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# State Building and Social Control

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February 2025



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# State Building and Social Control

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## Abstract

A modicum of homogeneity of social norms is deemed valuable by societies, and social control is a way to achieve it. In this paper, we posit an economy populated by masses and elites, whereby the social norms of the former affect the welfare of the latter group. Consequently, the elites may exercise social control to induce the masses to embrace norms aligned with their own preferences. Our analysis reveals, in particular, that social control may go hand in hand with the prevalence of mass education, which induces homogeneity of norms. This, in turn, is argued to be consistent with historical evidence on the emergence of public schooling.

**Keywords:** social norms, social control

**JEL Codes:** D70, H50, I25

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*We would like to thank several colleagues and seminar participants at the University of Technology Sydney for helpful feedback and, especially, the referees for their detailed insightful and constructive comments.*

## I. Introduction

To maintain social order and prosper, all societies stipulate acceptable as opposed to deviant behavioral standards and exercise social control to shape the former.<sup>1</sup> At least since Thomas Hobbes it has been recognized and widely acknowledged that social order in a state needs social control, which can be achieved through penalties for behaviors viewed as deviant from acceptable social norms – or rewards for compliance with those. This presupposes the existence of social norms as set in the legal system and via less formal arrangements.<sup>2</sup> Compliance with these is encouraged through various rewarding social mechanisms, whereas deviance is penalized, thus creating a modicum of uniformity; cf., “Society can survive only if there exists among its members a sufficient degree of homogeneity...” (Durkheim, 1972). Recognition of importance of society’s members’ homogeneity implies that states should strive to institute mechanisms that lead to such – an insight made already by Thomas Hobbes and developed in a more modern casting in Durkheim, 1933.

Modern nation-building is just one example of such. Cultivation of a common national identity, such as through public education, national symbols etc., has been often viewed as an inherent component of nation-state building (Gellner, 1983, Hauk and Ortega, 2021). In contrast, excessive cultural heterogeneity has been found to be polarizing not only at a country level but also detrimental at the firm level, see e.g., Hjort, 2014, and Marx et al., 2021.<sup>3</sup> One mechanism that mediates the effects of cultural heterogeneity on social fabric is coordination, obvious examples of which are language and culture. But excessive heterogeneity can be detrimental because of additional factors as well, such as heterogeneity of social norms. One such norm, for example, is compliance with the rule of law.<sup>4</sup> These examples make it clear that control of social norms is a salient characteristic of human societies, deeper and preceding modern nation building, going back to ancient states as is evident from Finer, 1997.<sup>5</sup>

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<sup>1</sup> Social control is sometimes defined as “...the rules and standards of society that circumscribe individual action through the inculcation of conventional sanctions and the imposition of formalized mechanisms.” (the Meriam Webster dictionary).

<sup>2</sup> Durkheim, 1933, is an early classical reference. Sociologists make a distinction between *mala in se*, socially unacceptable norms and behaviors, and *mala prohibita*, illegal ones.

<sup>3</sup> It should be noted, however, and will be discussed in a subsequent section, that state building with its insistence on social homogenization, historically preceded nationalistic movements and the creation of nation-states, see Hobsbawm, 1990.

<sup>4</sup> Crime, delinquency, misdemeanor, and noncompliance with social rules in general and the rule of law, specifically, are classical cases of deviant behaviors that often provides a rationale for social control (Durkheim, 1933).

<sup>5</sup> Legal texts preserved from Near Eastern civilizations, such as the Code of Hammurabi, attest to the importance of

The degree to which societies are able to exercise control of social norms and the means of doing so depend on the strength and the power of the state. Thus, historically, enlightened monarchs in 18<sup>th</sup> century Europe actively engaged in society and state building through social control. As will be more in detail argued below, both Frederick the Great of Prussia and Maria Theresa of Austro-Hungary advanced multiple reforms whose goal was the strengthening of the social and economic fabric of the states they ruled. One of the ultimate objectives of these reforms was the reshaping of the relationship between the masses (mostly represented by the peasants) and the state apparatus designed by the elites: the ruler, his/her advisors and ministers. These were classical examples of “reforms from above” whereby the elites initiated and actively sought to implement the reforms, often facing opposition from the masses. In particular, being unsatisfied with the institution of serfdom, believing that it was a cause of economic backwardness, both Frederick the Great of Prussia and Maria Theresa conceived of its abolition and undertook initial steps towards peasant’s emancipation from their lords. This, however, necessitated the creation of a more direct relationship between the illiterate and poorly socialized peasants and the state, its developing rules and norms – which came to be shaped through intensification of social control.

A particularly important means of social control since that period has been mass education. Scholars agree that first ever systems of universal nation-wide schooling were primarily designed to instill in children’s social norms, such as obedience and compliant behavior, deemed useful by the elites and seen as a part and parcel of state building, whereby a measure of social homogeneity and resulting cohesiveness ensures social stability.<sup>6</sup> Consistent with this, Cantoni et al., 2017, show how school curricula in modern China shapes students’ political attitudes, making them more in line with prevailing ideology; Cinnirella and Schueler, 2018, exhibit results of similar nature pertaining to Imperial Germany. Further, Arold et al., 2022, show in the context of a natural experiment how schooling has changed different social attitudes, prominently religiosity, in Germany.

Whereas social control by dominant elites can be viewed as an ingredient of a social contract as

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customary legislation that reflected social norms of the period. And invariable existence of taboos in all human societies attests to informal mechanisms used to exercise control of social norms,

<sup>6</sup> As was subsequently rationalized, “...education perpetuates and reinforces... homogeneity by fixing in the child from the beginning the essential similarities which collective life demands... Education does this by instilling a sense of social solidarity in the individual – which involves instilling a sense of belonging to wider society, a sense of commitment to the importance of working towards society’s goals and a feeling that the society is more important than the individual... It is by respecting the school rules that the child learns to respect rules in general, that he develops the habit of self-control and restraint simply because he should control and restrain himself.” (Durkheim, 1972).

envisioned by Hobbes, Locke, and many others, its nature and characteristics remain elusive. For example, what are the restraints faced by the party in charge of social control? What policy outcomes plausibly emerge under such restraints? How do these outcomes correlate among themselves? This paper's goal is to present a tractable framework that captures some of the above-described features. Specifically, we are interested in exploring why the elites might be interested in imposing social control on the masses; how this may affect public policies; and how mass education may serve as a useful tool in this regard. To this end, we present a simple tractable model, whereby socialization of cultural norms by the masses benefits the elites. The masses, when making costly socialization choices fail to take into full consideration their effect on the elite members, generating a market failure, whereby these choices induce an inefficiently low level of cultural socialization. While the elites have an incentive to enforce alternative social norms, such an imposition may induce protests and rebellion from the masses, potentially resulting in violent destruction or expropriation. This restrains the scope of social control through imposition and induces the elites to commit to income redistribution to appease the masses, or, alternatively to subsidize mass education with the view of incentivizing the masses to socialize into appropriate norms. An important empirical implication of our analysis is that social control and resulting homogeneity may well go hand in hand with redistributive public spending and, specifically, with public education, reflecting the outcome of a "grand bargain" between the elites and the masses.

We complement our formal analysis with historical account of the evolution of the first-ever mass education systems, in Prussia and Austro-Hungary. It provides a useful context for our analytical framework, showing that the elites were interested in promoting socialization through social control as the means of state-building, and that mass education was one of the essential elements in this regard. This is in contrast to other, subsequent cases, whereby public education was expanded in response to democratic pressures, see Paglayan, 2021, for a discussion and literature review.

The paper is related to several literatures. One strand of extant literature deals with nation building; Gellner, 1983, Green, 2013, Weber, 1979, are some of the classical references in this regard. Alesina et al., 2021, Bandiera et al., 2019, Cantoni et al., 2017, Cinnirella and Schueler, 2018, Clots-Figueras and Masella, 2013, Hauk and Ortega, 2021, are more recent contributions by economists that model and quantify some of the effects education has on state building by inculcating aspects of national identity. Blanc and Kubo, 2024, find that elites were instrumental in building French national identity. Another related strand deals with education in the context of nation building, tying it to economic

performance, see e.g., Bourguignon and Verdier, 2000, Gradstein and Justman, 2002, Ortega and Tanageras, 2006. This literature makes the point that social homogenization achieved through education facilitates coordination and communication between economic units, thereby enhancing performance. Also related is the work that emphasizes social and political effects of wars, e.g., Dincecco and Prado, 2012, and Scheve and Stasavage, 2012. More specifically, Aghion et al., 2019, argue that military rivalries trigger mass education reforms. This is a complementary channel to the one studied here, which is highly relevant in some but not all cases, as will be shown below. Conceptually, our formal model can be viewed as complementary to that of Aghion et al., 2019, as well. In their model, education enhances chances of winning wars, but the mechanism for that is unclear. One interpretation of our framework can be that education, through inculcation of norms viewed as valuable by elites (such as law compliance and loyalty to the nation), enhances, in particular, military performance, thus serving the elite's interests. In this sense, our framework generates a channel behind Aghion et al's., 2019, stipulation that education is a vehicle that boosts economic performance.

Work by economists on, specifically, social control is surprisingly scant; in particular, none of the above cited papers on nation building addresses this issue – which is broader than control of nation building. In fact, the only paper that came to our attention is Lagunoff, 2023, which, while related, differs from this study in emphasis, by viewing it as a tool in the context of a principal-agent interaction between an autocrat and the masses. In contrast, incorporating social control policies in the context of state building is a novel and potentially fruitful agenda that may help explain important historical episodes and contemporary regularities, and this paper is a step in this direction.

Also related is the literature on identity formation, Akerlof and Kranton, 2000, Shayo, 2009, Tajfel, 1981. While this work (initiated by social psychologists and recently picked up in economics) is cast in broad terms, Bazzi et al., 2019, and Skaperdas and Testa, 2023, are more directly relevant in specifically focusing on national identity in the context of nation building. Another related strand of psychological literature that explores socialization is exemplified in Maccoby, 2000, and Maccoby and Martin, 1983; we rely on the insights generated by this work to formulate socialization costs. Aspects of the paper's model are related to the literature on intergenerational transmission, initiated in Bisin and Verdier, 2000; see Adriani and Sonderegger, 2009, 2018, Dohmen et al, 2012, Spiro, 2020, Sunde et al., 2022, for some more recent theoretical and empirical work on intergenerational transmission of traits; Bisin and Verdier, 2023, contains a comprehensive review. Finally, the specifics

of how intergenerational socialization works here are especially related to Gradstein and Justman, 2002.

The rest of the paper proceeds as follows. The next section introduces and analyzes our framework, which illustrates that a decentralized equilibrium results in excessive heterogeneity of social norms relative to a coordinated outcome. In Section 3, using this framework as a baseline, we focus on social control policies, mainly mass education, to enhance the homogeneity of social norms. Section 4 discusses the earliest historical case studies of the introduction of mass education systems through the prism of the presented model. Finally, Section 5 concludes with brief remarks.

## 2. Baseline Framework

### *The Model*

We stipulate an economy that operates over two time periods, 0 and 1. It is initially populated by a unit measure of households indexed  $i$  that consist of a parent and a child, that belong to one of two population groups, indexed  $j, j = E, M$ . The former is the elite group, and the latter are masses; their respective sizes are fixed over time and assumed equal for simplicity, 0.5 each; further, we assume that both groups are internally homogeneous.<sup>7</sup> Initially, a decision making parent from group  $j$  is characterized by a gross income level  $y_{j0}$ , and a social norm. With regard to social norms, we assume that the one of the elite group is constant,  $0 < p_E < 1$ .<sup>8</sup> The initial social norm of the masses is assumed  $0 < p_{M0} < p_E$ . **Moral attitudes, law compliance, obedience and loyalty to goals as determined by the elites are examples of important categories of social norms we have in mind.**

Household income is allocated between family consumption  $c_{ij0}$  and capital investment,  $k_{ij1}$ , subject to the budget constraint:<sup>9</sup>

$$(1) y_{j0} = c_{ij0} + k_{ij1}$$

Parents belonging to the masses also instill in their children social norms,  $p_{iM1}$ , at a psychic cost of

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<sup>7</sup> Making the more realistic assumption that the masses form the majority would not change anything of substance, so we opt for simplicity. And internal heterogeneity would add little as well.

<sup>8</sup> This is for simplicity; in the appendix, we present the economy's cultural dynamics assuming that the elites also engage in socialization efforts. Historic evidence suggests that it is mostly the masses who were coerced to ultimately change their norms to conform to those set by the elites, hence, we adopt an extreme assumption in the main analysis.

<sup>9</sup> Capital could in principle be physical or human, although the latter interpretation is more appropriate for some parts of the paper.

$F(p_{M0}, p_{iM1}) = C(|p_{M0} - p_{iM1}|)$ ,  $C(0) = 0$ ,  $C'(0) = 0$ ,  $C', C'' \geq 0$ . This formulation is rooted in the work by developmental psychologists (e.g., Maccoby, 2000, and Maccoby and Martin, 1983) documenting that socialization is partly genetic, implying that norms can be partially inherited from parents, and partly formed within family; in particular, this cost component can be perceived as a mental cost associated with instilling a norm that deviates from the inherited one.

Social norm choices by the masses for their children,  $p_{iM1}$ , affect social distances among individuals in the next generation.<sup>10</sup> We assume that excessive cultural heterogeneity reduces utility by impeding coordination or causing alienation, which can lead to frictions and conflicts between population groups.<sup>11</sup> In this sense, and in accordance with existing literature discussed in the Introduction, means of social control studied below, induce state building by instilling a larger degree of norms' homogeneity. We normalize the welfare loss resulting from encounters of two individuals with identical norms to zero. Consequently, the respective welfare losses are given as follows:<sup>12</sup>

$$(2a) L_{E1} = \int_{m \in M} \phi(p_E - p_{mM1}) dm, \phi', \phi'' > 0, \phi(0) = 0$$

$$(2b) L_{iM1} = \int_{m \in M} \phi(|p_E - p_{iM1}|) dm + \int_{m \in M} \phi(|p_{iM1} - p_{mM1}|) dm$$

Next-period income is produced according to the following standard production function:

$$(3) y_{ij1} = A k_{ij1}^\alpha, A > 0, 0 < \alpha < 1$$

Masses' parents are assumed to derive utility from family consumption and expected income of their children; and incur welfare losses from intergenerational cultural distance and from their children's cohort social distances. We, therefore, write:

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<sup>10</sup> Alternatively, one could posit that individuals care about distances in behavior, the actions undertaken. Assuming that norms are appropriately translated into actions, however, make these alternative stipulations essentially identical.

<sup>11</sup> Dinesen et al., 2020, in their recent comprehensive literature review, argue that cultural polarization reduces trust – which, in turn, can be detrimental for coordination and performance. Of course, norms' diversity can also be advantageous – especially under their cultural interpretation - potentially resulting in a non-linear effect of heterogeneity on welfare, so that the function  $\phi$  below is U shaped; to adjust the model accordingly, we would then assume that the initial level of cultural heterogeneity is excessively large.

<sup>12</sup> The loss functional forms for both groups are assumed identical merely to save notation and does not affect the substance of the analysis under the other assumptions. More generally, and to also allow for potentially beneficial effects of cultural diversity, we could assume the loss functions to differ, with the loss minimizing value of the norm for the elites exceeding the one for the masses. This would not, however, change the substance of the analysis.

$$(4a)U_{iM0} = \log(c_{iM0}) + \log(y_{iM1}) - C(|p_{iM0} - p_{iM1}|) - L_{iM1}$$

Elite parents derive utility from family consumption and expected income of their children and disutility from their children's mismatch of norms with peers:

$$(4b)U_{iE0} = \log(c_{iE0}) + \log(y_{iE1}) - L_{E1}$$

The masses socialize their children, and the households allocate their available budgets. We will consider mutually consistent equilibria. Before proceeding with the analysis, we would like to point out the relationship our framework has with the influential argument in Aghion et al., 2019, stipulating that military needs constitute a driving force behind mass education. In their paper, education boosts up military performance, although the mechanism for this is not spelled out. Recalling that law compliance and obedience – clearly, important traits in the military – are possible interpretations of the instilled norms, our model can be viewed as providing underpinnings for Aghion et al.'s., 2019, theory.

### **Equilibrium Analysis**

Parents allocate budgets subject to the constraints in (1) and in order to maximize utilities, (4a) and (4b), for the masses and the elites, respectively. The first-order conditions with respect to capital investment choices in each period are given as follows:

$$-\frac{1}{y_{ij0} - k_{ij1}} + \frac{\alpha}{k_{ij1}} = 0$$

so that:

$$(5) k_{ij1} = k_{j1} = \frac{\alpha y_{j0}}{1+\alpha}, c_{ij0} = c_{j0} = \frac{y_{j0}}{1+\alpha}$$

In regard to the social socialization decisions by the masses, these are made so as to maximize (4a), where  $L_{iM1}$  are given as in (2a). The first order condition determining the Nash equilibrium outcome is:<sup>13</sup>

$$(6) -C'(p_{M1} - p_{M0}) + 0.5\phi'(p_E - p_{M1}) = 0$$

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<sup>13</sup> Since parental norms are internally homogeneous within each group initially, the choice of instilled norms will be identical as well, hence we skip the individual index; and, clearly,  $p_{M1} \leq p_E$  holds at equilibrium.

and the second order conditions can be seen to hold.<sup>14</sup> These conditions balance parents' emotional costs of intergenerational distance in social norms with those of having children culturally remote from the dominant norm. The above equilibrium is socially suboptimal. This is because socialization decisions by the masses' parents fail to consider their effects on the elite. Consequently, the resulting levels of next-period social norms fall below the socially optimal one. The latter would be obtained by choosing the levels of social norms for the masses that maximize aggregate welfare, leading to the (internal) first order condition:

$$(7) -C'(p_{M1} - p_{M0}) + \phi'(p_E - p_{M1}) = 0$$

And, clearly,  $L_{iE1} = L_{iM1} = \phi(p_E - p_{M1})$ .<sup>15</sup>

We then have:

**Proposition I.** There exists a unique decentralized equilibrium, which is socially suboptimal.

The social suboptimality of individual socialization decisions of the masses that ignore their effects on the elites is one driving force behind social control policies studied below. Even more importantly, these decisions are suboptimal from the elite's perspective.<sup>16</sup>

### 3. Social Control

#### Baseline Model

As was made clear in the above analysis, the masses choose for their children levels of social norms that are lower than the one desired by the elites. This implies that the latter may be interested in exercising social control by affecting the choice of norms by the masses.

We begin by exploring a bargain between the elites and the masses that, ultimately determines the level of social norms for the latter.<sup>17</sup> Let  $p_1^{SC}$  denote the level of social norms imposed on the

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<sup>14</sup> To avoid corners, we assume that  $C'(0) < 0.5\phi'(p_E - p_{M0})$ ,  $C'(p_E - p_{M0}) > 0.5\phi'(0)$ .

<sup>15</sup> In principle, a Pareto improvement could be obtained through a binding contract, whereby the masses incrementally increase their levels of socialization in exchange for a marginal income redistribution that would compensate them for such. Such a monetary transfer could be made directly by the elites' parents (such as in the form of schooling subsidies), or indirectly, on behalf of their children – who stand to benefit from reduced social polarization vis-a-vis the masses. Such contracts, however, may be incomplete and hard to implement.

<sup>16</sup> An extension in the appendix provides a public good interpretation of the indicated suboptimality. Specifically, it is shown there that the excessive cultural polarization results in underprovision of a public good – one of the primary functions of the state. In this sense as well, social control is linked to state building.

<sup>17</sup> Many of the results remain intact if policies are implemented by a social planner interested in maximizing aggregate welfare. The assumption that policies are determined by the elites is in order to make the conclusions starker.

masses by the elites. In the absence of restrictions, clearly  $p_1^{SC} = p_E$ , so as to minimize cultural distances and bring the social norm of the masses closer to the elite's norm.<sup>18</sup> We, however, assume that the masses have access to a rebellion technology that (i) nullifies the imposed social norm and reverts to mass parents' determination of social norms; (ii) at the cost of a lost income. By a rebellion we mean not only an armed insurrection, but any kind of non-compliance by the masses, such as violent protests or revolts, that results in income destruction. In particular, we assume that the amount of income left in parents' hands in case of a rebellion is  $\gamma_j y_{j0}$ ,  $0 < \gamma_E < \gamma_M < 1$ . Note that if rebellion, occurs, the masses do not take over political power, so this is not their motivation; instead, its effect consists of a pure economic loss as a result of destructive struggle between the two population groups. A rebellion threat will be referred to as being more effective the larger is  $\gamma_M/\gamma_E$  in other words, the larger is the resulting economic destruction of the elite's income relative to that of the masses.

The elites set a social norm for the masses, upon which the masses decide whether to rebel or not. In the latter case, income allocations take place, capital investments are made, and next-period incomes are determined with the social norm set by the elites. In the former case, incomes are reduced as specified above, the masses determine social norms on their own etc.

The analysis proceeds backwards. The utility levels of the mass parents when there is no rebellion are:

(8a)  $U_{M0}(\text{no rebellion})$

$$= \log\left(\frac{y_{M0}}{1+\alpha}\right) + \log\left(A \frac{\alpha y_{M0}}{1+\alpha}\right)^\alpha - C(p_1^{SC} - p_{M0}) - 0.5\phi(p_E - p_1^{SC})$$

whereas under rebellion they are:

$$(8b) U_{M0}(\text{rebellion}) = \log\left(\frac{\gamma_M y_{M0}}{1+\alpha}\right) + \log\left(A \frac{\alpha \gamma_M y_{M0}}{1+\alpha}\right)^\alpha - C(p_{M1} - p_{M0}) - 0.5\phi(p_E - p_{M1})$$

where, clearly,  $p_1^{SC} \geq p_{M1}$ , as imposition of the equilibrium level of the norm avoids the rebellion. Further, the elites' favored norm for the masses is as close to their preferred norm as possible provided that it avoids the rebellion scenario; this implies that its equilibrium value makes the masses

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<sup>18</sup> In particular, in an extended version of the basic model this would also result in a higher level of public good provision.

just indifferent between launching rebellion or not,  $U_{M0}(no\ rebellion) = U_{M0}(rebellion)$ . We then write:

$$(9) (1 + \alpha) \log(1/\gamma_M) = C(p_1^{SC} - p_{M0}) - C(p_{M1} - p_{M0}) + 0.5[\phi(p_E - p_{M1}) - \phi(p_E - p_1^{SC})]$$

where  $p_{M1}$  is determined from (6); our assumption guarantee that the solution is unique; further, differentiation reveals that the right hand side increases in  $p_1^{SC}$  and equals zero when  $p_1^{SC} = p_{M1}$ . Since the left hand side in the above equation exceeds zero, it follows that

$$(10) C(p_1^{SC} - p_{M0}) - C(p_{M1} - p_{M0}) + 0.5[\phi(p_E - p_{M1}) - \phi(p_E - p_1^{SC})] > 0$$

which implies that  $p_1^{SC} > p_{M1}$ ; further, differentiation of (9) reveals that  $\frac{\partial p_1^{SC}}{\partial \gamma_M} < 0$ , so that the more effective the rebellion technology the lower the threshold norm level that avoids rebellion.

### **Income Redistribution**

We now introduce into the baseline model income redistribution, which complements the selection of social norms for the masses as a part of a bargain between the population groups. This is given by an income transfer,  $T$ , from each elite parent to every mass parent, implying that in the budget constraints (1),  $y_{E0} - T$  ( $y_{M0} + T$ ) replaces  $y_{E0}$  ( $y_{M0}$ ). The elites first propose the transfer amount and the level of social norms for the masses (social control). Then the masses decide whether to accept or launch a rebellion, which as above nullifies the elites' proposal and results in income loss. We are interested in the time consistent equilibrium.

Proceeding as above, the utility level of the mass parents when there is no rebellion is:

$$(12a) U_{M0}(no\ rebellion) = \log\left(\frac{y_{M0} + T}{1 + \alpha}\right) + \log\left(A \frac{\alpha(y_{M0} + T)}{1 + \alpha}\right)^\alpha - C(p_1^{SC} - p_{M0}) - 0.5\phi(p_E - p_1^{SC})$$

which decreases in  $p_1^{SC}$  for as long as it exceeds  $p_{M1}$ ; and under rebellion, whereby the elites' proposal is being rejected:

$$(12b) U_{M0}(rebellion) = \log\left(\frac{\gamma_M y_{M0}}{1 + \alpha}\right) + \log\left(A \frac{\alpha \gamma_M y_{M0}}{1 + \alpha}\right)^\alpha - C(p_{M1} - p_{M0}) - 0.5\phi(p_E - p_{M1})$$

The threshold value of the imposed norm is then determined by equating (12a) and (12b),

differentiation of which reveals – since  $p_1^{SC} > p_{M1}$  – that  $\frac{\partial p_1^{SC}}{\partial \gamma_M} < 0$ ,  $\frac{\partial T}{\partial \gamma_M} > 0$ : the more effective the rebellion threat the lower this threshold level, and the higher the requisite redistribution level; and  $\frac{\partial p_1^{SC}}{\partial T} = \frac{(1+\alpha)/(y_{M0}+T)}{C'(p_1^{SC}-p_{M0})-0.5\phi'(p_E-p_1^{SC})} > 0$ , indicating a positive relationship between the proposed level of redistribution and social norm.<sup>19</sup> Note that, if the imposed norm is equivalent to the one the masses choose in the decentralized equilibrium ( $p_1^{SC} = p_{M1}$ ), then no rebellion would be launched regardless of the level of transfer, thus any rebellion potential here is due to imposition of social control.<sup>20</sup>

Turning to the elites, assuming that  $\gamma_E$  is small enough, they will favor the “no rebellion” outcome even when the norm of the masses is determined by the latter in a decentralized non-imposed manner, thus inducing a relatively large utility loss for the elites from social distances. This implies that their utility level when proposing a norm accompanied by income transfer is:

$$(13) U_{E0}(\text{no rebellion}) = \log\left(\frac{y_{E0} - T}{1 + \alpha}\right) + \log\left(A \frac{\alpha(y_{E0} - T)}{1 + \alpha}\right)^\alpha - 0.5\phi(p_E - p_1^{SC})$$

And they choose the transfer amount and the level of the imposed social norm, subject to the constraint

$U_{M0}(\text{no rebellion}) = U_{M0}(\text{rebellion})$ , which determines a functional relationship  $p_1^{SC}(T)$ , along which the masses are just indifferent between launching a rebellion or not. Utility differentiation with respect to the transfer amount yields:

$$(14) \frac{dU_{E0}(\text{no rebellion})}{dT} = -\frac{1 + \alpha}{y_{E0} - T} + 0.5\phi'(p_E - p_1^{SC}) \frac{\partial p_1^{SC}}{\partial T} = 0$$

where  $\frac{dp_1^{SC}}{dT} > 0$ . The first term in the left hand side of (14) is negative, reflecting the adverse effect of income redistribution on the elites, but the second term is positive because a higher level of redistribution enables tighter social control while avoiding rebellion; in particular, the larger the

<sup>19</sup> Since both  $C'$  and  $\phi'$  are increasing functions,  $p_1^{SC} > p_{M1}$  implies that the denominator  $C'(p_1^{SC} - p_{M0}) - 0.5\phi'(p_E - p_1^{SC})$  must be positive.

<sup>20</sup> And rebellions, to the extent they occur, only carry economic, not political implications, in contrast to related work where elites are viewed as engaging in redistribution in order to survive, see Acemoglu and Robinson, 2005.

income level of the elites the higher the transfer amount. Further, since  $\frac{\partial p_1^{SC}}{\partial \gamma_M} < 0$ , it follows that the second term grows bigger the larger is the rebellion threat, which then implies a higher level of redistribution – and the ensuing level of social norms - in equilibrium.

Summarizing the above,

**Proposition 2.** The larger the rebellion threat, the higher the proposed level of income redistribution offered by the elites and the level of imposed social norms on the masses, in order to avoid rebellion.

Public spending that benefits the masses is an alternative policy strategy that could be pursued in the analysis. The idea is the same as with income redistribution: a commitment to benefit the masses enables the elites to exercise social control by imposition while alleviating rebellion threats. The important implication here is that the lower level of social heterogeneity as a result of tighter social control and a higher degree of redistribution (or public) spending go hand in hand.<sup>21</sup>

### **Subsidizing Socialization**

Social control can be exercised through imposition, penalties for non-compliance with dominant norms – or through subsidization of socialization with those. State supported religion and subsidized education system are some of the important examples of this channel, to which we now turn. Both played an historically important role in state building, as we will argue subsequently for the case of education.<sup>22</sup>

Suppose, therefore, that inculcation of social norms by the parents belonging to masses is subsidized at the rate of  $s$  per unit, so that  $sp_{M1}$  is the subsidy amount per person; this then is also the amount of income taxes on the elites used to offset the subsidy outlay. The important feature, therefore, that differentiates this public intervention scheme from income redistribution is that here the redistribution is contingent on socialization decisions of the masses; subsidized public schooling is a

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<sup>21</sup> This result is also consistent with the commonly held view that redistribution and welfare state were often initiated from above in order, among other things, to maintain national identity and counter threats to social stability. In the words of an expert on European history, "All the modern twentieth-century European dictatorships of the right, both fascist and authoritarian, were welfare states. . . They all provided medical care, pensions, affordable housing, and mass transport as a matter of course, in order to maintain productivity, national unity, and social peace." (Robert O. Paxton, 2013, *The New York Review of Books*). It should, however, be noted that such redistribution did not take place in the historical episodes we analyze below.

<sup>22</sup> While our focus is on education, religion was historically one of its main components, as well as having played an autonomous policy making role, see Grzymala-Busse (2015).

good example of such. The elites first determine the subsidy rates, upon which the masses instill norms in their children; again, our interest is with the resulting time consistent equilibrium.

The left-hand side of the budget constraint for the masses (1) then becomes  $y_{M0} + sp_{M1}$  (and for the elites  $y_{E0} - sp_{M1}$ ), and the masses select norms so as to maximize their utilities (4a) subject to thus modified budget constraints. Assuming an internal solution, for a given subsidy rate, the first order condition with respect to the choice of unstilled norm by the masses is now as follows:

$$(15) \frac{s}{y_{M0} + sp_{M1} - k_{M1}} - C'(p_{M1} - p_{M0}) + 0.5\phi'(p_E - p_{M1}) = 0$$

whereas, adjusting (5),

$$(16) k_{M1} = \frac{\alpha(y_{M0} + sp_{M1})}{1 + \alpha}, k_{E1} = \frac{\alpha(y_{E0} - sp_{M1})}{1 + \alpha}$$

Differentiation reveals that  $\frac{dp_{M1}}{ds} > 0$ . The elites set the subsidy rate in anticipation of the above equilibrium responses. The derivative of the elites' utility functions with respect to the subsidy rate yields the first order condition:

$$(17) \frac{dU_{E0}}{ds} = -\frac{p_{M1}}{y_{E0} - sp_{M1} - k_{E1}} + 0.5\phi'(p_E - p_{M1})\frac{dp_{M1}}{ds} = 0$$

where the first, negative term reflects the direct cost of the subsidy for the elites, and the second positive term is the utility gain as a result of higher social norms of the masses induced by the subsidy. Equation (17) implicitly determines the equilibrium subsidy rate, which in principle can be positive.

We then have:

**Proposition 3.** Subsidizing socialization of the masses, such as through state supported schools, is an alternative means of state control that leads to conformity in social norms.

The above analysis considers an equilibrium subsidy policy, the one that maximizes the elites' utility. The resulting outcome, therefore, while not necessarily Pareto optimal, constitutes a Pareto improvement over the benchmark case without subsidization.

It is also of interest to compare income redistribution with the imposition of social control under the threat of rebellion and subsidized socialization of the masses. The key difference between the two is in the rebellion technology. When it is ineffective, rebellion threats may not be credible even with a small amount of redistribution, so that the elites can get away by imposing high social norms of the

masses with a minimal compensation, thus favoring this outcome over subsidization. In contrast, when the rebellion technology is effective, a high level of redistribution may be called for even for an incremental increase of the level of social norms beyond the equilibrium choice of the masses; in this case, subsidization would be the preferred choice of the elites.

#### **4. Empirical Evidence: Historical Roots of Mass Education and State Building**

We now present two pieces of historical evidence in support of the above theory. While both explore the historical origins of the first public schooling systems and share the motivation of their introduction by rulers as a tool of social control, they also differ in some important for us dimensions, discussed below.

Our theory suggests that the elites may have interest in inducing the masses to adopt appropriate social norms and are willing to pursue social integration policies to achieve this goal. An obvious and historically important example of such a policy has been mass public education. While elements of locally provided public schooling had existed at least since the High Middle Ages, mass education in the context of state building started taking shape in the second half of 18<sup>th</sup> century in Europe. Notably, the first countries to introduce elements of universal schooling reforms nation-wide were Prussia and Austro-Hungary, both ruled by absolute monarchs. Scholars of the history of education were quick to point out that both countries were at that time less advanced than, say, England – where universal schooling was introduced much later. This, it is maintained, militates against the hypothesis that demand for skills driven by industrialization was the main driving force behind the first education reforms. Additionally, historians seem to agree that nation building efforts in the sense of language homogenization was not a primary target of these reforms and took place several decades later.<sup>23</sup> In 19-20<sup>th</sup> centuries mass education expanded elsewhere, in part through the diffusion process, which was particularly affected by Prussia's education system, as documented in Ramirez and Boli, 1987 – which is one important reason to pay a particularly careful attention to it. More generally, as argued in Lindert, 2004, while social spending was quite limited in early modern economies, the bulk of it was devoted to public education.

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<sup>23</sup> See Bandiera et al., 2019, Cinnirella and Schueler, 2018, Clots-Figueras and Masella, 2013, Green, 2013. Denmark formally introduced mass education even earlier, in 1739, (again, by an absolute ruler), but this initial attempt is generally considered unsuccessful.

We first briefly review the historical evolution of mass education systems, in both cases introduced by close inner circles around absolute monarchs, relating their development to this paper's thesis. While many details of the following accounts differ, they do share some important similarities, as will be made clear as we proceed.

### **Prussia**

Although conceived a decade or so beforehand, the first formal step to mass education in Prussia was taken in 1763, when Frederick the Great issued a decree, the "General Regulations for Village Schools" which made primary education mandatory for all Protestants in rural areas, whereby "... all children were taught to identify with the state and its goals and purposes rather than with local polities (estates, peasant communities, regions, etc.)." (cited from Ramirez and Boli, 1987, p. 5). Education was thought to be a priority in rural areas for several reasons. One was the perception that it was crucial for military performance: the Seven Years' War revealed a severe lack of loyal, literate, and obedient soldiers, who mostly came from a rural background. The second major reason had to do with structural changes that Prussia's economy and society were undergoing during that period. Prussia was very much an agricultural country at the time, with some 80 percent of the population employed in that sector. Frederick the Great was interested in peasants' wellbeing and productivity, and, consequently, he conceived and undertook initial steps to free up peasants from their obligations toward their lords. The first decree toward this end was issued in 1749, then reinforced with much vigor in 1763 – same year as mandatory schooling was introduced. But probably most important was the third motivation, which was to inculcate in peasantry moral values and political submissiveness as means of social control, as a part of the emerging new nexus of relationship between free peasantry and the state.<sup>24</sup>

The topics touched upon by the 1763 decree were compulsory attendance, school year, school day, school fees, discipline, teachers, course of study, methods, and school supervision and administration.<sup>25</sup> By the new law the principle of compulsory attendance was reasserted, the country schools were taken from under the care of the nobility and put under the protection and of the state; the supervision of the schools was to be exercised as before by the clergy, but in behalf of the

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<sup>24</sup> Indeed, "Current scholarship on Prussian education stresses compulsory schooling as a mechanism of social control to indoctrinate children in religion and political submissiveness." (Barkin, 1983).

<sup>25</sup> The term "compulsory education" in this context and that below is somewhat of a misnomer. Compliance was often low, and enforcement limited. Underfunding meant that incentives were not always sufficiently strong to overcome parents' resistance to send children to school thus forgoing their work in the fields or around the house.

state; the whole procedure of instruction was regulated by law, school hours, curricula, and schedules; textbooks had to be approved by the authorities thereafter (Cubberley, 1920, Van Horn Melton, 1988). Half of school time was devoted to religion to reflect the king's vision as articulated in a letter to one of his ministers, "It is well that the teachers in the country instruct the young in religion and morals...and educate them far enough that they neither steal nor murder." Schooling was seen not so much as a vehicle of skill formation as a tool of shaping loyal to the king and obedient citizens, its methods and organization were, therefore, no less important than the content.<sup>26</sup> Indeed, in one of the first comprehensive accounts of the Prussian school system, its scholar makes the following forceful point: "We believe, however, that a careful study of the Prussian school system will convince any unbiased reader that the Prussian citizen cannot be free to do and act for himself; that the Prussian is to a large measure enslaved through the medium of his school; that his learning, instead of making him his own master, forges the chain by which he is held in servitude; that the whole scheme of Prussian elementary education is shaped with the express purpose of making ninety-five out of every hundred citizens subservient to the ruling house and to the state." (Alexander, preface). In addition, mass education also served the purpose of integrating Catholic schools in some areas, particularly in Silesia and was part of a more general effort of the bureaucratic integration of Silesia into the Prussian state. It, therefore, also fulfilled the social control function of inculcating certain religious values – which public education sometimes fails to do, see Bazzi et al., 2022, for evidence of such a failure in the context of Indonesia's nation building.

While the 1763 decree is an important milestone in the history of mass education, its main significance lies with the declaration of intent. Specifically, one can learn from this attempt that the king had an interest in educating the masses and also his rationale for doing so. One can also develop an understanding of the goals of Prussia's education system and its intended structure. Yet, it should be recognized (and well discussed in, for example, Alexander, 1918) that its implementation was slow and encountered many obstacles. One such obstacle had to do with state finances: because of the lack of financial resources, teachers' salaries, hence, teachers' quality, were poor, school construction limited in scope, and parents were reluctant to embrace the reform. Consequently, it took at least several decades for mass education to take hold (Schluenes, 1979).

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<sup>26</sup> Cf., "It has been by the method of instruction, perhaps, more than by the content, that the German elementary school system has produced the tractable, easily managed citizen." (Alexander, 1918)

## Austria

Whereas Empress Maria Theresa was interested in educating her subjects already in 1740-50s, the reform decree on compulsory primary education, *Allgemeine Schulordnung* (General School Ordinance) was issued in 1774. In accordance with that law primary education became compulsory for all the children between 6 and 12 years old. School education took five days a week. Books and teaching methods were standardized. It was forbidden to hire those who did not have school graduation certificate as apprentices or servants. As in Prussia's case, a special attention was given to rural schools, where, alongside with the "three Rs" - reading, writing, arithmetic – religious and moral studies played a major role. The conceived motivation behind compulsory schooling, again, as in Prussia, was to integrate different and diverse parts of the empire into the state machinery.

Specifically, "(An) important function of compulsory schooling was to integrate the different parts of the empire into a coherent political sphere. Schooling meant that the political center of the empire established a new channel of communication to its subjects.<sup>27</sup> Compulsory education also directly exposed every subject to the power of the state. Through daily school experiences, the state became "real" for its inhabitants." (Viehhauser, 2019). Education reforms were part of a much bigger picture that was designed to reform the state apparatus. Specifically, as in the case of Prussia, much had to do with the changing relationships between the peasants – vast majority of the population – and their lords. In particular, the peasants' compulsory service for the lords (the so called *Robot*) became to be seen as one of the impediments for economic development.<sup>28</sup> More freedom for the peasants from their lords meant that the relationship between the former and the state became more direct. Peasants' norms and behaviors, therefore, became much more of a concern for the Empress and the state – which she perceived as being of her domain and responsibility.<sup>29</sup>

The increased emphasis on the rule of law – a part of state building efforts during that period – created the demand for disciplined and obedient populace in the context of a multiethnic empire.<sup>30</sup> Consequently, "The school act fostered a unified public and centrally organized elementary school

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<sup>27</sup> Yet, it is of interest to note that integration was aimed at the coordination and homogenization of moral and religious attitudes, not necessarily of other cultural habits; for example, local languages were used for school instruction.

<sup>28</sup> "The more unfree the subjects were—that was the insight—the less they could contribute to the state's prosperity with labor productivity, with taxes and contributions, and with healthy soldiers." (Viehhauser, 2019).

<sup>29</sup> Cf., "Maria Theresa saw public schooling as a way to improve discipline and morality, especially in the growing population of the lower classes." (Viehhauser, 2019)

<sup>30</sup> In fact, during that period, a significant share of the population could be labelled as proto-industrial workforce, however, still ill-disciplined and ignorant.

system both in terms of the bureaucratic functioning of the system and in pedagogical methodology. Teacher training programs, the publication and delivery of teaching materials...were homogeneous throughout the empire, which also contributed to the school act's centralizing effect." (Viehhauser, 2019). In any case, as in Prussia, mass education in Austria took place well before rapid industrialization, was not designed to address its needs, and pursued orthogonal objectives (see Cvrček, 2020, for forceful arguments in support of this claim).

As in the case of Prussia, in Austro-Hungary as well, practical implementation of the ideal of mass schooling had initially a very limited success, the main reason being financial constraints (Cvrček, 2020). The amount of resources the central government was able or willing to devote to schooling was just too small relative to the ambitious reform goals. As with Prussia, therefore, it took decades for the ideal to get fully realized, when the government finally channeled the needed resources and enhanced regulations.

### **Lessons**

One apparent common thread in both cases examined above that is clearly related to the paper's argument is that mass schooling efforts were initiated "from above" by absolute monarchs interested in economic and social development of their respective countries. Schooling was seen as an essential tool of social control – providing the peasants with a context for their independent activity in conjunction with giving them a modicum of freedom from their lords. The resulting more direct relationship between the state and the masses implied the need to educate the latter and to socialize them to social norms viewed as important by the elites, such as loyalty, obedience, law compliance, etc. These attitudes were deemed by the state as an essential part of state building.<sup>31</sup> There are, however, also important differences between the above two cases. Whereas in Prussia, military weakness was one important factor in the context of state building, it was relatively a minor consideration behind mass schooling in Austro-Hungary were main motivations had to do with other aspects of state functioning, such as the strengthening of state administration and control of ethnically diverse and growing population of peasants.

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<sup>31</sup> As argued in Green, 2013: "...the new systems for mass education signaled a decisive break with the voluntary and particularistic mode of medieval and early modern education, where learning was narrowly associated with specialized forms of clerical, craft and legal training, and existed merely as an extension of the corporate interests of the church, the town, the guild and the family. Public education embodied a new universalism which acknowledged that education was applicable to all groups in society and should serve a variety of social needs. The national systems were designed specifically to transcend the narrow particularism of earlier forms of learning. They were to serve the nation as a whole."

Further, cases where mass education serves the rulers' interests in inculcating loyalty and obedience are not confined to history as is illustrated in Cantoni et al., 2017, for the case of contemporary China's education system. Here, too, education is seen as a tool to inculcate values deemed useful by the state. All these cases are consistent with the exhibited formal model and provide a rationale for its conclusions. Our historical accounts also help differentiate the presented argument from other theories of mass education and redistribution. Thus, in Aghion et al., 2019, it is argued that military needs often prompt the expansion of mass education. Whereas this is supported by the Prussia case, in the case of Austro-Hungary military considerations did not play a major role behind education reforms. Further, the careful empirical analysis that links military rivalries and mass education reforms conducted in Aghion et al., 2019, covers the period 1830-2010 and, thus, does not pertain to either of these two earlier historically important cases. To the extent that military needs are, indeed, an important motivation behind education reforms, our model can be viewed as identifying a mechanism that relates norms of obedience and loyalty, inculcated through schooling, to military performance, thus benefitting the elites.

The two explored cases are also instrumental in differentiating the argument that mass education was introduced as the means of social control, as opposed to theories of fiscal redistribution where elites care about survival in power, see Acemoglu and Robinson, 2005. While both in Prussia and Austro-Hungary there were concerns about unruly peasantry with its potential detrimental and even destructive economic and social consequences, historical accounts are mute on a potential for insurrections that could threaten, not to mention upset, existing political order. Specifically, there were concerns that, in the emerging proto-industrial setting, crime and, more generally, behaviors out of line with social order may have adverse consequences. There was also apprehensiveness of the elites, especially in Austro-Hungary, of local insurgencies; indeed, peasant revolts in parts of the empire, notably, in Bohemia, did take place. Yet, in none of these instances there was a perceived threat to the existing political system.

## **5. Concluding Remarks**

We propose a tractable analytical framework designed to exhibit a potential interest of ruling elites to exercise social control by socializing the masses into their preferred social norms. In the absence of a suitable policy mechanism, socialization decisions by the masses fail to adequately consider their effect on the elites and are, therefore, socially suboptimal. The implication of this insight is that the elites may find it advantageous to implement social control policies to induce the masses to socialize

more properly. We consider several such policies, which incentivize the masses to socialize, possibly by providing them with material inducements. One important example of such a policy is public mass education, and we show how such a policy, by inducing the masses to socialize in exchange for material support, may be socially beneficial. We also show that the imposition of social control may go hand in hand with redistributive public spending, designed to appease the citizenry and alleviate insurrection threats by the masses.

We then provide detailed historical accounts of two first ever mass education systems, in Prussia and in Austria. These accounts are broadly consistent with the paper's arguments in indicating the potential rulers' motivation to exercise social control in the course of state building efforts to promote social and economic development. In both cases, public education was viewed as mainly serving the socialization function, not skill imparting, role as a vehicle of state building in the process of modernization.

The paper's thesis serves as a complement to a common view that public education emerged in response to popular demands, see Paglayan, 2021, for a further discussion of the relevant literature. This view may be highly relevant for some systems of mass education that took hold in late 19<sup>th</sup>-20<sup>th</sup> century but does not match the episodes of the historical origins of mass schooling in Europe, nor the proliferation of ideological curricula in some contemporary authoritarian regimes (Cantoni et al., 2017). Further, it is also consistent with another historical pattern, that social welfare policies were first introduced by European non-democratic rulers, something that is worth further examination in follow up research.

Our model can also be viewed as being complementary to another important tradition, exemplified in Aghion et al., 2019, that attributes the expansion of mass education to military needs. Specifically, it can be argued that the mechanism of instilling norms such as loyalty and obedience deemed valuable by elites that we identify are the ones that contribute to superior military performance.

We believe that the paper's central thesis – that some crucial aspects of existing policies are motivated by the goal of social control, with the view of cultivating social norms in a society – can constitute an important and potentially fruitful research agenda.

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## Appendix

### A1. Elites' Socialization

Suppose that the initial level of elites' norms is  $p_{E0} > p_{M0} > 0$  and that, like the masses, they engage in socialization of their children at the mental cost of  $F(p_{iE0}, p_{iE1}) = C(|p_{iE0} - p_{iE1}|)$ , their utilities being modified then as follows:

$$(A1) U_{iE0} = \log(c_{iE0}) + \log(y_{iE1}) - L_{E1} - C(|p_{iE0} - p_{iE1}|)$$

At equilibrium, socialization choices satisfy the following first order conditions:

$$(A2a) -C'(p_{M1} - p_{M0}) + 0.5\phi'(p_{E1} - p_{M1}) = 0$$

$$(A2b) -C'(p_{E0} - p_{E1}) + 0.5\phi'(p_{E1} - p_{M1}) = 0$$

This implies that there is a reciprocal movement of both population groups toward each other in terms of social norms. Because each group fails taking into account the effect of its individual choices on the other group, these socialization choices are socially suboptimal; a Pareto improvement can be obtained in each period by a binding agreement to incrementally enhance socialization efforts.

### A2. Public Goods

Suppose there is a public good,  $G$ , produced on the children's behalf using taxes levied on parents. Assuming a proportional tax rate  $\tau$ , the net income then is  $y_{j0}(1 - \tau)$ , and (assuming a one-for-one production technology)  $G = \tau Y$ , where  $Y$  is the average gross parental income. Parents value both children's income and the amount of the public good they consume – the altruistic warm glow motive. And parental utility weights on the public good are:

$$(A3) w_{Et} = (1 - L_{E1}), w_{Mt} = (1 - L_{iM1})$$

thus capturing the negative effect of the lack of cultural solidarity among children on parental utility derived from public goods.<sup>32</sup> The utility functions are then modified thus:

$$(A4a) U_{M0} = \log(c_{M0}) + \log(y_{M1}) - C(|p_{Mt} - p_{iM1}|) + w_{Mt} \log(G)$$

$$(A4b) U_{Et} = \log(c_{Et}) + \log(y_{E1}) + w_{Et} \log(G)$$

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<sup>32</sup> This could be rationalized, as in Alesina et al., 1999, by potential disagreements over the type of public goods to be produced.

It is easy to see that the desired level of the tax rate under these assumptions is

$$(A5) \tau = \frac{w_{jt}}{1 + w_{jt}}$$

Since individual socialization choices of the masses are  $w_{jt} = 1 - \phi(p_E - p_{M1})$ , this implies that the agreed upon tax rate is a decreasing function of the equilibrium cultural distance in the population, implying in turn a reduced amount of the public good. This goes to show the heterogeneity in cultural norms may have instrumental implications and reinforces the potential usefulness of social control as the indirect means to enhance public good provision. This result is consistent with empirical findings (see Alesina and La Ferrara, 2005, for a survey and Alesina et al., 1999, for a specific example of a study that exhibits such results) that document detrimental effect of cultural polarization on various performance measures and outcomes, including public good provision.