STANFORD
GRADUATE
SCHOOL OF BUSINESS

Dear colleagues:

The paper attached: ``A theory of ethnic tolerance" is still in its preliminary stages, as you can see. I would particularly appreciate your assessment of the applicability of the theory to the non-Indian examples I have mentioned and your thoughts on different contemporary and historical examples that either support or contradict the model's predictions. Naturally I would also be delighted to hear about any elements that you feel are particularly important but are currently missing from the theory.

Thanks a lot for the opportunity to present my work at the UCLA CP workshop!

Saumitra Jha
ASSISTANT PROFESSOR OF POLITICAL ECONOMY

GRADUATE SCHOOL OF BUSINESS, 518 MEMORIAL WAY,
STANFORD UNIVERSITY, STANFORD, CALIFORNIA 94305-5015
E-MAIL: JHA_SAUMITRA@GSB.STANFORD.EDU ◆ PHONE: (650) 721-1298 ◆ FACSIMILE: (650) 725-7979

A theory of ethnic tolerance

Preliminary and incomplete: please do not circulate or cite without permission

Saumitra Jha*
Graduate School of Business
Stanford University

January 9, 2009

1 Introduction

In the year 1026, Mahmud of Ghazni led his cavalry down from the mountains of Afghanistan into the plains of India. His objective was the wealthy Hindu temple city of Somnath on the coast of Gujarat. Mahmud destroyed the temple and sacked the city, killing an untold number of the city's inhabitants. Ever since, Mahmud's raid on Somnath has been considered a pivotal event that polarised the Hindus and Muslims of India against one another (Alberuni 1030, Thapar 2004).

Yet, little more than two centuries after the raid, the authorities of the re-built Somnath temple gave permission for a Muslim trader, Nur-ud-din Firuz of Hormuz, to found a mosque on temple lands. Hindu temple authorities actively encouraged Muslims to settle and trade near the temple, benefiting from the commercial taxes that Middle Eastern trade would bring (Thapar 2004). This mixed settlement of Hindus and Muslims still exists, though the Middle Eastern trade has long diminished and local merchants sell fish, not frankincense. In fact, throughout India, towns that traded to the Middle East in medieval times continue to show evidence of increased tolerance between Hindus and Muslims (Jha 2007b). Instead of being repositories of Hindu-Muslim hatred, Somnath and other medieval port towns provide a long history of inter-ethnic tolerance that yield important lessons on how such hatreds may be overcome.

At least as far back as Montesquieu in the 18th century, it has been argued that trade encourages "civility" between individuals, as loss of that trade renders any conflict more

*518 Memorial Way, Stanford CA 94305. This version was prepared for discussion at the UCLA comparative politics seminar. I am grateful for valuable discussions with Asim Khwaja, Michael Kremer and especially Susan Athey and Avner Greif.

costly (Hirschman 1977). Yet, looking at the repeated tension and violence between local populations and commercially-oriented ethnic minorities both throughout history and in many different settings around the world suggests a very different story. From the Jews in medieval Western Europe to the Chinese in modern Indonesia and South Asians in modern East Africa, commercially-oriented ethnic minorities have often been targets of violence and expropriation (Benbassa and Rodrigue 2000, Chua 2003).

Why then did Muslim traders in medieval Indian ports enjoy an enduring environment of tolerance while many other commercial minorities did not? This paper develops a simple model to address this question, and to uncover broader strategies for supporting ethnic tolerance. In the basic model, agents are repeatedly matched and play a modified two-sided prisoner's dilemma game, where 'fink' is interpreted as violently seizing the production of the other agent. There are two departures from the classic two-sided prisoner's dilemma. First, there are two types of agent, labeled "locals" and "non-locals". The only initial difference between the two is that non-locals have better options outside the economy but locals have cheaper access to more (or better) arms. Second, individuals produce two goods, A and B, that impose an externality on others that produce those goods: agents producing the same good always act as substitutes, reducing the payoffs to one another from production, while agents producing two different goods may provide either complements or substitutes to each other, respectively raising or lowering one another's payoffs.

In the case of Muslim traders in medieval India, the "non-local" group enjoyed social and cultural ties to Arabia and the Middle East not enjoyed by the local Hindu population. These made it easier for Muslim traders to leave and go elsewhere than for "local" Hindus, for whom information and social ties were also concentrated locally.

The paper focuses on finding strategies that support "peaceful co-existence" over time: no one prefers to leave, everyone produces and no one prefers to "fink"- attempt to violently seize production with a member of a different ethnic group. The model reveals that three conditions favour the maintenance of peaceful coexistence over time. First, it is valuable to have "complementarity" between ethnic groups, i.e. there are gains from exchange between them. Second, there should be a high cost for either group to steal or duplicate the source of the others' complementarity. Third, it is valuable to have a non-violent mechanism to redistribute the gains from trade between groups. It is useful to intuitively explain why these conditions are important for supporting peaceful coexistence.

The first condition that favours peaceful co-existence is that there be complementarities, rather than competition, between groups. Consider the opposite case: members of

different ethnic groups provide substitute goods or services that compete with each other. Then, a "strong" local (for whom violence is cheap) will have an incentive to target non-locals with ethnic violence. Violence against non-locals not only allows a strong local to seize their property but also to drive non-locals out and reduce competition. Weak non-local competitors are more attractive targets of violence than weak local competitors, as locals are harder to drive out of town: they essentially have nowhere else to go. Thus, societies where locals and non-local ethnic groups compete are likely to exhibit greater ethnic violence.

In contrast, when ethnic groups provide complementary goods or services to one another, the incentive to attack non-locals diminishes. If non-locals leave as a response to violence, locals will face reduced supply and higher prices for goods that only non-locals can provide. The greater the inter-group complementarity, the more valuable the presence of non-locals and the lower the incentives for ethnic violence.

Complementarities between ethnic groups that live in close geographical proximity are difficult to maintain over time, however. If non-locals provide valuable services to locals then, over long time horizons, members of the local group will have incentives to replicate their production processes, or simply to violently seize the means of producing that complementary good. Thus, a second condition for supporting peaceful coexistence over time is that the sources of ethnic complementarity be costly to replicate or expropriate.

Yet, even this "robust" inter-group complementarity will be insufficient for ensuring peaceful coexistence. When non-locals constitute a minority and provide a complementary good or service, the restricted supply of that service lead non-locals to enjoy high relative prices, and potentially even monopoly power. The resulting wealth inequalities between locals and non-locals lead to incentives by strong locals to target non-locals with violence to seize wealth and property. Thus a third condition to support peaceful co-existence is the need for an effective mechanism to redistribute the gains from trade.

Though a mechanism to redistribute the gains from trade from members of an non-local ethnic group to the local population is desirable for peaceful co-existence, it may fail to occur for two reasons. First, there is a public goods problem: the benefit of reduced incentives for ethnic violence is shared by all, but each individual would prefer that others pay. Thus there is a temptation for each individual to take advantage of others' contributions while reducing the amount the amount they themselves provide. Thus redistributive transfers will be under-supplied in general. Second, what transfers do occur will be from rich non-locals to a particular set of locals: the "strong" (often incumbent political elites), as these have the lowest costs of engaging in violence. In fact, these transfers of protection money to rulers by non-local ethnic groups, sometimes called

"ethnic cronyism", may actually provide perverse incentives for rulers to intermittently allow ethnic violence by poorer locals in order to extract greater transfers from non-local minorities. These sub-optimal outcomes can be improved upon by the introduction of explicit mechanisms to share the gains from trade with the broader local population.

The paper begins by sketching a theoretical framework to understand the incentives of agents to trade and engage in violence in ethnically-mixed regions. The paper then shows how the theory fits the particular case of trade in the medieval Indian Ocean. Finally, the paper draws lessons from the theory and India's institutional legacy to understand why ethnic tolerance fails and how tolerance may be fostered in contemporary settings.

2 Literature review

To be completed.

3 The model

Suppose that there are N producers within an economy with one of two labels:($i \in \{$"local (l)","non-local (nl)"$\}$), and period discount rate $\delta \in [0, 1]$. We assume that non-locals have better options outside the economy, with the period value of leaving normalised to 0 for locals, and $L > 0$ for non-locals. Each individual also has "armed strength" $s_k \in [0, \bar{s}] \subset \mathbb{R}_+$ that was chosen optimally.[1] . For now, we also assume that all locals have the same armed strength s_l, all non-locals have armed strength s_{nl} but $s_l > s_{nl}$ (locals have greater armed strength than non-locals).

Consider a sector of the economy with two goods $j \in \{A, B\}$. These goods may be differentiated, but may also be identical. Without loss of generality, let locals produce good A and non-locals good B. The timing of the game each period is as follows:

1-Exit: Individuals choose to stay or leave the economy.

2-Production: If individuals stay, they choose whether or not to produce one unit of good j, receiving payoff 0 to non-production, and $\Pi_j \equiv P_j(N_j, N_{-j}) - C$ to producing good j, where N_j are the number of individuals producing good j and C

[1] We can think of s as being the outcome of a period 0 game where agents select the optimal investment in quality of arms, and the expected benefits are as structured below. Each is deciding to invest in arms $s \in [0, \bar{s}] \subset \mathbb{R}^+$. The costs of acquiring better arms $c(\theta, s)$ are lower for certain "stronger" individuals, ranked $\theta \in \{1, 2, 3 \dots N\}$, i.e. $\forall \theta' < \theta$ and $s' > s$, $c(\theta', s') - c(\theta', s) > c(\theta, s') - c(\theta, s)$. Then the optimal investment in quality of arms s will also be non-increasing in θ. In an extension, we solve for equilibria for arbitrary distributions of θ

is the fixed cost of producing. Let $P_j(N_j, N_{-j})$ be decreasing in N_j and observe that $P_j(N_j, N_{-j})$ is decreasing (increasing) in N_{-j} if goods A and B are substitutes (complements). Let us denote $\tilde{\Pi}_k$ the payoff from the production choice for individual k (i.e. either $P_k(\cdot) - C$ or 0)

3-Violence: Following the choice to produce, each individual k is randomly matched with probability $\mathbb{P}(k, -k)$ to any other player $-k$ who they can choose to target with *violence* to attempt to seize the target's profits from production or choose *peace*. Assume that the probability of a match between any particular pair $(k, -k) \in K \times K \setminus k$ satisfies $\sum_{-k \in K \setminus k} \mathbb{P}(k, -k, N) = 1, \forall k \in K$, is decreasing in the number of agents N in the economy and that N is even, so everyone is matched.

For each potential aggressor-target pair, if both individuals choose peace, then both receive their own production $\tilde{\Pi}_k$. If, however, an individual k chooses violence against the other $-k$, the aggressor k can try to seize the other's profits, receiving the following expected period payoff:

$$B = F(s_k - s_{-k})\tilde{\Pi}_{-k}(\cdot) - D \tag{1}$$

where $F : [-\bar{s}, \bar{s}] \mapsto (0, 1)$ is a cumulative density function yielding the probability of an aggressor's victory as an increasing function of the relative armed strength of the aggressor and the target $s_k - s_{-k}$. Regardless of success, if any violence occurs, both individuals incur a loss $D \in \mathbb{R}_{++}$, a parameter that captures the destructiveness of violence.[2]

Definition 1 (strategy)**.** *A strategy is a complete contingent plan for each individual $k \in K^{N^t}$ in period t, mapping from: identities of all players $i^{N^t} \in \{$local, non-local$\}^{N^t}$, the strength of arms of the individual and all potential matches $s_k^{N^t} \in [0, \bar{s}]^{N^t}$, production good of all players, $j^{N^t} \in \{A, B\}^{N^t}$, history of violence of all players with each potential target x, $h_{k,x}^{N\tau} \in (k, x)^{N(N-1)\tau}, \tau \in \{0, t\}$ to: choice to stay or leave $L = \{$stay,leave$\}$, choice to produce or not to produce $R = \{0, 1\}$ and choice to engage in peace or violence with all potential matches $(peace, violence)^{(N-1)^t}$*

Definition 2. *(peaceful co-existence equilibrium). A peaceful co-existence equilibrium is a subgame perfect Nash equilibrium with the following properties:*

[2]Thus if both choose violence, the profits of both are liable to be expropriated and the payoff for each individual k is: $F(s_k - s_{-k})(\tilde{\Pi}_k + \tilde{\Pi}_{-k}) - D$. Observe that if violence is a dominant strategy for either agent, then the unique Nash equilibrium of the subgame is (violence, violence), as long as there is at least a little uncertainty about which agent prevails in conflict (i.e. $F(s_k - s_{-k}) < 1$).

1. *There is at least one member of each identity in the economy.* $i^{N^t} \cap K^{N^t} \neq \emptyset, \forall i \in \{local,\ nonlocal\}$

2. IC_p*: Every agent produces.* $R = 1, \forall k \in K^{N^t}$

3. IC_l*: No agent has an incentive to leave.* $V_{stay} \geq V_{leave}, \forall k \in K^{N^t}$.

4. IC_v*: No agent has an incentive to target another with violence.* $V_{peace} \geq V_{violence}, \forall (k, x) \in K \times K$

3.1 Peaceful coexistence in the one shot game

We will look for ethnic population profiles (N_l, N_{nl}) such that a peaceful co-existence equilibrium exists. We work backwards, first considering the incentives for violence, then the incentives to stay or leave.[3] Notice that the temptation for violence will be greatest for the strongest agent targeting the weakest agent, as the expected probability of successful expropriation will be at its highest. Observe that the best response to violence is violence, and thus all the non-violence constraints reduce to the single constraint below:

$$\mathbf{IC_v} : F(s_1 - s_N)(\Pi_1 + \Pi_N) - D \leq \Pi_1 \tag{2}$$

where $F(s_1 - s_N)(\Pi_1 + \Pi_N) - D$ is the payoff to the strongest agent from violence, and Π_1 (Π_N) is the value of profits the strongest (weakest) agent receives from peaceful production. In our simple motivating example, this is the subgame where a local is matched with a non-local. Substituting and rearranging (2), we get:

$$\mathbf{IC_v} : D \geq F(s_l - s_{nl})\Pi_{nl}(N_{nl}, N_l) - (1 - F(s_l - s_{nl}))\Pi_l(N_l, N_{nl}) \tag{3}$$

Notice that the non-violence constraint (IC_v) is relaxed (and thus peace easier to sustain) as the relative armed strength of non-locals gets closer to locals (mutual deterrence), as non-local profits Π_{nl} fall (locals have lowered temptation to expropriate non-locals) and as local profits rise (locals have more to lose from violence).[4]

Now consider the decision by non-locals to stay or leave. Depending on the ethnic composition (N_l, N_{nl})– which determines profits for each group– and on the outside

[3] In the stage game, notice that if an agent stays, they always produce.

[4] Note that, in our symmetric example, a member of an ethnic group never has an incentive to attack another in the same group along as there is some destructiveness of violence $D > 0$. This is because the expected gain is lower than the returns from peace: $F(s_k - s_k)(\Pi_k + \Pi_k) - D = \frac{1}{2} \cdot 2\Pi_k - D < \Pi_k, \forall k \in \{l, nl\}$. D could thus be interpreted either as physical destruction or as a cost due to implicit risk aversion.

options L faced by non-locals, there are four possible outcomes:

1. (N_l, N_{nl}) such that IC_v satisfied and $L \leq \Pi_{nl}(N_l, N_{nl})$ (IC_l satisfied): a peaceful co-existence equilibrium exists – there is a mixed population, full production and no violence.

2. (N_l, N_{nl}) such that IC_v satisfied and $L \geq \Pi_{nl}(N_l, N_{nl})$: no peaceful co-existence equilibrium: all non-locals leave (outside options exceed non-local profits even in a peaceful economy).

3. (N_l, N_{nl}) such that IC_v violated and $L \leq (1 - F(s_l - s_{nl}))(\Pi_{nl} + \Pi_l) - D$: no peaceful co-existence equilibrium: despite anticipating violence, non-locals stay and take their chances (profits are high enough or outside options bad enough to make the gamble worth it). Violence occurs.

4. (N_l, N_{nl}) such that IC_v violated and $L \geq (1-F(s_l-s_{nl}))(\Pi_{nl}+\Pi_l)-D$: no peaceful co-existence equilibrium: anticipating violence, all non-locals leave the market.

By giving us the critical profit levels at which peaceful co-existence can be sustained, these constraints also provide an implicit characterisation of the ethnic composition necessary to sustain peace. In particular: the maximum level of non-local profits that makes locals indifferent between expropriative violence and peace defines the minimum non-local population that can be sustained in a peaceful co-existence equilibrium ($\underline{N_{nl}}(N_l)$):

$$\Pi_{nl}(\underline{N_{nl}}, N_l) \equiv \frac{D + (1 - F(s_l - s_{nl}))\Pi_l(N_l, \underline{N_{nl}})}{F(s_l - s_{nl})} \tag{4}$$

and the minimum level of non-local profits necessary to make non-locals indifferent between staying and leaving defines the maximum non-local population possible in a peaceful co-existence equilibrium $\overline{N_{nl}}(N_l)$.

$$\Pi_{nl}(\overline{N_{nl}}, N_l) \equiv L \tag{5}$$

There are a few interesting features in these characterisations. First notice that if non-locals and locals produce complementary goods, then even in the one shot game, an increase in the non-local population N_{nl} will both reduce non-local profits Π_{nl} and raise local profits Π_l, relaxing the non-violence constraint. Thus, if non-locals provide complements, inter-ethnic peace is in fact easier to sustain as the size of the non-local minority rises.

In contrast, if locals and non-locals produce substitute goods, then an increase in the non-local population will have an ambiguous effect: on one hand, non-local profits will fall, making the non-local group less attractive targets of violence; on the other, local profits will also fall, reducing the potential downside to engaging violence faced by the local population. The direction of the effect will depend on the realisation of F and the change in the profit functions Π_l and Π_{nl}. If we assume, plausibly, that the own price response (i.e. the effect on non-local profits) is greater than the cross-price response (i.e. that on local profits), and given $F(\cdot) \in (\frac{1}{2}, 1)$, the effect will be relax the non-violence constraint. However, note that both these results contrast with much of the ethnic composition and violence literature, which suggests that ethnic violence will be unambiguously greatest as ethnic groups approach parity (eg (Montalvo and Reynal-Querol 2005), (Dion 1997)).[5]

A second intriguing element is that non-local minorities have mixed feelings about each other's company. With the same endowed production technology and providing substitute goods to one another, non-locals reduce one anothers' profits. However it is also in their interest to have others from the group around: if the group size falls below the threshold $\underline{N_{nl}}$, then non-local profits will rise to a level where there will be an incentive by locals to engage in expropriative violence.[6]

This population threshold $\underline{N_{nl}}$ was arguably a feature of medieval Indian Ocean trade. Non-Muslim Middle Eastern competitors, including Jewish and Armenian traders also enjoyed a long period of ethnic tolerance in Indian ports.(Goitein 1974) It is likely that this was because the minimum threshold $\underline{N_{nl}}$ for Middle Eastern trade was exceeded by the large number of Muslim traders, non-Muslim oceanic traders, even from small ethnic minorities, also enjoyed peaceful co-existence with the local population.

In fact, this threshold non-local population size would also be the minority size preferred by the non-local minority group as a whole.[7] In contrast, local producers would have different preferences for non-local immigration, depending on whether non-locals provide complements (in which case, local producers prefer the maximum incentive compatible non-local population:$\overline{N_{nl}}$) or substitutes (local producers would prefer there be

[5]Notice that if we relabel the profit function from production instead as a payoff function to majority voting for redistribution, then locals and non-locals act as substitutes as well– see section xx.

[6]Note that the violation of IC_v occurs even with full production by non-locals. If a non-local tried to unilaterally reduce production, profits would be even higher for other non-locals. One possibility that might sustain such higher profits for some would be if the increase in profits to other non-locals does not offset the expected reduction in payoffs to a local that results from being matched with a non-producer. This would relax IC_v. However this could not occur in the one shot game, as all non-locals prefer either to leave, or produce with the expectation of violence over receiving nothing.

[7]One could imagine an extension where the non-local minority raises barriers to other non-local entrants to maintain the threshold minority size.

no non-locals).

We can thus easily incorporate an extension with period 0 voting over non-local immigration. Note in particular that if non-producing local *consumers* are pivotal, a pro-immigration policy will be adopted, regardless of whether non-locals provide substitutes or complements to local producers, as either way, consumers will enjoyed reduced prices for both local and non-local goods. If local *producers* are pivotal, then they will adopt an immigration policy encouraging of non-locals that provide complements and against locals that provide substitutes.

As we shall see, permissive immigration policies, such as for Sephardic Jews in the Ottoman empire, appear to have been beneficial for peaceful co-existence over time. It is to long time horizons that we now turn.

3.2 Peaceful co-existence over long time horizons

So far we have found that under restrictive assumptions, peaceful co-existence can exist even in environments without repeated interactions. Large numbers of competing non-locals can support peaceful coexistence. This equilibrium depends on the destructiveness of violence to deter aggression. The profits of the weakest (i.e. non-local) agents need to be pushed down to low enough levels that they are not worth expropriating. The destructiveness of violence D must be higher than the outside option L, and the outside option low enough that non-locals prefer to stay even as profits fall with the rise in the non-local population.

We now consider what conditions are necessary to sustain cooperation between individuals when there are longer time horizons. Suppose now that $\delta \in [0, 1]$ and the stage game is played an infinite number of times. The key difference between the repeated game and the stage game is that locals and non-locals can now employ the threat of leaving and the threat of ethnic violence as strategies for punishing deviations and for ethnic cleansing: whereas before agents made decisions in anticipation of future violence, now individuals can decide to leave following a previous period's violent outbreak.

In fact, unlike standard folk theorems that suggest that cooperation is easier to sustain with repeated play over long time horizons, we will show that to sustain peaceful co-existence between groups over time, increased patience fosters peaceful cooperation only if locals and non-locals provide complements. In settings where non-locals provide substitutes, then the more patient locals will in fact have even more incentive to engage in ethnic violence: by doing so repeatedly, they can increase the incentives for non-locals to leave, thereby reducing the future competition they face.

First, let us examine the case where locals and non-locals provide substitutes.

Proposition 1 (Inverse Folk Theorem)**.** *Suppose locals and non-locals provide substitute goods. Then if* $\Pi_{nl}(1,1) < L + D$*, then* $\exists \delta^* \in [0,1]$ *such that* $\forall N_l, N_{nl} > 1$ *and* $\delta > \delta^*$*, no peaceful co-existence equilibrium can exist.*

Proof: Please see Appendix.

Proposition 2 (Existence of peaceful co-existence eqm with complements)**.** *Suppose locals and non-locals provide substitute goods. Then if* $\Pi_{nl}(1,1) < L+D$*, then* $\exists \delta^* \in [0,1]$ *such that* $\forall N_l, N_{nl} > 1$ *and* $\delta > \delta^*$*, a peaceful co-existence equilibrium exists with the following strategies: no one leaves, everyone produces, no violence. If a non-local targets a local with violence, a local always engages in violence if matched with that non-local. If a local targets a non-local, then the non-local leaves. Having engaged in violence with an agent, agents always engage in violence with that agent.*

Proof: Please see Appendix

3.3 Entry and expropriation of means of production

(*This section is in progress: here's the basic intuitive version*)

Thus, over long time horizons, inter-ethnic complementarity is not only desirable, it can be become necessary for a range of reasonable parameter values. However, this complementarity must also be robust in a particular sense: suppose non-locals are making high profits (e.g. N_{nl} is at its lower bound). Suppose also that at a finite fixed cost X, members of the local group could replicate (or expropriate) the means of production of the non-local group. Then over long time horizons, (δ high enough), there will be an incentive for locals to do just that. But in subsequent periods, these newly trained locals and non-locals will then provide substitutes, and thus newly-trained locals will have an incentive to engage in violence to encourage non-locals to leave. Thus, over long time horizons, peaceful co-existence needs to be supported both by inter-ethnic complementarity and by high costs of replication and expropriation of the means of production.

3.4 An extension: Dictators and ethnic cronyism

(*This section is in progress: here's a partial intuitive version*)

So far, we have been examining the incentives for violence in a society where the "state" is only reflected in the relatively high "armed strength" of locals. Instead, suppose we allow for differentiation among locals: allow one local- henceforth the "Local Boss" (lb) to have higher armed strength than other locals, i.e. $s_{lb} > s_l > s_{nl}$.

Notice that because the Boss is also a local producer, he will have an incentive to engage in violence against other substitute local producers to encourage them to stop production. Thus to sustain peaceful co-existence in this environment we can allow post-production, pre-violence transfers ("taxes"). Notice also that the incentives for violence against non-locals will bind first for the Boss. If non-local profits are high enough or in periods of crisis, when time horizons are short (δ is low), the Boss will have an incentive to engage in expropriative violence against non-locals. Thus, the best response for non-locals will be to engage in transfers to the Boss in exchange for "protection". Further, in the presence of such period transfers, the Boss can credibly commit to punishing locals that engage in violence with non-locals. Thus there can emerge a relatively stable "ethnic cronyism" peaceful co-existence equilibrium.

However, this ethnic cronyism equilibrium can engender perverse incentives for dictators ... *to be completed!*

4 An example: religious tolerance in medieval India

From the 7th century to the 17th century, Muslim traders involved in transoceanic commerce enjoyed not only robust complementarities but also a natural means of redistribution between groups. 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.[8] 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 networks, which are difficult to steal or replicate. 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 differed from land-based or riverine trade routes in this manner, as most long distance land-based trade can be divided into relays of shorter distances,

[8]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.

each of which can be replicated by a member of the local group.[9] 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.[10]

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).[11] 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 trading 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,

[9] 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.

[10] 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).

[11] Though Muslims dominated shipping, other Middle Eastern trading groups, including those of Jews and Armenians, were also involved in the Middle Eastern trade and cooperated in the Karimi convoys across the Indian Ocean (Goitein 1966). As discussed above, it is likely that the presence of Muslim competition made Indian ports less profitable but more tolerant destinations for these groups as well.

and the disintegration of the Mughal empire (Dasgupta 1998).[12] 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.[13]

Table 1 summarises the evidence for the different institutional mechanisms that emerged in medieval ports. Medieval-era institutions appear to have fulfilled two distinct, but complementary roles. One set of institutions encouraged group specialisation and raised the costs of replicating the services provided by another ethnic group. Specialisation in skilled activities was encouraged through a system of apprenticeships that were often exclusively limited to members of the same ethnic group (Campbell 1899, Haynes 1991). Own-group social sanctions also emerged that raised the costs of replicating another group's activities. A prominent example of this was the norm of *Kaala-paani* ("black water"): that Hindus that sailed offshore would be outcaste by their own community.[14]

[12] As early as 1621, the English were exporting pepper to the Levant, rather than importing it.

[13] 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.

[14] 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

Table 1: **Taxonomy of institutions in Indian medieval ports**

Coast	Major medieval ports	Muslim trading groups	Strong community organisation	Medieval complementary services	Medieval institutions			19th century/ contemporary complementary services	19th century/ contemporary institutions			Contemporary residential integration
					Additional barriers to replication	Inter-religious organisations	Transfer mechanisms		Additional barriers to replication	Inter-religious organisations	Transfer mechanisms	
Gujarat	Broach, Cambay, Dwarka, Porbandar, Surat, Somnath-Veraval	Arabs, Daudi Bohras, Memons, Nizari Ismailis	Yes[7]	Trans-oceanic shipping	Apprenticeship restrictions[5]	Merchant Guilds, Political delegations[2]	Commercial taxation[3], Joint ventures[2]	Agate, Carnelians[1], Silver thread weaving[5], Yarn cutting, Diamond cutting, (Gulf / SE Asia networks)[4]	Apprenticeship restrictions[5], Administrative sanctions, Social sanctions (Kaala-paani)[1]	Peace committees, Business associations[4], National political party ``minority wings"[7]	Political donations, Joint ventures[6], Local public goods, Disaster relief[7]	Yes[4,7]
Malabar/ Central West	Bhatkal, Calicut, Cranganore, Cochin, Mangalore, Quilon	Arabs, Bearys, Koyas, Mappilas, Nawaiyats	None evident	Trans-oceanic shipping	Social sanctions (Kaala-paani)[8]	Political delegations[8]	Commercial taxation, Joint ventures, Ease of conversion, Local public goods[8]	(Gulf networks), Commodities trading[4,9]	Social sanctions (Kaala-paani)[2]	Peace committees, Chambers of commerce, Clubs[4,9]	Local public goods[9]	Yes[4,9]
Coromandel (East)	Kilakkarai, Masulipatnam, Negapatnam, Pulicat, Tuticorin, Vizagapatnam	Marraikayars, Persians, Labbais	Yes[10,11]	Trans-oceanic shipping	None evident	None evident	Commercial taxation, Joint ventures[10], Voluntary donations to Hindu-specific public goods[11]	pearl diving, coastal shipping, (Gulf/ SE Asia networks)[10]	None evident	Regional political parties[10]		No[10,11]

Sources: 1: Mehta (1991), 2: Dasgupta (2000) 3: Thapar (2004), 4: Varshney (2002), 5: Gazetteer of the Bombay Presidency (1899), Haynes (1991), 6: Concerned Citizens Tribunal (2002), 7: personal interviews, Blank (2001), 8: al Malibari (1528), di Verthema (1503), Bouchon (2000), 9: Osella (2003), 10: More (1997), 11: S. Bayly (1989)

A second set of institutions helped reduce the incentives for violence, whether by coordinating responses to crises or by sharing the gains from exchange. In Gujarat and Malabar, merchant guilds and inter-religious organisations helped organise both boycotts and joint petitions to political figures to seek redress when members of one religious group were threatened by strong individuals (al Malibari 1528, di Verthema 1503). Organisations also emerged to encourage repeated interactions between members of different religious groups. This encouraged trust and the formation of joint ventures (Dasgupta 1994). Muslim traders around India provided commercial taxes and explicitly endowed local public goods, including water projects and even Hindu temples (Risley, Meyer, Burn, and Cotton 1909, Bayly 1989). Relative to other areas, conversion to Islam and immigration from the Middle East was encouraged by local populations in Malabar ports (al Malibari 1528), reducing costs of entry into trade and further increasing within-Muslim competition. The sharing of the gains from trade, whether through increased intra-group competition, explicit inter-group transfers or joint ventures between groups are likely to have provided Hindus and Muslims in medieval ports reduced incentives for inter-ethnic violence in times of crisis.

As Table 1 indicates, a number of these institutional mechanisms have persisted and evolved through the 19th and 20th centuries. A tradition of inter-religious participation in organisations continues to flourish in a number of towns that were once trading ports in the medieval period, including in business organisations, clubs and even political parties (More 1997, Varshney 2002). These organisations may have also facilitated the maintenance of complementarities between groups. In contemporary Surat, for example, Muslims and Hindus have continued to explicitly adopt complementary roles in production, long after the demise of Surat's trade. Diamond-cutting and silver-thread weaving are almost exclusively conducted by Muslim workers, while complementary roles in both production processes are handled by Hindus and Jains (Varshney 2002).[15]

Though the institutions that emerged in medieval trading ports share an economic logic, relations between Hindus and Muslims do differ across ports. For example, Muslim traders in Calicut and Surat showed (and continue to show) evidence of social and residential integration.[16] These cities are also notable for the presence of contemporary mech-

dominance of overseas trade began to decline. (Mehta 1991) Thus it may be that these institutions were established as a response to growing competition between groups.

[15]For other examples, including on restrictions on Hindu entry into the agate trade in Cambay, see Mehta (1991).

[16]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.'"

anisms, 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 and pursued joint trading ventures with the local rulers of Ramnad (More 1997, Eaton 1993, Bayly 1989). Thus, the presence of inter-religious complementarities has not necessarily resulted in widespread social and residential integration between members of different religions. Instead, a common feature of these ports is the development of organisations that helped reduce the effect of shocks on violence, either explicitly or by sharing the gains from trade between groups. These organisations also may have helped foster new inter-religious complementarities after the decline of Muslim advantages in trade.

5 Maintaining peaceful co-existence in other settings

The logic underlying peaceful coexistence between Hindus and Muslims in medieval ports and the supporting institutions that emerged can be readily applied to other historical and contemporary settings where non-local and local ethnic groups co-exist, both to understand why ethnic tolerance failed, and how tolerance may be fostered. The model suggests that ethnic violence is likely to occur when ethnic groups compete, when the source of inter-ethnic complementarity is easy for one group to expropriate or replicate, or when no mechanism exists to redistribute the gains from trade.

Competition between locals and immigrant groups for jobs has often been cited as a reason for ethnic tension (Olzak 1992). The theory above suggests that these tensions are most likely to arise in jobs that are unspecialised and require either few or generally-available skills or inputs, since these are the least costly to enter. Yet, even non-local minorities who do not compete, but enjoy complementarities that stem from tangible assets, such as land, machines or other forms of physical capital, will face violence. These assets can be seized by strong locals, as white farmers in Zimbabwe discovered in the late 20th century.

Being impossible to violently expropriate, specialised skills do provide a better basis for inter-ethnic complementarity and tolerance, but even these can be replicated in the longer term. Minorities that have specialised skills can become increasingly attractive targets of violence if locals become able to duplicate those skills. The forced expulsion of Jews from Spain at the end of the 15th century was precipitated in part by prior conversions, both forced and voluntary, of Jews to Christianity. These "new" Christians provided the administrative skills to Spanish rulers for which they previously depended

on the better-educated Jewish population (Benbassa and Rodrigue 2000). It is possible that the expansion of public education in Western Europe and the United States may also have had the unfortunate side-effect of raising the likelihood of violence against educated minority incumbents in skilled jobs by rendering them more replaceable by locals.

In contrast to physical and human capital, most ethnic trading networks are both difficult to steal– being intangible– and extremely costly to replicate. Because there are "network externalities"– the value of a trading network increases with the size of its membership– there will be high costs for any local to invest in a set of personal exchange relationships that would attain the scale necessary to compete with an ethnic trading network. Thus non-locals can use the privileged access to goods and services from ethnic ties elsewhere to provide the basis for sustained complementarity in mixed communities.

Like Muslim traders in medieval Indian ports, Sephardic Jews benefited from valuable trading networks in the 15th and 16th centuries that rendered them welcome arrivals in Ottoman ports in the Mediterranean. With links to Spain and the Atlantic economy, their immigration was actively encouraged by local Ottoman authorities and the city of Salonica in particular attracted a large number of Jewish refugees. A combination of permissive immigration and religious specialisation resulted in a long history of peaceful ethnic co-existence (Benbassa and Rodrigue 2000).[17] 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].

While the trading networks of the Chinese in modern Indonesia and South Asians in modern East Africa also made them valuable to the local population, these groups have also lacked a general mechanism of redistribution. Chinese and South Asian ethnic trading networks, based upon personal and community ties, were closed to competitors, and thus relatively small minority groups were able to capture much of the gains from trade. This appears to have rendered these minorities increasingly attractive targets for ethnic violence and susceptible to expropriation by "strong" locals (Landa 1994, Chua 2003). Indeed, "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). Consistent with the "ethnic cronyism" incentives suggested above, such leaders appear to also intermittently revoke this "protection" to demonstrate its value when minority profits are unobservable: allowing pogroms by weaker locals as means to extract still greater long-term transfers.

[17] A less attractive aspect of ethnic specialisation in the Ottoman empire was that it was strictly enforced by the state.

One ethnic trading network, however, is remarkable in its relative success at maintaining peaceful and profitable coexistence with local populations in East Africa and elsewhere. The Nizari Ismailis, followers of the Aga Khan, have developed systematic mechanisms of explicit philanthropy that benefit the local population, including the provision of public goods, such as hospitals and schools, as well as organisations that explicitly match Ismailis and locals in joint business ventures (Penrad 2000). These mechanisms also often include commitments not to engage in corrupt practices that foster "ethnic cronyism". As argued above, 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. Though the Ismaili case is unusual in its level of organisation, it suggests that minority communities, acting on their own initiative, may benefit from organising explicit transfers and public goods provision.

6 Conclusions

In medieval Indian ports, Hindus and Muslims developed institutions that continue to support ethnic tolerance today. These institutions provide insights into how policymakers can encourage peaceful co-existence across ethnic lines. 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 sharing of the gains from trade.

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).[18] 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.[19] 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

[18]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.

[19]Such an organisation has indeed been established by the Ismaili community in East Africa.

inter-ethnic peace and minority economic integration today.

7 Appendix

Proof of Proposition (1): We look for a $\delta^* \in [0,1]$ above which a profitable deviation always exists. Locals will attack non-locals if

$$F(s_l - s_{nl})\Pi_{nl}(N_{nl}, N_l) - D \geq \frac{\Pi_l(N_l, N_{nl}) - \Pi_l(N_l, N_{nl} - 1)}{1 - \delta} \tag{6}$$

where the LHS is the first period payoff to violence, and the RHS is the continuation payoff from violence. Observe that $\Pi_l \downarrow N_{nl}$ because locals and non-locals provide substitutes and thus $\Pi_l(N_l, N_{nl}) - \Pi_l(N_l, N_{nl} - 1)$ is negative. Since the RHS is bounded and the LHS $\to -\infty$ as $\delta \to 1$, we can always find a $\delta^* \in [0,1]$ above which violence is profitable.

Need to also check the condition that non-locals actually leave if targeted with violence. The incentive constraint to leave following violence is:

$$L > (1 - \mathbb{P})\Pi_{nl}(N_{nl}, N_l) + \mathbb{P}[(1 - F(s_l - s_{nl}))(\Pi_{nl}(N_{nl}, N_l) + \Pi_l(N_{nl}, N_l)) - D] \tag{7}$$

So we need that $(1 - F(s_l - s_{nl}))\mathbb{P}(\Pi_{nl} + \Pi_l) < L + D, \forall N_l, N_{nl}$. We want to ensure that the individual always leaves, no matter how desirable staying might be, so pick the highest profits– (with $\Pi_n l(1,1)$), thus by the monotonicity of Π and $\mathbb{P} = 1$, this is satisfied by the condition:

$$(1 - F(s_l - s_{nl}))\Pi_{nl}(1,1) < \frac{1}{2}(L + D), \tag{8}$$

Note that within the range $F(\cdot) \in (\frac{1}{2}, 1)$, since $D > 0, L > 0$, this condition is always slack for $\Pi_{nl}(1,1) < L + D$.□

Proof of Proposition (2)

Solving backwards, need to check constraints for each agent to engage in violence with all possible matches.

1. $IC_v(l,l)$ and $IC_v(nl,nl)$: note that everyone is symmetric and $F(0) = \frac{1}{2}$. Agents matched with one of their same type prefer peace if:

$$F(0)\Pi_j(\cdot) - (1 - F(0))\Pi_j(\cdot) < D \tag{9}$$

Or:

$$\Pi_j(2\frac{1}{2} - 1) < D \tag{10}$$

Thus this is always satisfied for $D > 0$.

2. $IC_v(l, nl)$: A local will prefer peace when matched with a non-local if:

$$F(s_l - s_{nl})\Pi_{nl}(N_{nl}, N) - D \leq \frac{\Pi_l(N_l, N_{nl}) - \Pi_l(N_l, N_{nl} - 1)}{1 - \delta} \tag{11}$$

Since agents provide complements, $\Pi_l(N_l, N_{nl}) - \Pi_l(N_l, N_{nl} - 1)$ is positive and the RHS $\to +\infty$ as $\delta \to 1$. So a $\delta^* \in [0, 1]$ exists where this constraint is satisfied Furthermore, as before, the leaving constraint is also satisfied by the condition above.

3. $IC_v(nl, l)$: Since $s_{nl} < s_l$ and non-local profits are higher, if a local prefers peace when matched with a non-local, then the non-local will also prefer peace when matched the local, so this constraint does not bind.

□

References

al Malibari, Z. a.-D. (1528): *Tohfut-ul-mujahideen*. Oriental Translation Fund of Great Britain, London, translated from the Arabic by Rowlandson, M.J. in 1833.

Alberuni, A.-R. M. I. A. (1030): *Indica*. Munshiram Manoharlal, Delhi, 2005 edn., edited by Sachau, Edward C.

Arasaratnam, S. (1994): *Maritime India in the seventeenth century*. Oxford University Press, Delhi.

Barbosa, D. (1519): *A description of the coasts of East Africa and Malabar in the beginning of the sixteenth century*. Hakluyt Society, London, translated from the Portuguese by Stanley, Henry E. J. in 1866.

Bayly, S. (1989): *Saints, goddesses and kings: Muslims and Christians in South Indian society 1700-1900*. Cambridge University Press, Cambridge.

Benbassa, E., and A. Rodrigue (2000): *Sephardi Jewry: a history of the Judeo-Spanish community, 14th-20th centuries*. University of California Press, Berkeley.

Bose, S. (2006): *A hundred horizons: the Indian Ocean in the age of global empire*. Harvard University Press, Cambridge, MA.

Bouchon, G. (2000): "A microcosm: Calicut in the Sixteenth century," in (Lombard and Aubin 2000), chap. 4, pp. 78–87.

Campbell, J. M. (ed.) (1899): *Gujarat Population- Musalmans and Parsis*, vol. 9 of *Gazetteer of the Bombay Presidency*. Govt. Central Press, Bombay, reprinted, 1990 edn.

Chua, A. (2003): *World on fire: how exporting free market democracy breeds ethnic hatred and global instability*. Doubleday, New York.

Dasgupta, A. (1994): *Merchants of maritime India, 1500-1800*. Variorum, Aldershot.

——— (1998): "Trade and politics in Eighteenth century India," in *The Mughal State*, ed. by M. Alam, and S. Subrahmanyam, chap. 13. Oxford University Press, Delhi.

——— (2004): *India and the Indian Ocean world: trade and politics*. Oxford U Press, Oxford, UK.

di Verthema, L. (1503): *"The nauigation and voyages of Lewes Vertomannus, gentleman to the citie of Rome*. Hakluyt, transl. from the Latin by Eden, Richard, 1576.

Dion, D. (1997): "Competition and ethnic conflict: artifactual?," *Journal of conflict resolution*, 41(5), 638–648.

Eaton, R. M. (1993): *The rise of Islam and the Bengal frontier, 1204-1760*. University of California Press, Berkeley, CA.

Goitein, S. D. (1966): *Studies in Islamic history and institutions*. E.J. Brill, Leiden.

——— (1974): *Letters of Medieval Jewish Traders*. Princeton University Press, Princeton.

Greif, A., and D. D. Laitin (2004): "A theory of endogenous institutional change," *American Political Science Review*, 98(4), 633–52.

Haynes, D. E. (1991): *Rhetoric and ritual in colonial India: the shaping of public culture in Surat city, 1852-1928*. University of California Press, Berkeley.

Hirschman, A. O. (1977): *The passions and the interests: political arguments for capitalism before its triumph.* Princeton University Press, Princeton, NJ.

Ibn Battuta, A. A. (1355): *The travels of Ibn Battuta*. Lenox Hill, New York, 1971 edn., translated from the Arabic by Lee, Samuel, 1829.

Jha, S. (2007a): "Shareholding, coalition formation and political development: evidence from 17th century England," Harvard University.

——— (2007b): "Trade, institutions and religious tolerance: evidence from India," Harvard University: available at: www.fas.harvard.edu/∼jha/papers/Jhatradetolerance.pdf.

Kuran, T. (1997): "Islam and underdevelopment: an old puzzle revisited," *Journal of Institutional and Theoretical Economics*, 153, 41–71.

Landa, J. T. (1994): *Trust, ethnicity and identity: beyond the institutional economics of ethnic trading networks, contract law and gift-exchange.* University of Michigan Press, Ann Arbor.

Lombard, D. (2000): "Introduction," in (Lombard and Aubin 2000), chap. 1.

Lombard, D., and J. Aubin (eds.) (2000): *Asian merchants and businessmen in the Indian Ocean and the China Sea.* Oxford University Press, New Delhi.

Mazower, M. (2005): *Salonica, City of Ghosts.* Alfred A. Knopf, New York.

Mehta, M. (1991): *Indian merchants and entrepreneurs in historical perspective: with special reference to the shroffs of Gujarat, 17th to 19th centuries.* Academic Foundation, Delhi.

Milgrom, P., Y. Qian, and J. Roberts (1991): "Complementarities, momentum and the evolution of modern manufacturing," *American Economic Review: Papers and Proceedings*, 81(2), 84–88.

Montalvo, J. G., and M. Reynal-Querol (2005): "Ethnic polarization, potential conflict and civil wars," *American Economic Review*, 95(3), 796–816.

More, J. (1997): *The political evolution of Muslims in Tamilnadu and Madras, 1930-1947.* Orient Longman.

Olzak, S. (1992): *The dynamics of ethnic competition and conflict.* Stanford University Press, Stanford, CA.

Penrad, J.-C. (2000): "The Ismaili presence in East Africa: a note on its commercial history and community organization," in (Lombard and Aubin 2000), chap. 17, pp. 223–238.

Risley, H., W. Meyer, R. Burn, and J. Cotton (eds.) (1909): *The Imperial Gazetteer of India*, vol. various volumes. Clarendon Press, Oxford.

Rodinson, M. (1972): *Islam and Capitalism*. Pantheon, New York, translated from the French (1966) by Pearce, Brian.

Subrahmanyam, S. (2000): "Introduction," in (Lombard and Aubin 2000), chap. 1.

Thapar, R. (2004): *Somanatha: the many voices of a history*. Penguin, New Delhi, India.

Varshney, A. (2002): *Ethnic Conflict and Civic Life: Hindus and Muslims in India*. Yale University Press, New Haven.