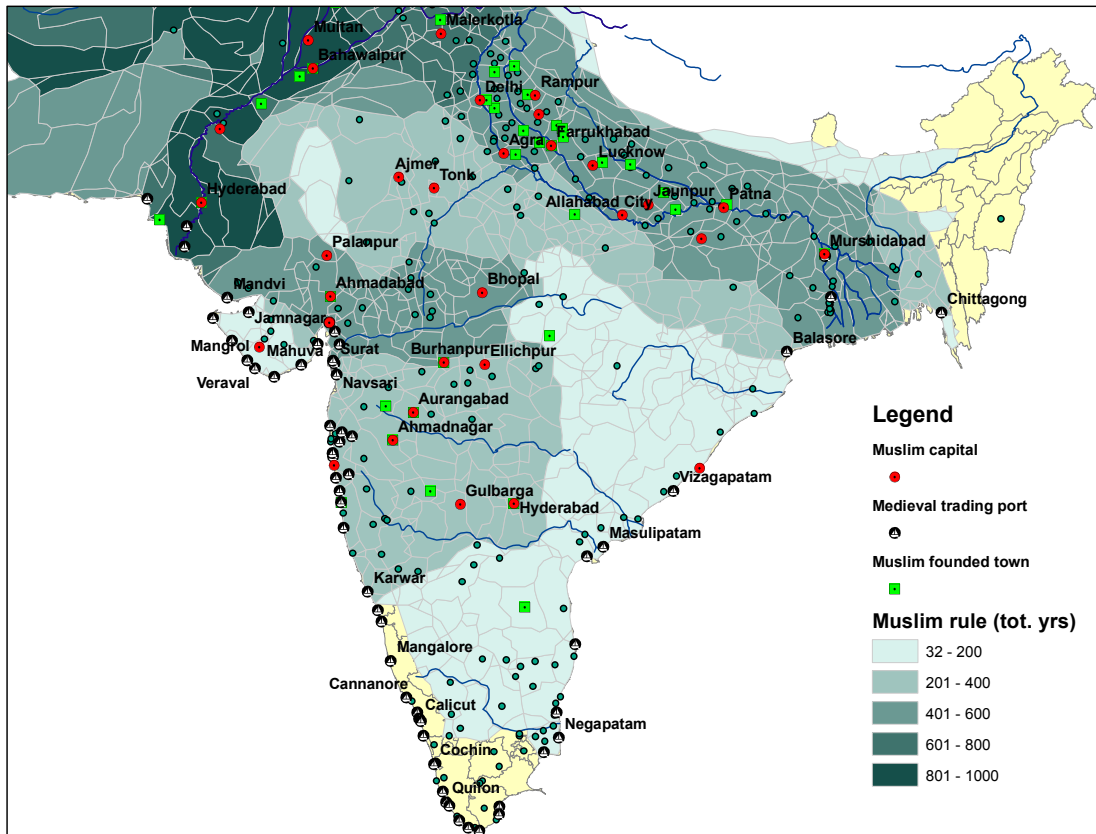


Figure 1: **Medieval ports and Muslim political expansion, 712-1707.** Medieval ports spread across both coasts. Repetitive waves of invasion through the Khyber Pass have meant that closer regions experienced Muslim rule first and most continuously. Agriculturally productive areas such as the Gangetic plain were occupied early, while arid and forest regions were occupied much later. Many towns in the Ganges plains, Deccan and Gujarat were founded as centres of Muslim political control in the medieval period.

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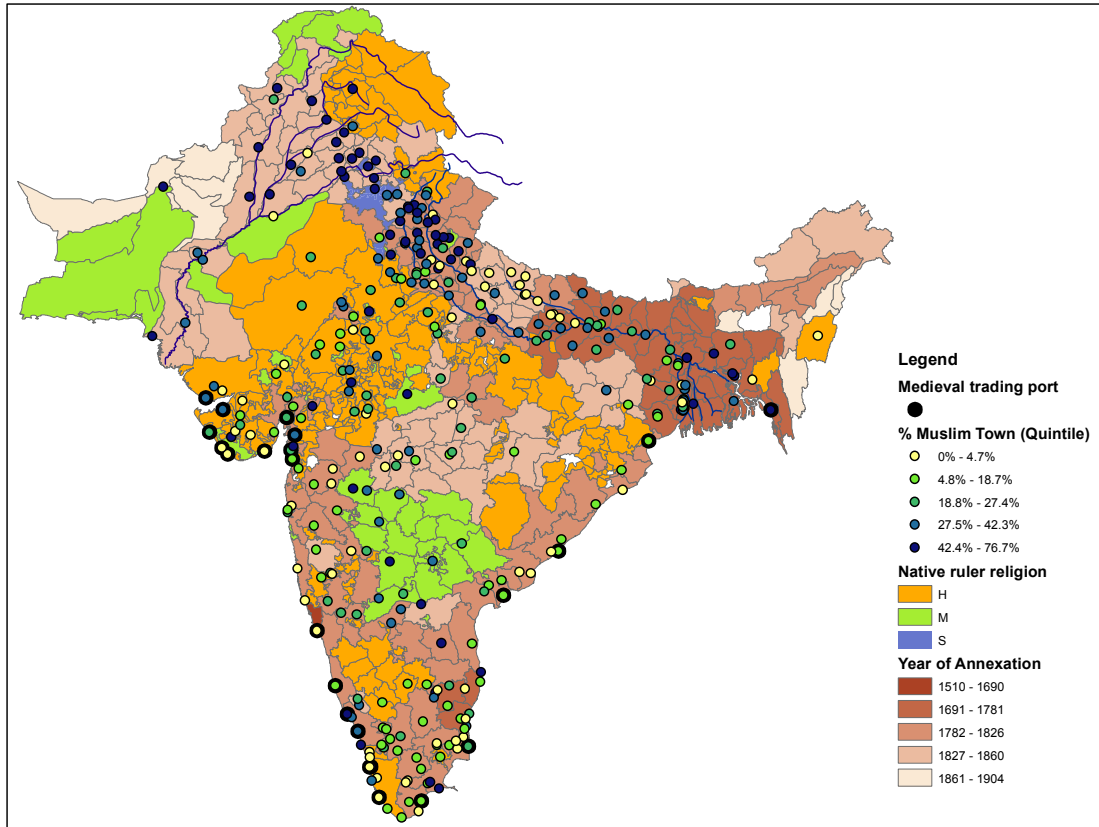


Figure 2: **Princely states and colonial expansion, 1750-1947:** Towns > 20,000. Colonial annexation began in Bengal and Madras before spreading inland, selecting the most densely populated regions. Notice that princely states are largely concentrated away from the coasts. Hindu kingdoms are concentrated in northwest, central and south India, particularly the modern states of Gujarat, Rajasthan and Kerala. Muslim states most noticeably include areas of modern day Pakistan, Bhopal in the centre and the Nizam's Dominions in south-central India.

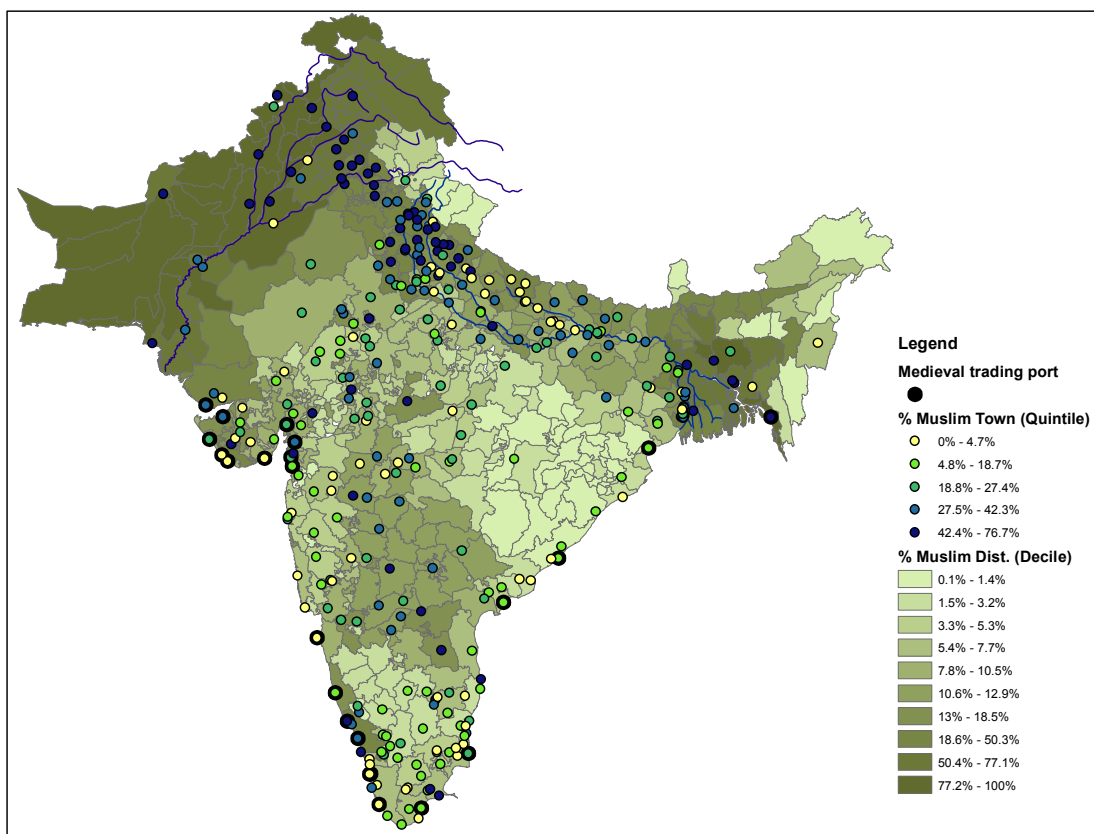


Figure 3: **Religious composition in towns and districts:** Towns > 20,000. Medieval trading ports are ringed. Notice the concentration of Muslims in regions of prior Muslim rule (the Ganges plains and the West), particularly in Muslim-controlled areas further from the Ganges. Notice that medieval ports tended to have greater Muslim populations than nearby areas even in 1901.

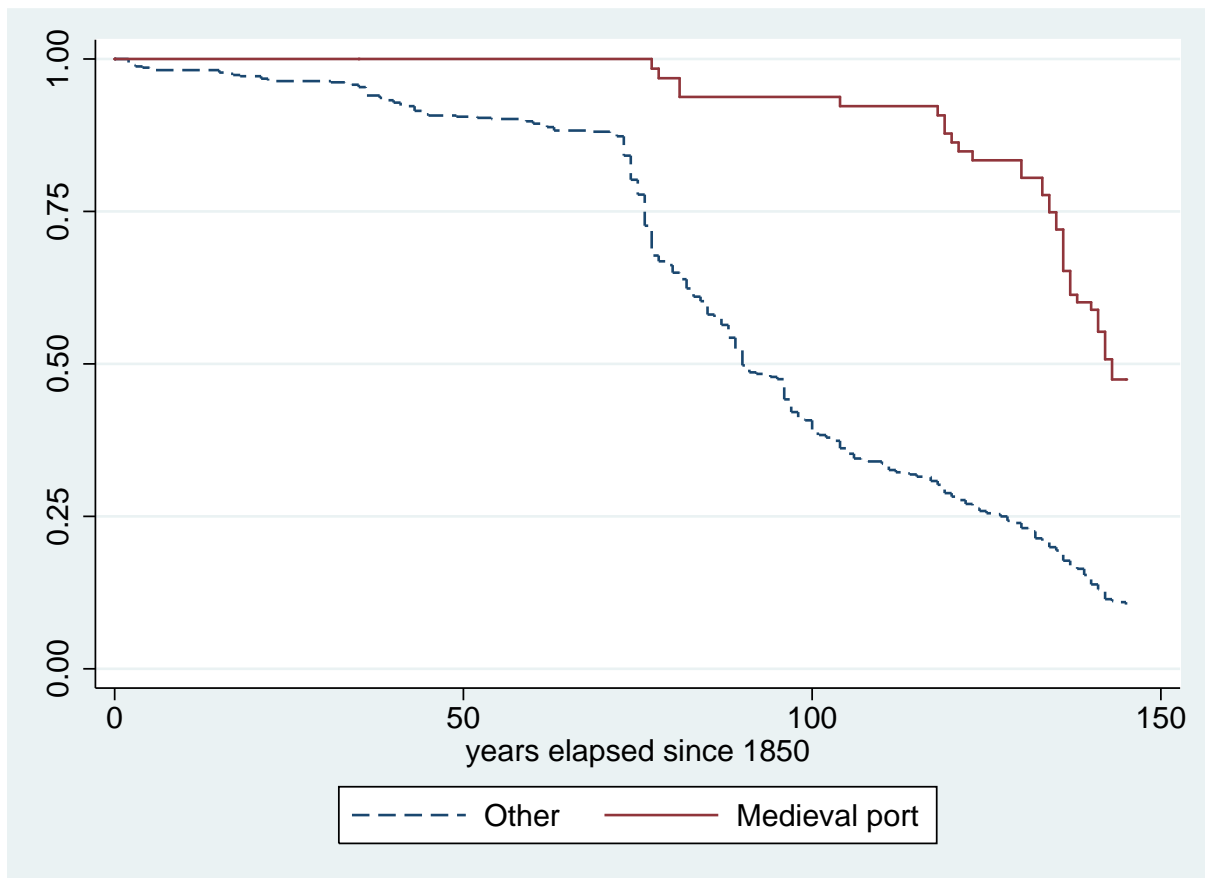


Figure 4: **Timing of the first failure of religious tolerance, 1850-1995:** This Kaplan-Meier curve compares the survival rate of towns without violence. Notice that most towns in the sample experienced at least one riot over the 145 year period, including most medieval ports. However, medieval ports have consistently survived for longer.