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A Theory of Moral Persistence: Crypto-Morality and Political Legitimacy

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Abstract

Why, how, and under what conditions do moral beliefs persist despite institutional pressure for change? Why do the powerful often fail to promote the morality of their authority? This paper addresses these questions by presenting the role of crypto-morality in moral persistence. Crypto-morality is the secret adherence to one morality while practicing another in public. A simple overlapping generations model is developed to examine the conditions under which crypto-morality is practiced, decays and influences the direction of moral change. We demonstrate the empirical relevance of crypto-morality by discussing the moral foundations of political legitimacy in various historical episodes.

JEL classifications D02, D10, D82, N30, N40, P16

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"Man sees the outward appearance, but God sees the heart."
1 Samuel 16:7

1 Introduction

Moral standards – internalized rules of behavior from which deviations are psychologically costly – influence economic outcomes.[1] Moreover, moral standards (or beliefs) are surprisingly persistent in hostile institutional environments. Communism, for example, failed in using force to eradicate the Russian Orthodox Church or to eliminate national identities in the Eastern block. How and under what conditions do past moral beliefs persist in hostile institutional environments? What factors limit the use of coercive power and economic rewards to influence moral evolution?

This paper argues that people strategically respond to institutional pressure by practicing *crypto-morality*. ("Crypto" from "kryptein", Greek for "to hide.")[2] They pretend to hold the institutionally sanctioned moral belief (or *morality* for short), while secretly holding and transmitting another morality to their children. Once the institutional repression ceases, the morality that was secretly held manifests itself.

Crypto-morality is widely practiced.[3] It contributes to the survival of political opposition in dictatorial regimes, to the perpetuation of illegal racism and sexism in modern democracies, and to the persistence of religious minorities. For example, in Catholicism one condition for forgiveness of a sin is that it was neither deliberate nor made with complete consent. The principle of *Taqiyya* in the Shia theology goes even further and explicitly allows believers to conceal their faith when under threat, persecution or compulsion. The practice of crypto-morality has enabled illegal moral standards to persist for centuries. For example, belief in reincarnation is atypical for Islam but prevails in some Islamic sects including the one million strong Druze community. For this and other reasons, these sects have often been considered heterodox or even heretical but nevertheless survived in the Islamic world while concealing their true beliefs.[4]

How exactly does crypto-morality work? Under what conditions is it effective? This paper develops a simple choice-theoretic, overlapping generations model to address these questions. The model's usefulness is illustrated by applying it to study political legitimacy.

Our model of crypto-morality is developed in Section 2. It follows the seminal work of Bisin and Verdier (2000, 2001) on socialization, which is the process through which moral beliefs are

[1] E.g., North 1990; Platteau 1994; Greif 1994, 2006; Roland 2004; Guiso, Sapienza and Zingales 2006; Tabellini 2008a. This particular definition of morality is taken from Greif 2010.

[2] Institutions here are coercively enforced rules. For a broader definitions of institutions, see Greif 1998, 2006; Hogdson 2006, or Aoki 2001.

[3] Wikipedia lists Crypto-Anarchism, Crypto-Bismarckian, Crypto-Calvinism, Crypto-Christianity, Crypto-Judaism, Crypto-Muslims, Crypto-Nazism, Crypto-Paganism, Crypto-Christianity, Crypto-Communism, Crypto-fascism, and Crypto-politics.

[4] Encyclop dia Britannica Online. 2010. "Druze" and "'uqqal." accessed 10 July 2010 <http://search.eb.com/eb/article-9031268>,
<http://search.eb.com/eb/article-9074409>.

transmitted and internalized by individuals. In their model, moral beliefs are transmitted to children by their parents and are influenced by their prevalence in the society. Parents exhibit "imperfect empathy:" they evaluate the utility implications of their children's future actions based on their (the parents') morality. Parental socialization is a costly investment, which increases the probability that a child would have his parent's morality. A lower investment increases the probability that a child will have the morality held by the majority of the population. As a consequence, a parent whose morality is held by a minority has an incentive to invest heavily in socialization, which in turn strengthens the minority's morality. It follows that, under reasonable regularity conditions, endogenous investment in socialization results in equilibrium moral diversity.

This approach helps explain the persistence of cultural minorities, but it does not explain moral persistence in hostile institutional environments. To substantiate this claim, we expand the Bisin and Verdier model to introduce a hostile authority who can impose penalties on those who don't follow the authority's preferred morality. This authority can be, for example, a new political regime, a religion that gains political power, a dictator who wishes to perpetuate his dynastic control, or even a new management attempting to alter a company's culture. We then show that if the penalty is sufficiently high then all parents will socialize their children to conform with the authority's preferred morality, resulting in a *moral transition*. Hence, the analysis highlights the need to explain why authorities fail to implement their preferred morality in equilibrium.

To address this, we introduce crypto-morality into the analysis. This is modeled by decoupling the behavior of individuals from their morality. We allow individuals to behave in ways that contradict their morality, while still transmitting it to their children. Behaving in this way results in costs and benefits. The costs are a result of deviating from one's morality. The benefits come from reducing the likelihood of a penalty. When crypto-morality is adopted, this results in a *behavioral transition* in which people behave as if they had adopted the authority's preferred morality, yet a moral transition does not transpire.

We examine, among other issues, conditions under which crypto-morality will be chosen over adopting the authority's preferred morality, or over the original morality. We first analyze the case in which crypto-morality is not detectable. If penalties are sufficiently low, then choosing the original moral action and incurring the penalty is preferred to the utility loss from practicing crypto-morality. When the penalties are relatively high, crypto-morality is the preferred action. The analysis is generalized to the case where crypto-morality is detected with a positive probability. It is still the case that an increase in penalties will lead to a behavioral transition and not a moral transition when the probability of detection is not too high. What is more surprising is that given a penalty that is not too high, an increase in the probability of detection will cause previously crypto-moral individuals to choose their original moral action.

We also explore the use of schooling, or indoctrination, as an alternative mechanism to induce a moral transition. We model the implementation of a centralized schooling system as an institu-

tion that changes the probability of socialization to the authority's preferred morality. We show that on one hand, this mechanism is more effective in causing a moral transition since it does induce crypto-morality. On the other hand, however, the moral transition is slower to transpire as compared to a high enough expected penalty.

From the authority's perspective, if the probability of detection is higher, then the attractiveness of coercive penalties increases as compared to schooling. However, the relative attractiveness of schooling will change over time endogenously as a function of the composition of moralities in society. In particular, if detection is not perfect so that sometimes "false positive" identification of transgressors occurs, then as the moral transition transpires, the attractiveness of using coercive penalties decreases. As a result, the authority will abolish the coercive institutions, possibly in favor of other means of indoctrination.

We illustrate the importance of crypto-morality in moral persistence in Section 3 by discussing the significant, yet theoretically challenging issue of political legitimacy. We define legitimacy of a political authority as the extent to which people feel morally obliged to follow the authority (Greif 2010). Clearly, political legitimacy is valuable because, as Max Weber has noted, it increases the likelihood of staying in power, *ceteris paribus*. Even a dictator prefers that he would be considered the only morally accepted ruler. Similarly, a democratically elected president prefers that his party's ideology would become the only morally accepted one. Hence, when a new political authority comes to power, it may benefit from a moral transition to enhance its political legitimacy.

Specifically, we consider three episodes of new political authorities. The first is the consolidation of the Spanish monarchy following the *Reconquista* of Spain from the Muslims. We demonstrate that the mechanisms utilized to enhance political legitimacy of the new regime, particularly the Spanish Inquisition, are consistent with our theoretical analysis. In addition, we argue through the lens of our analysis that the decline of the Spanish Inquisition in the 19th century transpired when indoctrination, rather than force, became more effective in moral transitions. We then compare the educational reforms in the French and Turkish Republics and demonstrate that their relative success is consistent with our analysis. Finally, we present evidence for the persistence of the moral basis of political legitimacy in China and the Middle East. This last piece of evidence illustrates that the high cost of detecting and eradicating crypto-morality induced rulers to conform to the prevailing legitimacy norms.

There are many useful economic models of morality but none captures the main features of crypto-morality.[5] The "preference falsification" framework dominates the analysis of the relationship between a penalizing authority and the preferences and actions of individuals (e.g., Kuran 1991).[6] The main idea of this framework is that the authority penalizes public expressions of an

[5] Frank (1987) presents an insightful evolutionary model of how genetic capacity to credibly signal morality (honesty) evolves. Tabellini (2008) examines the conditions leading to general and limited morality. Other models such as Benabou and Tirole (2006) and Iannaccone (1992) consider the consumption value of moral goods and the value of the public goods usually offered by moral fellows.

[6] Rubin (2009) also looks at the role that institutionalized penalties play in encouraging people to choose actions

individual's beliefs in order to prevent other individuals from updating their own beliefs about the authority's conduct. A by-product of the authority's success in preventing public expressions of negative private information is its effect on preferences. "People rely on the prevailing climate of opinion in developing the personal belief systems that underlie their private policy preferences. With this climate being formed by the justifications offered for preferences expressed publicly, it turns out that a by-product of preference falsification may be a shift in the distribution of private preferences in favour of the status quo" (Kuran 1987: 642-3). In contrast, in our framework the initial distribution of preferences is known and the penalty is aimed at changing preferences rather then preventing the diffusion of information about it.

2 Socialization in a Hostile Institutional Environment

We begin with a simple overlapping generations model of socialization that closely follows the inspiring work of Bisin and Verdier (2000, 2001). The benchmark model in section 2.1 restates their main insights and sets the stage for the extensions we consider in later sections of the paper.

2.1 Benchmark: Socialization and Moral Heterogeneity

In each generation there is a continuum of agents and each lives for two periods, first as a child and then as a parent. Each parent has exactly one offspring, making the population stationary (normalized to one). There are two possible "moralities," or types: $m \in \{a, b\}$ and two possible actions, $x \in \{a, b\}$. Letting u_x^m denote the utility of type m from action x, we assume that $u_m^m > u_n^m$, $n \neq m$. Hence, morality is synonymous with preferences over actions where an a morality person prefers action a while a b morality person prefers action b. We simplify by making preferences symmetric and assume that $u_a^a = u_b^b = \overline{u}$ and $u_b^a = u_a^b = \underline{u}$.

The transmission of moral preferences occurs through social learning. Children are born without well-defined moralities, and they acquire moral preferences through the influence of their parents, often referred to as "vertical transmission," and through the influence of the general population, often referred to as "oblique transmission". Parents purposefully attempt at socializing their children, despite the costs they incur in the process.

A parent is motivated to socialize his child because each parent is altruistic, but in a limited way. Namely, parents perceive the welfare of their children only through the filter of their own preferences. Bisin and Verdier (2000, 2001) call this particular form of myopia "imperfect empathy". It's result is that parents always want to socialize their children to their own morality. In Bisin and Verdier's models, a parent cares about the choice of their child and not directly about the preferences of the child. As we will see later in section 2.2, this distinction is neither important in the models that Bisin and Verdier analyze, nor in our benchmark model, but it will play a role later in our analysis.

diverging from their preferences focusing on social effects.

A child's socialization occurs in two steps. First, a parent of type m decides how much to invest in socializing his child. We denote this investment by τ^m, and the child adopts his parent's morality with probability τ^m. With probability $1-\tau^m$, however, the parent's efforts fail and the child is matched randomly with an individual of the old generation and adopts their morality.

More precisely, let q_t denote the proportion of a types in the population at time t and let P^{mn} denote the probability that a parent of morality m has a child that adopts morality n. It follows that:

$$\begin{array}{ll} P^{aa} = \tau^a + (1-\tau^a)q_t & P^{ab} = (1-\tau^a)(1-q_t) \\ P^{bb} = \tau^b + (1-\tau^b)(1-q_t) & P^{ba} = (1-\tau^b)q_t \end{array} \tag{1}$$

It then follows that the fraction q_{t+1} of adult individuals of type a in period $t+1$ is:

$$\begin{aligned} q_{t+1} &= q_t P^{aa} + (1-q_t)P^{ba} \\ &= q_t + q_t(1-q_t)(\tau^a - \tau^b) \end{aligned} \tag{2}$$

where the second equality follows from simple algebra.

Turning to the parent's choice to socialize their child, let $H(\tau^m)$ denote the cost of socialization effort τ^m. We assume that $H(\tau^m)$ is convex and guaranties an interior solution to the parent's problem by assuming standard Inada conditions: $H' \geq 0$, $H'' > 0$, $H'(0) = 0$ and $\lim_{\tau^m \to 1} H'(\tau^m) = \infty$. Assuming no discounting, and that a child of morality m will choose action m (which is what his m-type parent wants), each parent with morality m will choose τ^m to maximize,

$$U^m = P^{mm}\overline{u} + P^{mn}\underline{u} - H(\tau^m) \ . \tag{3}$$

It follows from (1) and (3) that a parent of morality a chooses τ^a to maximize,

$$\begin{aligned} U^a &= [\tau^a + (1-\tau^a)q_t]\overline{u} + (1-\tau^a)(1-q_t)\underline{u} - H(\tau^a) \\ &= \underline{u} + q_t\Delta u + \tau^a(1-q_t)\Delta u - H(\tau^a) \ , \end{aligned} \tag{4}$$

where $\Delta u \equiv \overline{u} - \underline{u}$ denotes the benefit from having a child choose the parent's preferred action.[7] The problem (4) has a unique solution given by the first order condition (FOC),

$$H'(\tau^a) = (1-q_t)\Delta u \ . \tag{5}$$

The FOC (5) has a simple economic interpretation. The left-hand side is the marginal cost of extra parent-socialization, while the right-hand side is the marginal expected benefit. To see this, notice from the second line of (4) that at the margin, an incremental increase in parent socialization makes a child who would have been obliquely socialized by society to have morality b, which happens with probability $(1-q_t)$, obtain morality a and choose a over b, yielding a benefit of Δu.

[7] Bisin and Verdier (2001) refer to Δu as "cultural intolerance." We refrain from using this term.

In a similar way, the FOC of a parent with morality b is,

$$H'(\tau^b) = q_t \Delta u \ . \tag{6}$$

As the FOCs show, the incentives of a parent of type m to socialize their child decreases with the proportion of parents who have the same morality. (Bisin and Verdier (2001) refer to this property as "cultural substitution".) This follows simply from the fact that oblique socialization substitutes for parental (vertical) socialization. This in turn implies that if both moralities are represented in society then as one group becomes smaller, the intensity of vertical socialization increases, causing that morality to become more prevalent. This observation, together with the transition function in (2) implies that there will be an interior steady state equilibrium (SSE) q^* in which the size of each morality group remains constant.

More precisely, since a SSE is characterized by $q_t = q_{t+1} \equiv q^*$, the transition function in (2) implies that in a SSE,

$$q_t(1 - q_t)(\tau^a - \tau^b) = 0, \tag{7}$$

which can be satisfied in one of three ways. Two are the extreme SSE where there is a homogenous society with one morality, a (where $q^* = 1$) or b (where $q^* = 0$), no parent chooses to socialize their child, and all socialization is oblique. The third is a unique interior SSE with a heterogeneous population, in which (7) must be satisfied by setting $\tau^a = \tau^b$ so that the two morally distinct groups invest the same amount of socialization. (As Bisin and Verdier show, the interior SSE is also the globally table equilibrium.) This, together with the two FOC's (5) and (6), generates the unique interior SSE. Namely,

Lemma 1: There is a unique interior SSE in which $q^* = \frac{1}{2}$ and $H'(\tau^a) = H'(\tau^b) = \frac{\Delta u}{2}$ resulting in $\tau^a = \tau^b = \tau^*$.

The conclusion above mirror's Proposition 1 in Bisin and Verdier (2001) and is depicted in Figure 1. The three SSEs are at 0, at q^* and at 1. If the population is at some $q_t = q' < q^*$ then the a parents socialize more vigorously than the b parents who enjoy the effects of a large group, and as a result $q_{t+1}(q') > q'$, and over time the population converges to q^* from below. The reverse happens if $q_t = q'' > q^*$. The fact that $q^* = \frac{1}{2}$ comes from our simplifying symmetry assumption that $u_a^a - u_b^a = u_b^b - u_a^b = \Delta u$ but qualitatively the result is general.[8]

2.2 Coercive Change: The Role of Penalties

In what follows, we extend the simple framework outlined above to include a ruler who wishes to change the composition of society. In particular, the ruler wishes to eradicate morality a from

[8] With asymmetric preferences Lemma 1 would be restated as $q^* = \frac{u_a^a - u_b^a}{u_a^a - u_b^a + u_b^b - u_a^b}$ and $H'(\tau^a) = H'(\tau^b) = \frac{(u_a^a - u_b^a)(u_b^b - u_a^b)}{u_a^a - u_b^a + u_b^b - u_a^b}$.

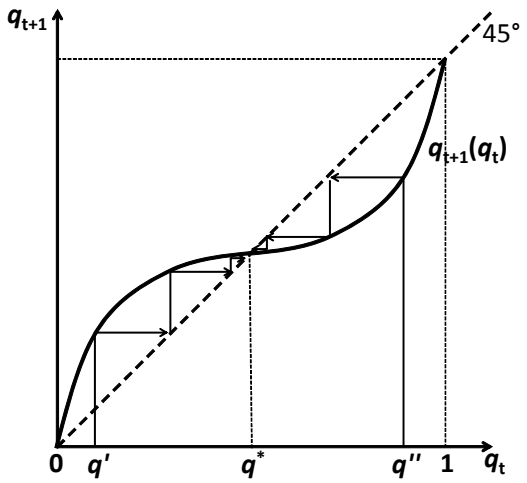

Figure 1: Equilibrium Population Dynamics and SSE

the population, or at least to reduce it sufficiently, so we can think of the ruler's preferences being decreasing in q_t in any given period t.

We first consider the role of penalties imposed by the ruler that are aimed at discouraging morality a. We assume that the ruler, and the institutions representing him, cannot directly observe a person's morality. Hence, the penalty can only be imposed on the choice of action a, which reveals a person with morality a.

Let π denote the penalty imposed as measured in utility. Clearly, if $\pi > \Delta u$ then a child of type a will choose b over a given the large penalty. Since parents have imperfect-empathy preferences over the choices made by their children, a parent of type a will choose not to socialize its child. As a result, starting from any $q_t \in (0,1)$, population dynamics will evolve towards $\lim_{t\to\infty} q_t = 0$. Also note that no penalties will occur on the equilibrium path.

If, however, the ruler is limited by the extent to which he can penalize people, say by some highest penalty $\overline{\pi} < \Delta u$, then a-type children will choose a over b because $\overline{u} - \pi > \underline{u}$, and parents still benefit from socializing their children. However, the benefits from socialization of a-type parents are smaller, as their objective function now becomes,

$$U^a = [\tau^a + (1-\tau^a)q_t](\overline{u} - \pi) + (1-\tau^a)(1-q_t)\underline{u} - H(\tau^a)$$

which has a unique solution given by the FOC,

$$H'(\tau^a) = (1-q_t)(\Delta u - \pi)\ , \tag{8}$$

and in a similar way the FOC of a b-type parent is,

$$H'(\tau^b) = q_t(\Delta u + \pi)) \ . \tag{9}$$

This changes the new SSE to which the population will converge as follows:

Proposition 1: Given a penalty $\pi < \Delta u$, the unique interior SSE is characterized by (8), (9) and by $q^\pi = \frac{\Delta u - \pi}{2\Delta u} < q^*$, and $H'(\tau^a) = H'(\tau^b) = \frac{(\Delta u)^2 - \pi^2}{2\Delta u}$ resulting in $\tau^a = \tau^b < \tau^*$. Furthermore, q^π is decreasing in the penalty π and for any fixed π, q^π approaches q^* as $\Delta u \to \infty$.

The intuition for Proposition 1 is simple: a penalty reduces the benefit of choosing action a, which in turn reduces the return from having a child with morality a. This makes socialization less attractive for a-type parents and more attractive for b-type parents, implying that the SSE with a penalty must have less a-types than the SSE without a penalty. Furthermore, the SSE level q^π decreases in π because higher penalties make a socialization less attractive. Last, as Δu increases, the effect of any fixed penalty decreases, and at the limit the penalty becomes ineffective.

Two issues are worth discussing further. First, if society starts at the original SSE then imposing a penalty $\pi < \Delta u$ starting at some date causes an immediate drop in socialization to morality a, and an increase in socialization to morality b. However, heterogeneity will be preserved and a-types will persist, but society converges to a smaller fraction with morality a. As such, penalties move society towards a more desirable outcome for the ruler.

Second, we have ignored the cost-side of imposing penalties. The reason for this is that there can be both costs and benefits to institutions that impose penalties. If, for example, the penalties include expropriation of wealth and assets, these may cover some or all of the costs of institutionalizing penalties. As such, it is not clear how attractive penalties may be. In section 2.6 we discuss some of the costs of imposing penalties that have more precise empirical implications.

2.3 Directed Change: The role of Schooling

Imposing penalties on the undesirable behavior is only one way in which the ruler can change behavior, and ultimately morality. Another way would be to try and directly intervene in the socialization process. A common way to do this is to introduce centralized schooling which is aimed at socializing children to the desired b morality, thus directly affecting their preferences.

In the setup of our model schooling can be thought of as tilting the process of oblique socialization in favor of b morality above and beyond the current proportion of the population that is of b morality. Formally, let $\sigma \in [0, 1]$ denote the effectiveness of school indoctrination. The probability that a child who was *not socialized* by his parent adopts the a morality in period t is now $(1 - \sigma)q_t$ (and it is $1 - (1 - \sigma)q_t$ for the b morality). That is, the more effective school indoctrination is (higher σ), the less likely it is that oblique socialization will result in a morality.

For simplicity, we take an extreme version of this idea and assume that if parental (vertical) socialization fails, which happens with probability $1 - \tau^m$ for morality m, then the child is socialized to the b morality with probability 1. That is, we are setting $\sigma = 1$ so that schooling perfectly indoctrinates those who were not socialized by their parent.[9] This trivially changes the transition probabilities defined in (1) above as follows: $P^{aa} = \tau^a$, $P^{ab} = 1 - \tau^a$, $P^{bb} = 1$ and $P^{ba} = 0$. Also, the transition dynamics equation becomes

$$q_{t+1} = \tau^a q_t. \tag{10}$$

Turning to the objective of a parent with morality a, he maximizes,

$$U^a = \tau^a \overline{u} + (1 - \tau^a)\underline{u} - H(\tau^a)$$

which has a unique solution given by the FOC,

$$H'(\tau^a) = \Delta u \ . \tag{11}$$

We then have,

Proposition 2: If schooling is implemented starting in some period t then there is a discontinuous increase in τ^a, which then stays fixed over time, while $\tau^b = 0$ thereafter. Furthermore, the proportion of a morality types slowly shrinks with $\lim_{t\to\infty} q_t = 0$.

In the case of perfectly effective schooling, the FOC in (11) is independent of q_t, and it is easy to see that the marginal benefit of parent socialization is higher since there is no oblique socialization to a morality. For this reason the endogenous response of parents to schooling is to *increase* the level of parental socialization τ^a. This acts as an initial damper on the effectiveness of education, which is contrary to a penalty where parental socialization drops as a response to a penalty.

2.4 Crypto-morality and Moral Persistence

As we discuss in the introduction, coercive penalties on actions may induce crypto-morality, defined as the secret adherence to one morality while practicing another in public. This incorporates the idea that in private, which naturally includes the confines of one's family, a person can share his beliefs and act upon them. If, however, public display of these beliefs and corresponding actions that reveal them will result in penalties, then a person will act differently in public to avoid the penalty.

In the setup of our model this can be interpreted as introducing a third action c, which corresponds to choosing b in public settings while choosing a in private. Naturally, we assume

[9] Lower levels of $\sigma > 0$ will result in similar qualitative results in the spirit of Proposition 2, but the proportion of a morality types will not go to zero as stated in the proposition.

that for moral types m, the utility from choosing c satisfies $u_m^m > u_c^m > u_n^m$, $m, n \in \{a, b\}$ $m \neq n$. In particular, we assume that for some $\phi \in [0, 1]$, $u_c^a = \phi\overline{u} + (1-\phi)\underline{u}$ and $u_c^b = (1-\phi)\overline{u} + \phi\underline{u}$. This asymmetry between a and b moralities vis-a-vis action c allows us to interpret ϕ as the importance of private actions. Namely, as $\phi \to 1$, action a that is done in private when c is chosen receives more weight. We say that private actions become more important as $\phi \to 1$.

Of course, no b-type person will choose a in private or in public, implying that every b-type continues to choose b. Define $\pi^c \equiv \overline{u} - u_c^a = \Delta u(1-\phi) \geq 0$, as the minimum penalty needed to induce an a-type to choose c instead of a. Assume that $\pi^c < \overline{\pi} < \Delta u$, and recall that $\overline{\pi}$ is the highest penalty available to the ruler. This implies that for penalties $\pi \in (\pi^c, \overline{\pi}]$ an a-type will choose c, but for lower penalties he will choose a. We thus have,

Corollary 1: If the penalty is small satisfying $\pi \leq \pi^c$ then the unique interior SSE following the penalty is characterized by Proposition 1.

This follows immediately from the fact that with a penalty $\pi \leq \pi^c$ the a-types will continue to choose a always and crypto-morality will not emerge. With higher penalties $\pi \in (\pi^c, \overline{\pi}]$, however, a-types will choose c because $u_c^a > \overline{u} - \pi > \underline{u}$. The objective function of an a-type parent now becomes,

$$\begin{aligned} U^a &= [\tau^a + (1-\tau^a)q_t]u_c^a + (1-\tau^a)(1-q_t)\underline{u} - H(\tau^a) \\ &= \underline{u} + \phi q_t \Delta u + \phi\tau^a - \phi\tau^a(1-q_t)\Delta u \ . \end{aligned} \tag{12}$$

Note that a parent's utility is defined over the *actions* that a child takes and not the child's *morality*. In our setting, however, actions are based on morality, and as such, a child's morality indirectly affects its parent's utility. For this reason there is no need to introduce a direct preference over a child's morality, and doing so will be redundant. The parent's objective function has a unique solution given by the FOC,

$$H'(\tau^a) = \phi(1-q_t)\Delta u \ , \tag{13}$$

and in a similar way the FOC of a b-type parent is,

$$H'(\tau^b) = \phi q_t \Delta u \ . \tag{14}$$

This changes the new SSE to which the population will converge as follows:

Proposition 3: If the penalty is not small and satisfies $\pi \in (\pi^c, \overline{\pi}]$ then the unique interior SSE is characterized by $q^c = q^* = \frac{1}{2}$. Furthermore, $H'(\tau^a) = H'(\tau^b) = \phi\frac{\Delta u}{2}$ resulting in $\tau^a = \tau^b < \tau^*$, and as $\phi \to 1$ both converge to τ^*.

This stark result suggests that if the penalty is high enough to cause crypto-morality then the SSE proportion of a-types will remain the same as with no punishments and at the same time both a and b morality parents will socialize their children less than in the benchmark case

with no penalties. The intuition for the lower level of parental socialization is that having the option of crypto-morality makes oblique socialization to the other morality less severe for both types. The reason that $q^c = q^*$ follows from the fact that this effect is the same for both types, so the drop in parental socialization for both types is a wash. The fact that $q^c = q^*$ rests on our specification of u_c^m as described above where the importance of private actions is symmetric. However, a more general treatment shows that q^c can be either smaller or larger than q^*, the benchmark SSE.[10]

The upshot of Corollary 1 and Proposition 3 is that if crypto-morality is possible, then penalties have a non-monotonic effect. Small penalties will slightly reduce the prevalence of morality a, but imposing penalties that are high enough to discourage the choice of a may not at all reduce the prevalence of a morality. Furthermore, if crypto-morality is adopted then once the penalty is removed, action a is immediately picked up by the population. This differs from the case of penalties without crypto-morality where a penalty causes the prevalence of action a to drop, and after the penalty is removed it takes time for the population to get back to the benchmark SSE q^*.

2.5 Crypto-morality and Imperfect Exposure

In the previous section we argued that crypto-morality will undermine a ruler's ability to eradicate, or even decrease the prevalence of morality a. In this section we introduce the notion of imperfect exposure of individuals who choose action c. In particular, assume that if a person chooses action c then with some probability $e \in (0,1)$ he is exposed as following crypto-morality (e.g., through a network of informants.) Once exposed the penalty π is imposed on the individual. Hence, section 2.2 above is the special case where $e = 1$ and section 2.4 studies the case of $e = 0$.

In this setup choosing a imposes the penalty π for sure, while choosing c imposes the penalty with probability $e < 1$. Hence, an a morality individual will be indifferent between a and c if and only if,

$$\overline{u} - \pi = \phi\overline{u} + (1-\phi)\underline{u} - e\pi \ .$$

Simple algebra shows that this is satisfied for a penalty $\pi^e = \frac{\Delta u(1-\phi)}{1-e} = \frac{\pi^c}{1-e} > \pi^c$. That is, if $\pi < \pi^e$ then an a morality individual chooses a, while if $\pi > \pi^e$ then an a morality individual chooses c. However, unlike the case of $e = 0$, crypto-morality comes with a positive expected penalty, $e\pi$, and as a consequence we have,

Proposition 4: If the penalty is small satisfying $\pi \leq \pi^e$ then the unique interior SSE following the penalty is characterized by Proposition 1. If the penalty is not small and satisfies

[10] For example, if in a linear specification as above the importance of private actions is asymmetric with $\phi_a \neq \phi_b$, then $q^c \gtrless q^*$ if and only if $\phi_a \lesseqgtr \phi_b$. The linear specification is without loss since there are only two actions a and b so u_c^m is always a convex combination of u_a^m and u_b^m.

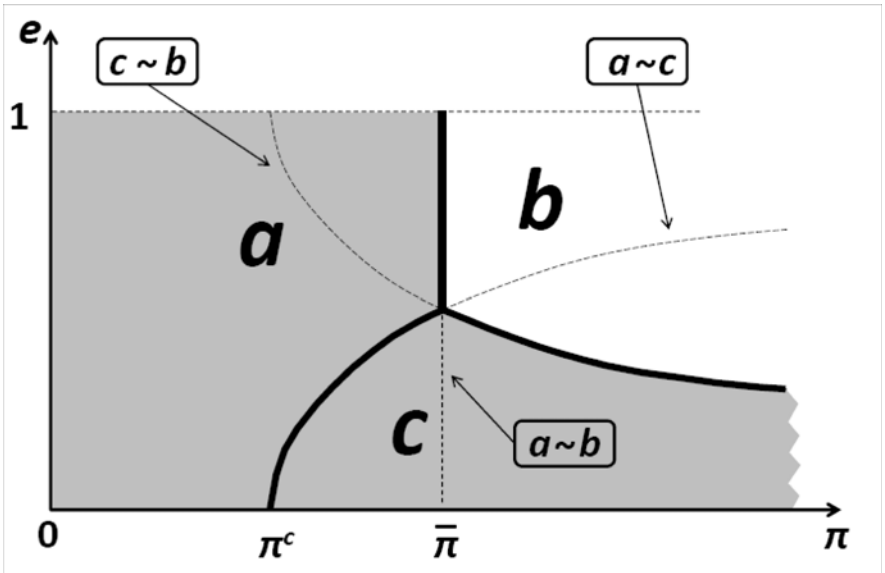

Figure 2: The Best Response of a-types

$\pi \in (\pi^e, \overline{\pi}]$ then the unique interior SSE is characterized by $q^e = \frac{\Delta u - e\pi}{2\Delta u} = eq^\pi + (1-e)q^*$. Furthermore, $H'(\tau^a) = H'(\tau^b) = \phi\frac{(\Delta u - e\pi)(\Delta u + e\pi)}{2\Delta u}$ resulting in $\tau^a = \tau^b < \tau^*$.

Not surprisingly, when crypto-morality is practiced and there is some positive probability of exposure then the analysis results in a SSE that lies between q^* and q^π, where as exposure increases from 0 to 1 the SSE proportion of a morality individuals drops from q^* to q^π.

The ruler's coercive institution can described by two parameters: π and e. The behavior of individuals will be a function of these two parameters, and the equilibrium behavior is depicted in Figure 2. The three dashed lines represent indifferent lines in the (π, e) space. First, when $\pi < \overline{\pi}$ then a is preferred to b and vice versa, so that the line $a \sim b$ shows where there is indifference. To the left of the line labeled $a \sim c$, a is preferred to c and the opposite occurs to the left (this line is derived from (**??**) above). Similarly, to the left of the line labeled $c \sim b$, c is preferred to b and the opposite occurs to the left (this line is derived from $\phi\overline{u} + (1-\phi)\underline{u} - e\pi = \underline{u}$). Hence, the heavy lines delineate the regions where the action chosen is a, b or c. The gray region includes all values of (π, e) for which an a parent socializes his child in the same way, while the remaining blank shows the values for which a complete moral transition occurs, in which no a parents socialize their children.

2.6 Extensions and Implications of the Model

The model of socialization that we use can be extended in several ways to account for a more rich and refined set of observations.

Heterogeneous values: We assumed above that $\overline{u}$ and $\underline{u}$ were the same for all individuals, implying that the strength of individual moralities is identical across people. Imagine instead that there is heterogeneity in that some people have "stronger" convictions than others. A simple way to model this would be to fix $\underline{u}$ while allowing $\overline{u}$ to be distributed on some interval $[u_L, u_H]$ with some distribution $F(\cdot)$. A parent's objective function is the same as described in the various sections above, but now Δu, the main component in the marginal benefit of socialization, varies across individuals. It is easy to see that parents with stronger convictions, measured by higher values of Δu, will invest more in socialization, and will require a higher penalty to abandon their morel choice. As a consequence, different people will respond differently to penalties. For example, a increase in penalties will cause some people to stick to their moral choices while others will adopt crypto-morality, and a third group will switch moralities altogether. Hence, a drop in penalties will not easily restore the population to its previous condition.

Cryptomorality Decay: In our analysis of crypto-morality in sections 2.4 and 2.5 we used the transition dynamics described in equation (2). This basically assumes that when crypto-morality is practiced, then a child who was not socialized by their parent will be socialized to a morality with a probability equal to the proportion of the population with a morality, even if they do not choose a in public. Arguably, this assumption is not realistic since a types who choose crypto-morality behave like b types, implying that oblique socialization should be tilted towards b morality, similarly to the case of schooling. This implies that decay in a socialization may in the long run lead to the slow disappearance of a morality.

Endogenous Costs of Exposure: In the analysis above we ignored the ruler's cost of implementing either penalties or schooling. Clearly, a large state-run education institution will have costs, yet if education also adds some skills above and beyond indoctrination, there are returns as well to economic growth. Similarly, imposing penalties has costs and benefits since the enforcing institutions can confiscate the wealth of those individuals who are penalized and use that to fund some or all of the activities. However, there is a cost to penalties that is endogenous to socialization that arises from the existence of crypto-morality. For example, there may be some probability μ of falsely accusing a b-type of being an a type who practices crypto-morality. We would expect that both the intensity of true exposure e and of false accusations μ will depend on the institutions used by the ruler. It is reasonable to expect that more vigorous persecutions will result in higher values of e, making crypto-morality more detectable. If, however, we also assume that more vigorous persecution will result in more false accusations and convictions (higher values of μ) then an endogenous cost of using coercive penalties arises. In particular, as a moral transition transpires, and the proportion of a-types drops, then the endogenous costs of coercive penalties rises due to an increase in the relative likelihood of false accusations. If this is indeed a cost of persecution then at some point, even if the ruler believes that some a-types are still present, the level

of persecution would decrease due to the costs of false accusations. In fact, the coercive institution may be abolished altogether in favor of other mechanisms such as schooling.

3 Crypto-morality and Political Legitimacy

This section illustrates the importance of crypto-morality in moral persistence by discussing political legitimacy. We define political legitimacy of a political authority – a ruler or a political elite – as the extent to which people feel morally obliged to follow the authority (Greif 2001). Political legitimacy is valuable because, as Max Weber has noted, it increases the likelihood of staying in power, ceteris paribus.[11]

When a new political authority comes to power, it can benefit from instituting new moral standards of political legitimacy. Even if, for example, military dictatorship is legitimate, the current dictator prefers that he would be considered the only morally accepted ruler. Similarly, a democratically elected president prefers that his party's ideology would become the only morally accepted one. Using the terms of our model, if a new political authority prefers b to a then its political legitimacy is higher if the proportion of individuals of morality b is higher.

The Spanish inquisition (1478-1834) is perhaps the best known case in which force was systematically used, over a long period of time, to alter morality. Although it operated against religious heresy, it was also a means for nation-building by the Spanish monarchy. Its history illustrates the importance of crypto-morality. In particular, it illustrates that despite its slow decay in a hostile institutional environment, forbidden morality can last for centuries.

The decline of the Inquisition in the 19th century transpired when indoctrination, rather than force, became more effective in moral transitions. Since then, indoctrination was indeed used by newly created Republics to foster their legitimacy. We thus consider the educational reforms in the French and Turkish Republics and demonstrate that the outcomes of these reforms are consistent with our analysis. In particular, that increase in parental socialization can counter oblique socialization. Finally, we present evidence for the persistence of the moral basis of political legitimacy in China and the Middle East. These cases illustrate that the high cost of detecting and eradicating crypto-morality induced rulers to conform to the prevailing legitimacy norms.

3.1 The Spanish Inquisition

Pre-modern Christian rulers in the Iberian peninsula faced the challenge of consolidating control over areas that were under Muslim rule since the 8th century. They responded to this challenge by promoting religious uniformity. Although, in general, the papacy in pre-modern Catholic Europe had adjudication over heresy, the Spanish monarchy gained Papal approval to have this authority

[11] Legitimacy is hardly discussed in contemporary political science and political economy. For example, the term 'legitimacy' has only six index entries and very little discussion in the New Handbook of Political Science (Goodin and Klingemann 1996). For some recent analyses, see Levi 1997; Gilley 2006, Zhao 2009; Greif 2010.

in 1478.[12] The monarchy created the infamous Spanish Inquisition to promote Catholicism for the benefit of the Church and the consolidation of a Catholic state.[13] The Inquisition lasted until 1834, particularly due to its political role in a state that initially had large Muslim and Jewish populations. During that time, the Inquisition grew to be a very powerful organization. From 1540 to 1700 alone it accused more than 44,000 individuals of heresy, punished most of them, and sentenced over 800 to death (Rawlings 2006, p. 13). Throughout its history, it may have convicted more than 290,000 individuals and condemned more than 31,000 to burn on the stake (in addition to more than 17,000 who were burned in effigy (Roth 1996, p. 123)).

An initial objective of the Inquisition was to eliminate crypto-Judaism among the "New Christians". This group was composed mainly of Jews who converted to Christianity after 1391 when hundreds of Jews were killed in anti-Jewish riots. Many Jews were forced to convert while others preempted attacks by converting voluntarily. Overall, about 50 percent of the Jewish population of 200,000 had converted to Christianity by the early 15th century. In terms of our model, the credible threat of a high penalty induced behavior consistent with conversion, however, indistinguishable from crypto-Judaism. The Inquisition was to verify that these conversions were real.

Our analysis (proposition 3) suggests that crypto-morality is more likely to occur if there are significant net gains from behaving as a Christian in public, yet the probability of detecting crypto-Judaism is low. These conditions indeed prevailed prior to 1478 in the two Spanish kingdoms that later became the Spain. Aragon had a Papal Inquisition and in Castile members of the episcopate were charged with surveillance of the faithful and punishing heresy. Both organizations could inflict heavy penalties but lacked the organizational capacity to detect hidden transgressions. Moreover, Jews were institutionally discriminated against and were forbidden from governmental positions (and, naturally, positions in the Church).

Indeed, crypto-Judaism was widely practiced. Even when those Jews who had been forced to convert in 1391 were allowed to return to Judaism, many refused (e.g., Roth 1992). Crypto-Judaism might have been facilitated in this historical episode by developments in Jewish theology. In response to attacks on Jews in various European countries, this theological development balanced two principles. The principle of *Kiddush Hashem* ("sanctification of the name [of God]") calls for a Jew to sacrifice his life rather than desecrate God. The principle of *Pikuach Nefesh* ("saving of human life") asserts that the duty of saving life overrides any other religious consideration.[14] Maimonides, the prominent 12th century Jewish-Spanish scholar, concluded that if

[12] We use the term Spain for ease of presentation although for much of this period it was a union of two kingdoms, Castile and Aragon. The discussion here is based mainly on Kamen 1997, Rawlings 2006, and Cecil 1975, 1996.

[13] The Inquisition increased the power of the Catholic clergy but not at the expense of the state (although it became an influential organization within it). In Spain the Inquisition "was responsible to the Crown rather than the Pope and was used to consolidate state interest" (Rawlings 2006, p. 1). More generally, "the papacy was forced to grant the [Spanish] monarchs the power to nominate church officials and administer church benefices and to provide them with financial contributions" (Gorski 2000, p. 157).

[14] With the exceptions of the three cardinal sins of defaming god's name, murder, and forbidden sexual relationships.

one transgressed on the principle of sanctification then he is exempt from punishment if this was done under duress and escape was not an option. Similarly favorable to crypto-Judaism is the importance of private actions (ϕ close to 1) in practicing the faith. Praying, for example, can be done anywhere and can be led by any individual.

Whether the authorities were aware of crypto-Judaism is unclear. In any case, they did not acknowledge the practice prior to 1477 when the Queen received credible evidence to this effect. The following year the Pope permitted the Spanish king to create an Inquisition controlled by the state rather then the papacy.[15] The permission was given under the threat of withdrawing Spanish military support of the papacy. Among the evidence suggesting that the Inquisition served an important political role is that in 1484 the Pope allowed appeals to Rome against the Inquisition. The Spanish king refused to give up on his authority and decreed death and wealth confiscation for anyone appealing without royal permission. Subsequently the Inquisition became the only judicial authority operating throughout Spain and was a useful mechanism at the service of the crown.

The Inquisition was created in 1478 and the first executions took place in 1481 when six people were burned at the stake. By 1492, tribunals operated in six cities. Detection of crypto-Judaism by the Inquisition was facilitated by the concentration of the previously Jewish population in mixed cities. The Inquisition solicited evidence from Old Christians under the threat of excommunication and trial for heresy. Inquiries were initiated based on testimonies concerning daily activities associated with Judaism such as washing hands "too much," replacing sheets on Friday, or declining a pork dish.

An implication of our theoretical analysis is that when agents are heterogenous (section 2.6), such an increase in the expected penalty should have two consequences. On one hand, some of those practicing crypto-Judaism will convert Catholicism, while on the other hand, some of them will return to Judaism. Intuitively, the higher expected punishment of crypto-Judaism rendered it less attractive relative to the original faith. Indeed, some evidence suggests that there were returns of crypto-Jews to their original faith. Interestingly, some Christians were so impressed by the self-sacrifice of crypto-Jews that they too converted to Judaism.

This suggests that oblique socialization to Judaism hindered the ability of the Inquisition to eliminate crypto-Judaism. Indeed, the Inquisition sought to eliminate the Spanish Jewish community altogether. This was, however, a costly proposition for the monarchy because the Jewish community's economic and other resources contributed to its fight against Muslim Granada. However, once this last Muslim kingdom was defeated in 1492, the monarchy ordered the Jews to either convert to Christianity or leave. Most have left.

The Inquisition intensively pursued any suspicion of crypto-Judaism and by 1530 it had already executed about 2,000 and imposed lesser penalties on perhaps as many as 15,000 others (Rawlings 2006, p. 15). After 1520, the number of trials for crypto-Judaism declined substantially

[15] An inquisition was created in Castile and Aragon at different times. We ignore such subtleties to simplify the discussion.

suggesting the impact of this brutal campaign on moral transition. The implied limits on Jewish behavior seems to have led crypto-Jews to lose knowledge of how to practice their faith. It turns out, however, that learning about the accusations leveled against those convicted of crypto-Judaism was a means to regain this knowledge. Indeed, the Inquisition failed to bring a quick end to crypto-Judaism and accusations continued for centuries. Between 1721 and 1725, for example, about 900 people were charged and executed (Rawlings 2006, p. 71) and the last execution took place in 1818 when Manuel Santiago Vivar was accused in Cordoba of keeping the Jewish faith while being nominally a Christian. Consistent with our analysis, it seems that secrecy and intense socialization let crypto-Jewish families persist for more than 300 years, after which their share in the population was close to zero.

The methods used by the Inquisition gradually evolved in a manner consistent with our analysis of the challenge that crypto-morality presents with respect to false accusations of people following the desired morality (section 2.6). The penalty imposed by the Inquisition was very high; painful death and confiscation of wealth following years of imprisonment without any contact with the outside world. One was not entitled to a lawyer or to learning about who testified against him. Torture was legally used to extract confessions. Punishments were inflicted in public spectacles and announced ahead of time to attract attendance and foster deterrence. Moreover, after 1550 the Inquisition had direct financial interest in extracting confessions. Previously, the wealth confiscated from those who were convicted went to the royal treasury and the Inquisition was financed by the state. By the mid 16th century, financing the Inquisition became unprofitable and the Crown demanded that it would become self-sufficient. Subsequently, the Inquisition kept the wealth confiscated from those it had convicted.

Harsh punishment, however, would be counter-productive unless detection probability (e) is sufficiently high, and the probability of false detection (μ) is sufficiently low. Yet, whether people believed in Judaism was not directly observed. Finding out what people privately practiced required relying on witnesses and providing them with the necessary incentives. Revealing the witnesses' identity or questioning their motives would have invited retaliations against the witnesses and would undermine the flow of information. Keeping their identity secret, however, encouraged false accusations. Initially, the Inquisition failed to resolve the challenge of obtaining sufficiently accurate information. In early 16th century Cordoba, for example, 107 individuals were burned alive on the charge of having been exposed to an address made by one accused of promoting Judaism . Accusations were levied against prominent Christian figures such as the Archbishop of Granada (Roth 1996, pp. 60-1).

The failure to obtain accurate information fostered political opposition against the Inquisition. The New Christians appealed to the Pope and cities complained to the king that the Inquisition infringed on their traditional legal rights. In 1518, when the king Charles V first arrived to Spain he was approached by the Cortes (the representative body) and the New Christians to restrict the Inquisition. The latter group was particularly interested in abolishing the system of secret accusations. Both groups also approached the Pope who was willing to grant these concessions.

Charles V, nevertheless, refused to limit the Inquisition arguably because he was "convinced... of the great political utility of the [Inquisition's] Tribunals" (Ibid, p. 63).

At the same time, the Inquisition created the organizational capacity and procedures to reduce the probability of false accusations. Upon arrest one was asked to provide a list of "enemies" who might advance false accusations. If the secret accuser was named as an enemy, the testimony was invalidated and the accuser's conduct was investigated. Torture was allowed only once (although "breaks" could have been taken) and one who confessed under pressure had to also confess while not under threat (reducing both true and false accusation probabilities).

Perhaps most importantly, the Inquisition developed a sophisticated system of collecting and organizing information and often labored years to gather sufficient evidence prior to making an arrest (e.g., Rawlings 2006, pp. 30-6). Gathering incriminating evidence became harder to obtain as crypto-Judaism declined over time, and those practicing it became more secretive. The Inquisition then resorted to using Jewish ancestry as indicating guilt, thus reducing the likelihood of persecuting people with no Jewish heritage (reducing μ). This racial discrimination might have alleviated the Old Christians' fear of false accusation but reduced incentives to sincerely convert.

The histories of the Jews in Portugal and the Muslims in Spain similarly reveal the contribution of crypto-morality to moral persistence. Specifically, these histories reveal that the effectiveness of crypto-morality depends on the intensity of preferences (section 2.6) and on the probability of detection (proposition 4) respectively. As discussed above, Spaniard Jews who refused to convert were allowed to emigrate. This, however, was not the case in Portugal where, in 1497, every Jew was declared Christian.[16] Moreover, this Jewish community included many of the Spanish Jews who refused to accept Catholicism in 1492 and emigrated to Portugal. Our analysis suggests that the stronger commitment to Judaism (higher value of $u_a^a - u_b^a$) among the Portuguese New Christians would slow their moral transition.

Indeed, crypto-Judaism in Portugal survived to the twentieth century, although an Inquisition was active since 1540. Moreover, thousands of New Christians emigrated to Amsterdam, the Ottoman Empire, and other places in which they were permitted to openly return to Judaism. Yet, crypto-Judaism was practiced in Portugal to the present. In the city of Belmonte about 300 crypto-Jews returned to publicly practice their faith since the1970s.

Similarly, the persistence of crypto-Islam among the previously Spanish Muslim population is consistent with our claim that crypto-morality is slow to decay when detection is difficult and oblique socialization to the other morality is weak. In the early 17th century the Spanish Muslim population of about 600,000 were forced to convert to Christianity. These *moriscos* lived in separate communities mainly in Valencia (in the east) and Granada (in the south) It

[16] In 1496, the Portuguese king mandated that every Jew who did not convert should leave the country in ships he would provide. The king's objective seems to have been to induce conversion thereby keeping the valuable Jewish community while satisfying a pre-condition to marrying the heiress of the future united crown of Spain. Among the means used by the king was torture and capturing and baptizing Jewish children. Most Jews, however, refused to convert but when arrived to be deported at the port in Lisbon in 1497, they were baptized without their consent and declared Christians. See, e.g., Roth 1996.

is reasonable that the *moriscos*' isolation and concentration reduced the detection probability, fostered oblique socialization to crypto-Islam, and substantially reduced oblique socialization to Christianity. Moreover, the *moriscos* had a higher reproduction rate. Population growth rate was 70 percent between 1565 and 1609 compared to 35 percent among the Old Christians in the same regions (Rawlings 2006, p. 81). The theory of socialization that we adopt from Bisin and Verdier (2001) indeed predicts a higher reproduction rate by cultural minority groups. The Inquisition seems to have recognized that these factors undermined its ability to induce a moral transition. It advocated eliminating the *moriscos* and rumors of their alleged support to a Turkish invasion of Spain added weight to this proposal. In 1609 king Philip III ordered the *moriscos* to leave Spain and by 1614 their emigration was completed.

The Inquisition's mixed record in influencing the morality of the Spanish Christian population similarly reveals the importance of crypto-morality in moral persistence. Christians constituted the single largest group among those brought to trial by the Inquisition although punishments were generally lighter. Between 1540 and 1700 about 30,000 people were accused of major or minor heresies that had nothing to do with Judaism or Islam. The most common major heresy was Protestantism (particularly Lutheranism) and the most common minor heresies were outbursts against the faith, bigamy, and sexual misconduct by priests in the intimacy of the confession. The Inquisition succeeded in influencing morality among Christians only with respect to heresies in which the detection probability was relatively high.

Suspects in the major heresy of Protestantism were easy to detect because the movement originated outside Spain. The Inquisition suspected any Spanish scholars who visited Protestant countries and everyone who came from them. Protestantism, indeed did not establish itself in Spain. The Inquisition seems to have been able to similarly eradicate the minor heresies whose number (which we can measure only by accusations) declined dramatically after 1615.[17]

Upon close inspection, however, the Inquisition's success was mixed at best. It had difficulty in verifying ignorance of the Catholic faith or detecting sex among unmarried individuals. To verify ignorance, the Inquisition relied on signals of religious beliefs such as knowledge of the prayers (1565), history of church attendance (1570) and knowledge of the Ten Commandments (1574). Indeed, the number of defendants who could recite the four main prayers (Pater, Ave, Credo, and Salve) increased from 37 percent (prior to 1550) to 82 percent (1600-50). Yet, these signals can be easily jammed and it is difficult to know whether this increase in knowledge was associated with a moral transition. Indeed, in 1570 the Bishop of Mallorca did not complain about Church attendance but instead that his parishioners were late attending Masses, paid little attention, and left early (Rawlings 2006, pp. 115-6). More generally "we might further question the extent to which... the Inquisition actually... change[d] attitudes and behavioral practices that had prevailed over centuries" among Old Christians (ibid, p. 120). This outcome is consistent with our analysis that high initial prevalence of a moral trait and low probability of

[17] The average annual number of heresies cases of this nature declined from about 516 (1560 to 1614) to about 170 (1615-1700). (Rawlings 2006, p. 115).

detection facilitate its perpetuation in hostile institutional environment.

Ineffectiveness in inducing morality was indeed one of the arguments advanced by the opponents of the Inquisition by the late 18th century. The argument was that secularism was now challenging the faith. The Church had to win unbelievers rather than correct those who have wrong religious beliefs. Detecting the lack of beliefs, rather than identifying those practicing a different religion was beyond the Inquisition's ability. In this context, discrimination against Spaniards of Jewish ancestry was particularly counter-productive. It punished those who adopted the Catholic faith rather those who rejected it. The Catholic church had to convince the unbelievers. Indeed, by 1834 the Inquisition was terminated and the Jesuit Order that is dedicated to evangelization through education took the lead in gaining believers.

3.2 Schooling: Republican morality in France and Turkey

In Europe and the Middle East, religious authorities had traditionally controlled the education system and used it to socialize the next generation to accept the moral superiority of their norms. In particular, the education system had been used to legitimize the existing political orders. In Europe, for example, the Christian denomination affiliated with a state, such as Catholicism in France and Anglicanism in England, also controlled the education system. When secular forces gained political power on the eve of the modern period, they sought to similarly use the educational system to foster the morality they adhered to. Secular states took control of the education system and students were then socialized to the moral superiority of their underpinning principles such as freedom of expression, universal franchise, and majority rule.

Indeed, after the French Revolution, for example, the revolutionaries established teachers' training schools with the explicit objective of advancing "republican morality" in contrast to the traditional morality advocated in the previously Catholic schooling system. Napoleon has noted that "of all our institutions public education is the most important.... it is essential [for] ... the morals and political ideas of the generation which is now growing up" (Molé 1923, p. 61). During the 1880s, Jules Ferry, the Minister of Public Instruction finalized the creation of France's Republican school system which still maintains a separation between the state and the Church.

Mustafa Kemal Atatürk, the founding father of the Turkish Republic, similarly viewed education as crucial for the perpetuation of a secular, modern state. Islam had previously constituted the backbone of the education system in the Ottoman Empire although during the 19th century, professional schools for engineering, military, and medicine were established. The Kemalists, however, sought to create a national educational system emphasizing nationalism while eliminating much of the Islamic content. The reforms were comprehensive and included placing all private and religious schools under the authority of the Ministry of National Education. This ministry also trained the religious scholars, controlled the educational budget, and dictated the

curriculum.[18]

The similar educational reforms in France and Turkey, however, had different outcomes. France was relatively successful in using the educational system and other means to foster Republicanism. Religion is still not taught in the French public school system and only 13 percent of the French consider religion to be very important in their lives (WVS 2006, V9). In contrast, the school system that was set up in Turkey in 1927, did not remain purely secular for long. The teaching of religion has been reintroduced in 1949 and currently, a high school graduate has eight years of religion courses. More than 74 percent of the Turks consider religion to be very important in their lives (WVS 2007, V9).The electoral success of Islamic parties in Turkey after 2002 also reveals this attitude.

These differential outcomes reveal the difficulty of changing moral standards when inaction is uninformative about one's true morality. Moreover, our theory of moral persistence suggests that these outcomes may have been due to distinct initial distributions of moral attitudes and the initial increase in parental socialization when indoctrination is introduced (proposition 2). Indeed, prior to the French Revolution, the Church had been a privileged component of a political system that many Frenchmen, particularly the bourgeoisie, resented. Revolts by those who supported the nobility and/or the church were brutally suppressed. Once the monarchy was defeated, the church became the main alternative. Yet, large fractions of the French population resented it because of the gap between the values promoted by the Church (humility, poverty, etc.) and its behavior during the Ancien Regime. In sharp contrast, the Turkish Republic was created by a relatively small nationalist elite, while most Turks probably did not resent Islam or its organizations. Indeed, Islamic organizations were in charge of providing social services such as schooling and charity under the Ottomans

At least two pieces of evidence suggest that, in Turkey, vertical (parental) socialization was effective in countering oblique socialization by the secular educational system. In the 1970s, anti-Western, pro-Islamic parties entered the Turkish electoral scene, creating a political crisis. A military coup in 1980 restored a secular government. But it became widely accepted that Islam is the only effective means to maintain unity in Turkey, bridging political, social, and economic rifts. In 1982 classes in religious culture and ethics became mandatory. Additional piece of evidence of the importance of vertical socialization is the increase in the number of parents choosing Imam-Hatip schools for their children. These vocational religious schools were financed by donations, controlled by the state, and also provided general education. The first seven schools were established in 1951, by 1971 there were 71 schools, by 1997 there were 600 schools with 10 percent of the student population. Most graduates pursued a secular career. Thus, parents were seeking an alternative oblique socialization that emphasized Islam.[19]

[18] The discussion is based mainly on Keyman 2007 and Pak 2004.

[19] See Pak 2004. In 1999 graduates were restricted to subsequently enrol only in faculties of Divinity. This caused a steep decline in their popularity.

3.3 Political legitimacy in China and the Middle East

Our theory of moral persistence in a hostile institutional environment suggests that power may have limited impact on political legitimacy. The probability of detecting political crypto-morality is low because it is inherently difficult to differentiate whether one who is not politically active rejects the legitimacy of the political authority. After all, political crypto-morality entails taking the same actions, such as paying taxes, that are taken by those who accept the authority's legitimacy. It is in time of crisis, such as a revolution or an invasion, that the rejection of an authority's legitimacy manifests itself. Recall, for example, that the Iraqi army during the Second Gulf War, by and large, did not fight to save the dictator they previously seemed to have supported.

Our conclusion that power may have limited impact on political legitimacy is at odds with prevailing thought in political economy. At least since Karl Marx it is commonly assumed that political authorities can effectively use their power to gain legitimacy. As a consequence, legitimacy is hardly discussed in political science and political economy and is widely neglected.[20] We do not dispute that power is an effective means of control but argue that legitimacy is important as well.

The word legitimacy is derived from the Latin word *legitimus,* meaning lawful and according to law. The contemporary meaning, and the one we employ is broader, however. Weber, for example, distinguished between traditional (habit-based), charismatic (personal) and legal (rational) legitimacy. But even this classification has been considered to narrow (e.g., Zhao 2009). For the purpose of our analysis, a political authority is legitimate when people feel morally obliged to follow its rules and laws (Greif 2001, 2010). People hold moral standards that specify who has political legitimacy. To gain legitimacy, therefore, the political authority has to comply with these moral standards. Moral standards have been, for example, the divine right of kings, having the right ancestry, being fairly elected, exercising due process, and pursuing a particular policy to name a few. An authority's political legitimacy can rest on more than one moral standard and can change over time. Yet, in a given society, some moral standards are likely to be more prominent in specifying political legitimacy.

In favor of our position that legitimacy matters, the strategists of the Chinese Communist Party [CCP] have recently concluded that "the deep reason for the disintegration of the Soviet Union lies in the exhaustion of political legitimacy" (Gilley 2008, p. 271). In other words, the regime that has the strongest incentives to understand the demise of the USSR points to legitimacy as a crucial factor. The communists' monopoly over coercive and economic powers did not entail gaining legitimacy. The Chinese strategists also concluded that using brute force is counterproductive. "In reviewing the lessons of the collapse of the Soviet Union, CCP strategists increasingly point not to the dangers of releasing repressive controls but to the dangers of relying on them in the first place" (ibid.).

[20] For example, the term 'legitimacy' has only 6 index entries and very little discussion in the New Handbook of Political Science (Goodin and Klingemann 1996).

We concur with the CCP strategists and demonstrate the generality of their conclusions by evaluating the observable implications of our analysis. Specifically, our analysis implies long episodes of stability in political philosophy, policies aimed at satisfying traditional pre-requisites for political legitimacy, and the loss of political authority when conditions for legitimacy are not met. In the language of our model, a political ruler may continue to promote and choose actions consistent with morality a to gain the support of the majority a-types, even when different views will serve him better. Indeed, the evidence confirms these predictions.

In pre-modern China, for example, political legitimacy has been based on the "Mandate of Heaven": Heaven would bless a just ruler with peace and prosperity. Military defeats, invasions, floods, famines, and similar disasters reveal the end of a mandate and the right to revolt. Good performance bestows political legitimacy. The mythology attributes the concept to the Duke of Zhou who, about 3000 years ago, invented it to justify overthrowing an ineffective ruling dynasty that had claimed a divine origin. The principle of the Mandate of Heaven had become a constant feature in Chinese political philosophy and the Duke's own dynasty was subsequently overthrown in a revolt justified by it.

Indeed, regardless of their dynastic affiliations, subsequent Chinese emperors refrained from using force to impose moral standards justifying the legitimacy of their specific dynasties. Rather, they pursued policies consistent with the objective of demonstrating having a Mandate of Heaven. Specifically, they seem to have been responsive to being evaluated by their accomplishments and not by alternatives measures such as birth rights or compliance with a particular decision-making process.

Chinese rulers, much more than the Europeans', were active in promoting prosperity. They financed the discovery of new agricultural techniques, which they then distributed throughout the Empire (Mokyr 1990). Moreover, from 1085 AD to 1776 AD tax rates were generally lower in China than in Europe and real tax per-capita declined by perhaps as much as 85 percent.[21] The Chinese state also invested heavily in flood control, gave tax relief during famines, and intervened counter-cyclically in the grain market.[22]

In the early modern period, however, the Chinese emperors failed to effectively respond to challenges posed by the military and economic rise of the West. This performance failure contributed to the collapse of China's last dynasty and eventually to the rise of Mao's communist regime in 1949. The legitimacy of the Maoist regime was based on the communist ideology and, to a larger extent, on Mao's personal charisma. "The Chinese had such blind faith in Mao and the Chinese Communist Party (CCP) that they tried to follow the party line frequently at the expense of their own well-being. ... Millions of people died tragically during Mao's era, but most Chinese trusted Mao and believed that those tragedies, including their own suffering, were the

[21] For taxation see Liu (2005), table 3.3, p. 90. Rosenthal and Wong (2006) argued that Europe's higher taxation was due to political fragmentation. Yet, political fragmentation is endogenous to legitimacy norms (Greif, 2008).

[22] E.g., Shiue 2005. In the world value survey (2007), http://www.worldvaluessurvey.org, 29.6% of the Chinese respondents view subsidizing the poor an essential part of democracy . In the US (2006) the number was only 6.6%.

necessary costs on the road to paradise" (Zhao 2009, p. 422).

Following the death of Mao in 1976, the party could no longer rely on his personal charisma. Furthermore, economic conditions deteriorated. There were widespread earthquakes and agricultural output was hit by a drought. GDP per capita declined in real terms by 1.6%. Following 1979 the economic situation began to improve due to the economic reforms initiated by the CCP, that by now have led to the so called "socialist market economy". Yet, the reforms provided better information about the low prosperity of China relative to the West. As a consequence, the promise of the communist agenda was undermined, contributing to the rise of the pro-democracy movement in the late 1980s. The violent confrontation with the pro-democracy movement in 1989 seems to have revealed to the CCP the need to strengthen their legitimacy.

To strengthen their legitimacy, the CCP began complying with the demands of the traditional performance-based Mandate of Heaven (Zhao 2009). Following 1989, nationalism has been promoted to portray the government as a defender of the nation. The central government began to be active in eradicating corruption and highlighting its role as protecting the people from local bureaucracy. Previously, corruption was tolerated. The CCP now promotes concepts such as the 'Three Representatives' and 'Harmonious Society' that emphasize its duty to foster welfare. This duty, according to the CCP-controlled media is "the foundation of the Party, the basis of government legitimacy and the sources of state authority" (ibid, p. 426). Indeed, contemporary Chinese rely on outcomes – security and prosperity – to evaluate their leadership rather than possible alternatives such as social justice or adherence to a democratic political process.[23] Political legitimacy is still sought based on the Mandate of Heaven.

In contrast to China, political legitimacy in the Muslim Middle East has traditionally been faith-based (Lewis, 1991; Greif 2001). Faith-based legitimacy was inspired by the Qur'anic verse "Obey God, obey His Prophet, and obey those in authority over you" (IV, 59). The theological and popular interpretations of this and similar verses have been that a Muslim should obey those with the power to rule as long as they serve Islam. It is a sin to disobey a Muslim ruler who follows, protects, and promotes the faith. It is also a sin, however, to obey him if his orders contradict the teachings of Islam. Using force to overthrow a ruler who betrayed Islam is justified (e.g., Qur'an XXVI, 150–2). The Prophet Muhammad set a precedent by revolting against the un-Islamic rulers of Mecca.

Indeed, revolts in the name of Islam have been, and still are, common in the Muslim Middle East. An example is the rise of the House of Saud, the rulers of much of the Arabian Peninsula

[23] http://www.worldvaluessurvey.org. In China, 22.7% of the respondents viewed strong defense force as their country's most important goal. This percentage is much lower in each of the other powers in the region (Japan, 8.7%.; South Korea, 7%; Indonesia, 6%; Vietnam, 11.6; India, 14.3%). Not surprisingly, however, the objective of economic growth was ranked high in all these countries. The evaluation of the government in China by its accomplishments rather than the process is supported by the observation that only 8.1% of Chinese considered increased political participation as the most important national task. The average in the other regional powers is 15.4%. In China, only 5% selected protection of free speech as their first choice personal aim versus 17.8% in the US (2006).

(hence the name Saudi Arabia). In 1744 they adopted the teachings of al-Wahhab (1703-92), according to which the traditional rulers of Mecca and Medina were illegitimate because they did not follow the appropriate path of Islam. Osama Bin Laden has similarly claimed that the Saudis lost their legitimate right to rule because they violated an explicit Islamic prohibition to allow non-Muslims (i.e., US troops) to live in Saudi Arabia.

To gain faith-based legitimacy rulers in the Middle East have used various means to demonstrate their devotion to the cause of the faith. Late 18th century Algiers, for example, had 104 mosques that were mostly built overtime by various rulers. About six percent of the adult Muslim population worked in these establishments (Abun-Nasr 1987, p. 162). For comparison, only one percent of the adult population held equivalent jobs in the diocese of Paris about this time (Mousnier 1979, p. 319). Policy-makers expressed their devotion in ways other than co-optation. For example, lending at interest was customary among the Turkish people and it was initially maintained in the Ottoman Empire. When the Ottomans turned from conquering Byzantium to conquering the Muslim Middle-East, however, they restricted such lending to placate the Muslim religious scholars.

The collapse of the Ottoman Empire during World War I led to a moral dissonance in the Middle East. This collapse invalidated the premise that following Islam is a key to personal and communal success (Lewis, 1991). Secular moral entrepreneurs, such as Gamal Abdel Nassar who became the president of Egypt and Michel Aflaq the ideological founder of the Baath parties that captured power in Syria (1963 -) and Iraq (1968-2003) and advocated a socialist Arab nationalist movement to unify all Arab countries. Yet, faith-based legitimacy remained a potent force in the Muslim Middle East. For example, the Arab Republic of Syria has no official state religion, yet Islam is the declared foundation of the legal system. Similarly, the Egyptian 1971 constitution defines the state as "a Socialist Democratic State," in which, nevertheless, "the principal source of legislation is the Shari'ah." The contemporary importance of faith-based legitimacy also reveals itself in the fact that faith-based challenges appeared in the Islamic world shortly after the end of colonialism. As early as 1928 the fundamentalist Muslim Brotherhood that emerged in Egypt challenged the legitimacy of the state on this ground and advocated reorganizing Egypt as an Islamic state. It quickly spread to Sudan, Syria, Palestine, Lebanon, and North Africa.

We argued that the Communist Party in China transitioned to seek legitimacy by advancing policies consistent with the traditional moral basis of political legitimacy. In contrast, rulers in the Muslim Middle East and North Africa (MENA) have pursued policies that do not conform to the traditional moral basis of political legitimacy. Be the causes undermining these policy choices be as they may, they have a clear empirical implication. Political legitimacy in China should be higher than predicted after controlling of other economic, social, and political factors while legitimacy in the MENA should be lower. This is exactly the finding in a cross-country econometric analysis of 72 countries (Gilley 2006) China ranks 13 in term of its political legitimacy and it is an outlier while the MENA countries have low legitimacy ranking. Morocco rank of 32 is the highest and it is followed by Egypt in the 40th place.

4 Concluding comments

Identifying the micro-level mechanisms that contribute to moral persistence is crucial for understanding dynamics of political and economic outcomes. Recent important contributions have focused on the complementary relations between institutions and morality in democracies.[24] The majority chooses institutions that foster the morality they hold. In particular, these institutions foster the majority's morality by rewarding those who practice it, or socialize their children to hold it. The impact of institutions on moral dynamics is therefore a by-product of the political process. Moral persistence is thus due to the complementary relations between the dominant morality, the rules governing political decision-making, and decisions regarding behavior and socialization.

In contrast, this paper focuses on the micro-level mechanisms that contribute to moral persistence when institutions are designed to directly *influence* moral dynamics, and not just reflect the morality of the majority. Whether such institutions can influence moral dynamics and moral persistence depends on the individual's ability to de-couple morality from behavior. Moral beliefs are inherently unobservable and behavior can be strategically chosen in hostile institutional environments to disguise one's true morality. When such crypto-morality is effectively practiced, behavior corresponds to the institutionally promoted morality but morality itself does not. A *behavioral transition*, rather than a *moral transition* transpires. Crypto-morality enables moral persistence in hostile institutional environments.

Our model highlights the differences between the factors contributing to cultural diversity (Bisin and Verdier 2000, 2001) and the factors contributing to the more general phenomenon of moral persistence. Equilibrium cultural diversity is the centerpiece of Bisin and Verdier's models, and it is a consequence of endogenous socialization by families. Our focus is not on the interplay and socialization decisions between individuals of different cultures, but instead is on the interaction between the institutional environment and socialization decisions. Specifically, we considered the impact of incentives provided by the political authority and of indoctrination on socialization decisions. This lead us to explore such issues as the monitoring technology of a coercive power, the effective range of possible penalties, the relationship between public and private actions in the exercise of moralities, the externalities of the minority's persecution on the majority, the relative benefits of indoctrination over coercive sanctions, and the possible political conflicts over controlling indoctrinating institutions. Equally important, our analysis highlights the persistence of political legitimacy and exposes the micro-mechanisms that hinder upon political transitions.

While our theoretical analysis highlights the role played by crypto-morality, it is but a first step towards a better understanding of moral persistence. Several issues demand further exploration. First, we abstract from directly modelling the preferences of the political authority, including a more detailed account of the costs and benefits of various institutions. Second, we have no role

[24] See, e.g., Benabou and Tirole (2006), Tabellini (2008).

for communities and community leaders in our analysis. Third, we ignore the interplay between the distribution of moralities, their persistence, and their influence on competition for political legitimacy.

Appendix

Proof of Proposition 1: In the unique interior SSE, (2) implies that $H'(\tau^a) = H'(\tau^b)$. From the FOCs (8) and (9) it follows that the SSE characterizing q^π satisfies $(1-q^\pi)(\Delta u - \pi) = q^\pi(\Delta u - \pi)$, from which we obtain the proposition. ■

Proof of Proposition 2: Comparing the FOC in (11) to that of the benchmark case (5), it is easy to see that the right-hand side is larger in (11) for any q_t. Since $H(\cdot)$ is increasing and strictly convex this implies that the level of τ^a that solves (11) is larger than the level that solves (5). Turning to a b morality parent, their children will be indoctrinated at school to be socialized to b with probability 1, and as a consequence they invest in no socialization at home and $\tau^b = 0$. As for the transition dynamics, the assumptions on $H(\cdot)$ guarantee that the solution to (11) results in some unique $\tau^a \in (0,1)$, and the transition dynamics in (10) imply that $\lim_{t\to\infty} q_t = 0$.■

Proof of Proposition 3: If $\pi \in (\pi^c, \overline{\pi}]$ then a-types choose c and b types choose b. Using this to obtain the correct expected utility functions for parents leads to the FOCs (13) and (14) as described above. In the unique interior SSE, (2) still applies and it implies that $H'(\tau^a) = H'(\tau^b)$. From the FOCs (13) and (14) it follows that the SSE characterizing q^c satisfies $\phi(1-q^c)(u_c^a - \underline{u}) = \phi q^c(\overline{u} - u_c^b)$, from which we obtain the characterization of $q^c = q^*$, and the solutions for τ^a and τ^b follow. ■

Proof of Proposition 4: The proof is an immediate consequence of Propositions 1 and 3. ■

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