

# The Historical Roots of Corruption

## State Building, Economic Inequality, and Mass Education

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The problem of curbing corruption has concerned philosophers, social scientists, and policy makers since Aristotle.<sup>1</sup> While some countries seem to have been able to carry out substantial reductions of corruption, perceived levels of corruption remain high throughout much of the world. In the 2010 Corruption Perceptions Index from Transparency International (TI) measuring elites' evaluations of the honesty (or dishonesty) of political and economic institutions in their countries, 131 of the 178 nations fell below the midpoint on the 10-point scale of the index, with higher scores representing low corruption. Only twenty-three nations had scores of seven or higher, indicating that their governments are basically honest. In the Global Corruption Barometer 2013, which drew on public opinion surveys conducted by TI, Denmark was the only country [of the 107 surveyed] in which a majority of respondents did not indicate corruption to be a major problem.

We do not try to resolve the debate over what corruption means. Some recent analyses have defined corruption as behavior that is opposite to “ethical universalism”<sup>2</sup> or “impartiality” in the exercise of public power.<sup>3</sup> The conceptualization of corruption as officials turning “public goods” into private goods for their own benefit may be a debatable one, but the approach is useful for its comprehensiveness.<sup>4</sup>

Our central argument is that systemic corruption is deeply rooted in a state's underlying social and historical political structure. This argument is in line with a growing body of literature on historical institutionalism, which argues that historical conditions ranging from institutions to natural resources can have long-term effects on economic prosperity and democratization.<sup>5</sup> Our work is close to that of Glaeser et al.,<sup>6</sup> who show that countries with the largest primary school enrollments in 1900 had the greatest gross domestic product per capita a century later.

We find a similar dynamic between historical levels of education (in 1870) and contemporary (2010) levels of corruption across seventy-eight countries. The persistence of high levels of corruption in many countries suggests that its roots stem from

long-term factors rather than from more recent institutional changes. We focus on historical levels of education because:

- (1) Education has been one of the few factors that have been linked to lower levels of corruption;<sup>7</sup>
- (2) Education leads to other factors that promote honesty, such as generalized trust and a sense of identity with the entire country rather than with specific sects or groups;<sup>8</sup>
- (3) Higher levels of education lead to greater levels of wealth and equality for countries, both of which are linked to lower levels of corruption.<sup>9</sup>

The mean education level across countries has increased markedly (by six-fold, from 1870 to 2010). Yet the past bears a heavy hand: countries with the highest levels of education at the start of the series were also those at the top 140 years later ( $r = .76$ ). And those countries that depart most from this linear relationship between education in 1870 and 2010 were the countries with the highest levels of education in 1870.

We offer several predictions:

- (1) Greater historical levels of education lead to less perceived corruption in the present;
- (2) Historical levels of education matter more for contemporary corruption than do changes in education levels. The past matters more than increases in education do, although “catch up” matters. However, few countries have great increases in schooling levels;
- (3) Historical levels of education are more important than earlier wealth (GDP per capita) in shaping corruption. Wealth matters, but education is more important;
- (4) Early education levels are higher in developed countries than in former colonies, but even more critical is the background of the colonials.<sup>10</sup> Countries with large European populations had much higher levels of education than other (former) colonies. Settlers of European origin had expectations from the state similar to the people in their native countries, so their colonial “masters” promoted higher levels of education for them than for primarily indigenous populations;<sup>11</sup>
- (5) Countries with a more egalitarian distribution of land had higher levels of education in the late 19<sup>th</sup> century—and, in turn, countries with higher education in the past are more equal today—reflecting the importance of universal social welfare programs, such as universal education, for equality;<sup>12</sup>
- (6) Democracy has no impact on levels of corruption or on the levels of education. Democracies had neither higher levels of education in 1870 nor less perceived corruption in 2010. Our case studies suggest that political ambitions to increase state capacity did matter.
- (7) Finally, we estimate an instrumental variable regression in which we show that three factors—mean school years in 1870, change in school years over time, and contemporary press freedom—determine contemporary levels of corruption (while current per capita income, a contemporary measure of democratic

governance, and the net level of inequality are not significant predictors of corruption. In the first stage of the estimation, only former colonial status and the share of people with European origins are significant predictors of early education.

Our central argument is that universal education is a critical factor in reducing corruption. Countries can “catch up,” and changes in mean years of schooling also affect corruption, though not as much as historical levels. This line of causality is supported by other recent empirical work showing that universal public policies can reduce corruption.<sup>13</sup> In addition, human capital matters more than a country’s level of democracy 140 years ago.<sup>14</sup> There seems, also, to be a strong effect from the political elite’s ambitions to increase state capacity through educational reforms.

In our empirical analysis we combine quantitative and qualitative data. Some of the quantitative analyses are based upon small samples because many key variables for the period around 1870 (such as land inequality, GNP per capita, and share of Protestants) are only available for a small number of countries. Space dictates that we can only highlight a few features of our cases that are particularly important for our theoretical approach.

### **Theory: Why Universal Education Should Matter for Corruption?**

A number of different arguments have been put forward for why the introduction of universal education should have a positive impact for controlling corruption. Darden and Uslaner argue that universal education creates strong social bonds among different groups in a society. In turn, this makes cleavages based upon clientelism and corruption less likely.<sup>15</sup> The introduction of universal education creates a sense of citizenship and loyalty towards the state.<sup>16</sup> The American founders believed that universal education lay at the heart of the “republican virtue of an open and common system” for self-government.<sup>17</sup> More educated people are more likely to complain about corruption, even in authoritarian states.<sup>18</sup>

Second, the introduction of free universal education should lead to a “virtuous cycle” between widespread education and increased socio-economic equality. High levels of inequality enable the elite to undermine the legal and political institutions and use them for their own benefit. If inequality is high, the economic elite are likely to pursue socially harmful policies, since the legal, political, and regulatory systems will not hold them accountable.<sup>19</sup>

Third, access to education provided more people with the skills to find gainful employment so they did not have to rely on corrupt or clientelistic structures of power.<sup>20</sup> Over time, the educational inequalities between the rich and the poor in countries that established universal education were sharply reduced, though not eliminated.<sup>21</sup>

Fourth, more widespread education was critical for increasing gender equality. Nineteenth century school enrollments were highest where girls had access to education,

notably the United States, and lowest where girls were excluded.<sup>22</sup> Gender equality is strongly related to lower levels of corruption.<sup>23</sup>

Fifth, some have argued that a free press with a broad circulation is important for curbing corruption.<sup>24</sup> The effectiveness of a vigilant press for curbing corruption depends on widespread literacy. If most people cannot read, there will be fewer newspapers sold, and the popular knowledge about corruption and the demand for accountability and “clean government” will be lower.

We draw from these arguments a framework in which reforms such as free universal education are important signals from the state to its citizens, sending the message that the state serves more than the particularistic interests of the economic and political elite. The introduction of free universal education implies that the state is also an operation built on universal principles promoting a “common good.” Mungiu-Pippidi conceptualized such policies as a change from corrupt particularism to ethical universalism, and what North et al. call the transition of the state from a “limited access order” to an “open access order.”<sup>25</sup> However, the frameworks of Mungiu-Pippidi and North et al. lack an operational device that explains what type of institutional change will put a society on the path toward universalism/open-access order. We argue that the introduction of universal education can serve as such a device.

## **Religion, Colonialism, and Equality**

In Western Europe, North America, Australia, and New Zealand, the movement for widespread education had an important ally in expanding education: protestant churches wanted people to be educated so that they could read the Bible. In contrast, the Catholic Church generally feared that literacy might challenge its authority.<sup>26</sup> Education empowered people not just to read the Bible, but to excel in other areas of learning. Protestant countries, largely because of their higher levels of education, had lower levels of land inequality than did Catholic countries in the nineteenth century.<sup>27</sup>

In most colonial settings, local political communities did not have the resources to create mass education. Meanwhile, colonial powers did little to advance the lives of the people they ruled. Local leaders in colonies and weak states would finance schools for a handful of young people (and rarely for girls), until the lands became home to people from the colonial powers. Below, we show that it was the Protestant share of the population in independent countries and the European share of the population in colonies that shaped school enrollments.

It was not just strong states that promoted public education. Countries with more equal distributions of land had citizenries who could make greater demands on the state, notably for education. It was economic equality, not political equality, which led to greater literacy.<sup>28</sup> As we show below, democracy did not lead to greater levels of education. Wealthier countries were more likely to have higher levels of education, but the level of affluence mattered less than equality.

## **The Data and the Results**

We first examine the roots of contemporary corruption by analyzing its linkages with educational attainment, inequality, and democratization in the nineteenth century. Our measure of corruption is the widely used Corruption Perceptions Index (CPI) of Transparency International for 2010, which is based on expert surveys.<sup>29</sup> We cannot measure corruption directly, so we rely upon a measure of perceived corruption. The most corrupt countries have the lowest scores on the 10-point scale. We use new data sets on historical levels of education developed by Morrison and Murtin and on historical income levels by Bourginon and Morrison, as well as existing data on democratization, percent family farms, and percent Protestant.<sup>30</sup> 1870 is the earliest date for which data about mean levels of schooling are available for a reasonably large set of countries ( $n=78$ ). Some measures—gross national product per capita, the level of democracy, and family farm percentage—are only available for a small number of countries so we estimate ordinary least squares regressions for equations in which we include these measures. We estimate models for corruption and for mean school years separately and then use an instrumental variable regression for corruption. The exogenous variables predicting levels of education are colonial status and European share of the population.

More highly corrupt countries are also less likely to invest in higher education.<sup>31</sup> However, investigating this is outside our agenda—and data. It makes no sense to “predict” 1870 education levels from contemporary corruption perceptions, and there are no measures of corruption for the nineteenth century.

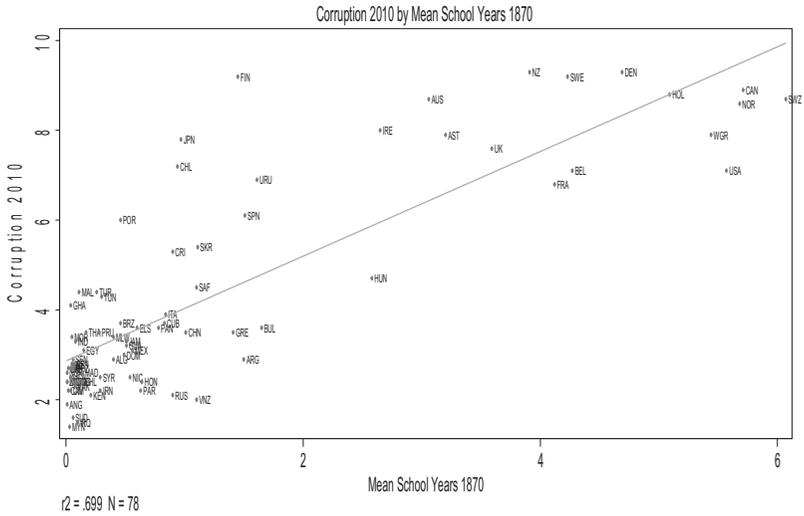
We did examine alternative predictors of education using measures of factor endowments (climates, farm animals, and agricultural outputs)<sup>32</sup> and early technology.<sup>33</sup> None were significant. Secondly, we present qualitative evidence about the importance of state-building. Since there are no numerical measures of state power or bureaucratic quality available for the nineteenth century, we depend upon qualitative evidence for this part of the analysis.

Our central result is a strong correlation between the mean number of years of schooling in a country in 1870 and its level of corruption in 2010 (see Figure 1). Moving from the fewest years of education (.01 for four African nations) to the highest (6.07 in Switzerland) leads to an increase in the CPI of 7.0, which is the difference between Angola, the fourth most corrupt country, and Canada, the fifth least corrupt nation.

The level of education in 1870 shapes corruption far more than does GNP per capita in the same year ( $r^2 = .542$ ). The mean number of school years and wealth are strongly related ( $r^2 = .604$ ,  $N = 46$ ), but one is not a proxy for the other. In the regression, the most educated country in 1870 is 4.5 units less corrupt than the least corrupt country, while the wealthiest state is 2.5 units less corrupt than the poorest (see Table 1).

Is it all about long-term effects? Mostly, though not completely. Countries with high levels of education in 2010 also had more educated publics 140 years ago ( $r^2 = .578$ ). Sixteen of the countries with the greatest increase in mean school years

**Figure 1** Corruption 2010 by Mean School Years 1870



**Table 1** Regression of 2010 Corruption by 1870 Mean School Years and GNP Per Capita

Variable	Coefficient	Standard Error	t Ratio
Mean School Years 1870	.738**	.174	4.22
Gross National Product Per Capita 1870	.001*	.0004	2.07
Constant	2.710**	.422	6.42

$R^2 = .677$  R.M.S.E. = 1.433  $N = 46$ . \*\*  $p < .01$  \*  $p < .05$ .

were among the twenty most educated countries in 1870; seventeen of the twenty countries with the smallest growth in education were among the least educated third in 1870.

Our regression predicting 2010 levels of corruption from both 1870 education levels and changes in schooling over 140 years shows that both are significant.<sup>34</sup> The impact of historical levels of education is 2.5 times that of change in education (6.36 units of the CPI corruption index compared to 2.71; t ratios of 12.23 and 3.88, respectively;  $N = 78$ ,  $R^2 = .750$ ). There is evidence of a catch-up effect: countries with the fewest years of schooling in 1870 (less than two) had stronger growth in education levels; however, even here, the countries that were at the “top of the bottom” experienced the greatest growth rates in schooling ( $r^2 = .376$ ). History matters: the simple

correlation between contemporary corruption and levels of education in 1870 is higher ( $r = .836$ ) than between corruption and contemporary mean school years ( $r = .760$ ).

We re-estimate this model including the Polity IV measure of democracy in 1870. The sample size is reduced to forty countries ( $R^2 = .734$ ). The coefficient for democracy is insignificant; going from the least to the most democratic nation increases transparency by mere .27 points on the ten-point scale, compared to 5.95 and 2.96 for mean level of education and education change, respectively. This is not an issue of collinearity. The correlation between mean school years and democracy in 1870 is just .435, and the simple  $r$  between democracy in 1870 and corruption in 2010 is only .421. The small effect may reflect the fact that there were few democratic regimes in the latter part of the nineteenth century. Green provides qualitative support: "One of the great ironies of educational history is that the more 'democratic' nineteenth-century powers like France, England, and the USA ... were forced to look to the autocratic German states for examples of educational reforms to adopt at home."<sup>35</sup>

### **Western Europe: Mass Education and the Need for State-Building**

The question of why and when universal and free mass education was established in Europe during the nineteenth century comes with a number of surprises. One is that the most economically developed country, England, was a latecomer in the process. In 1806, Prussia became the first country to introduce universal mass education, almost a hundred years before England did.

Green shows that sociological theories that stress the importance of urbanization, working-life conditions, and changing family structures cannot explain why France and Prussia (and Denmark and Sweden) developed universal mass schooling well before England.<sup>36</sup> Instead, Green, as well as Boli and Weber, point to the political elite's perceived need for state-building and national unity as the main driving force.<sup>37</sup> Prussia, Sweden, and France developed universal mass education as a means to create "new citizens" with a strong national identity, which, in its turn, was seen as needed for effective state building. The French system of mass education was established not only to make "peasants into Frenchmen," but, more importantly, to teach them "national and patriotic sentiments."<sup>38</sup> As Green argues, 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.<sup>39</sup>

The new systems of mass education that arose in Denmark, France, Prussia, and Sweden were built on new principles that citizenship should be based on universality and

egalitarianism; one of the most striking aspects of the universalism in the law that established free mass education in Sweden in 1842 was that boys and girls would be treated equally in the new system, and that they were to be taught together.<sup>40</sup>

Can particular historical cases of the development of mass education be traced to contemporary levels of corruption? For example, Germany today has a relatively low level of corruption, while Italy experiences the opposite. Can this huge difference in the levels of corruption between Germany and Italy be traced back to variations in access to mass education during the second half of the nineteenth century? The answer seems to be a resounding yes.

Ramirez and Boli argue that nation building was the primary reason Prussia introduced mass education.<sup>41</sup> Schooling was a means “to construct a unified national polity, where individuals would identify themselves with the nation.”<sup>42</sup> Sponsoring mass schooling was a strategy for the state to avoid losing power in the interstate system because it encouraged “national revitalization.” Prussia, despite its strong central bureaucracy, was a “state without a nation”: its polity was dominated by local interests until in 1763 Frederick II wrote the famous “General Regulations for Village Schools” directive. Through state-directed education “... all children were taught to identify with the state and its goals and purposes rather than with local polities (estates, peasant communities, regions, etc.).”<sup>43</sup>

In 1806 Napoleon triumphed over Prussia. The humiliation the Treaty of Tilsit provoked German patriotism, which would be fostered by mass education. According to the lectures of Fichte “...universal, state-directed, compulsory education would teach all Germans to be good Germans and would prepare them to play whatever role—military, economic, political—fell to them in helping the state reassert Prussian power.”<sup>44</sup> A Bureau of Education was established, and ten years later a department of education was created. Between the years 1817 and 1825 a state administration of education was established, and taxes were imposed in order to finance the school system.<sup>45</sup> In Prussia, Denmark, France, and Sweden the introduction of universal education reforms was a response to a sense of national crisis seen to stem from a fragmented social order.<sup>46</sup>

A different case is Italy, which introduced a law about universal education in 1859. Italy was not a unified nation state; it had strong regional differences. The implementation of the school reform was much more efficient in the northern regions whereas little was done in the southern regions before 1900. According to Smith:

Virtually, the whole southern agricultural population was illiterate. Yet it was impossible to apply the [...] law of 1859 which had specified two years' compulsory education, because parents would not have co-operated even if the teachers and schools could have been found.<sup>47</sup>

Putnam found great regional differences in institutional effectiveness between northern and southern Italy.<sup>48</sup> These regional differences in corruption and the quality of government institutions persist.<sup>49</sup> As late as 1911, half of the Italian population was illiterate.<sup>50</sup> There was a lasting impact of what took place in national systems of education during

the late nineteenth century and contemporary levels of “good governance” not only among states, but also among regions within states.

The Protestant churches in Western Europe supported public education more than the Catholic churches. Before the twentieth century regions with more Protestants had higher literacy rates.<sup>51</sup> Scandinavia, lowland Scotland, and Iceland were all very poor and yet had broad-based literacy already by the early nineteenth century. The Protestant churches funded religiously financed literacy campaigns and supported public education.

The Catholic Church invested in education, but only where it faced competition (such as in Ireland, North America, and in the British colonies) or when facing a secularist state such as France. Where competition was lacking—in Southern Italy, Spain, and Portugal—education was not a priority. The Catholic Church also feared literacy as this was seen as a means to a Protestant reformation.<sup>52</sup>

In England and the Nordic countries, the church became an official part of the state. This made it easier for these states to use the schools that were run by the local parishes or heavily influenced by the clergy as instruments for state building, not least by influencing the content in disciplines such as history and literature.<sup>53</sup> While the clergy ran the schools, the financing came from the state (or was mandated for the local municipalities by law). Universal mass education in Denmark, France, Prussia, and Sweden during the nineteenth century should not be seen as a mere extension of earlier forms of church-dominated education.<sup>54</sup> Instead, as Green argues: “What characterized the national education system was its ‘universality’ and specific orientation towards the secular needs of the state and civil society.”<sup>55</sup> As a signal of “universalism” and “open access,” free mass education was introduced several decades before universal welfare state programs such as public pensions or health insurance. The underlying mechanism behind Weber’s Protestant ethic, Becker and Woessmann argue, is not the religious message of hard work, but the greater literacy where Protestantism was dominant.<sup>56</sup>

### **Fewer Educational Opportunities: Outside the Independent Nations**

Outside the developed Western countries, our data set includes 51 present or former colonies (not including the United States, Canada, Australia, or New Zealand) and nine independent nations that were not as developed in the late 19<sup>th</sup> century as the Western powers. Two of the independent countries (Bulgaria and Hungary) had education levels just below those in Western Europe. China, Japan, Russia, and South Korea) had schooling comparable to many former Spanish colonies, and a third group (Iran, Thailand, and Turkey) in the bottom third of all nations. For contemporary or former colonies in 1870,<sup>57</sup> the mean level of education was .42, less than a half a year of schooling, compared to 2.88 for the developed and independent nations. The publics in only five Western countries (Portugal, Italy, Japan, Greece, and Finland, in descending order) had average schooling less than half a year in 1870, while only two (former) colonies (Argentina and Uruguay) had publics with that much education.. The nine independent nations averaged 1.2 years of education in 1870, still well below levels enjoyed in Western

Europe and the four English-speaking countries outside Europe (3.68) but greater than the former colonies of Britain (.99), and Spain and Portugal (.66).

The major powers ruling colonies in our sample were Great Britain (nineteen countries) and France (nine countries). The British and French did little to provide education for their colonies, which had .17 and .11 years of schooling in 1870, respectively.

Throughout the British and French colonies, the void unfilled by state-provided education was left to missionaries, settlers, or local authorities.<sup>58</sup> Each had limited resources and was often less committed to educating native populations.<sup>59</sup>

Indian schools were designed to “Anglicize” the population. All instruction was in English.<sup>60</sup> In North Africa, French colonialists were met with resistance, as people often refused to send their children to the handful of schools that emphasized French language and culture and did not permit any instruction in Islam.<sup>61</sup> Spanish colonialism—and to a lesser degree Portuguese rule in Brazil—placed a greater emphasis on providing education (and other services) to the native population than did that of the British and the French. Premo argued that Spanish colonial rule in Peru emphasized education: “[Schools] served as social workshops in which early modern Iberian culture, religion, and political ideologies were reproduced among a colonial populace, and particularly a young colonial populace.”<sup>62</sup> The Spanish parliament (Cortes) decreed that universal free public education be made available to every community in Cuba with at least one hundred residents; twenty-one years later a plan was adopted shifting all education from private to public control.<sup>63</sup>

Uruguayans were the most educated Latin American population in 1870, with an average of 1.61 years of schooling. Yet, “...the small aboriginal population had been almost liquidated long before [1850] and a strong immigration from Europe was taking place.”<sup>64</sup> Where the indigenous population remained dominant, the Spanish colonial regime exploited indigenous labor and provided much lower levels of education.

In many independent countries outside the West (such as Turkey, China, Japan, and Korea) the state did not assume the responsibility of providing education. Only a small share of the population received education provided by the military, religious authorities, or local nobles.<sup>65</sup> Hungary and Bulgaria, with the highest level of education among the independent nations, had state-supported secular education by the middle of the nineteenth century.<sup>66</sup>

The share of Europeans in a country’s population matters for education because: (1) Europeans took the lead in the provision of widespread schooling; and (2) public education outside Europe largely took place where colonial powers permitted—and encouraged—migration from Europe. Engerman and Sokoloff argue that colonial powers in the Americas extracted resources when they were available—either coercing natives to mine gold and silver or forcing slaves to work the large farms producing sugar and cotton.<sup>67</sup> Immigration was sharply restricted in these colonies. Where there were sparse native populations, the colonial powers encouraged immigration from Europe, as in the United States, Canada, Australia, New Zealand, Argentina, Uruguay, and, to a lesser extent, Chile. Diseases contracted from contact with European settlers and climates better suited to small-scale farming both led to lower shares of indigenous populations.<sup>68</sup>

Easterly and Levine show that the European share of the population at colonization explains more than half of the variance of contemporary per capita income across 112 countries; the effect, they posit, reflects historical levels of education.<sup>69</sup> Outside the New World, there were few European immigrants (and little public education).

### **The Roots of Education Levels**

To account for the development of education across nations, we consider the effects of equality, democratization, colonial history, Protestant population, and European background. We use Vanhanen's estimates of the percent of family farms in a country in 1868, the share of all farms that are owned and operated by small farmers (with no more than four employees),<sup>70</sup> as our indicator of equality. Boix argues: "The percentage of family farms captures the degree of concentration and therefore inequality in the ownership of land."<sup>71</sup> Easterly holds that "...the family farm measure from earlier dates since 1858 is a good predictor of inequality today."<sup>72</sup>

We report the regressions for all countries, independent nations, and (former) colonies in Tables A1, A2, and A3 in the appendix. These estimations are based upon very small samples (thirty-five overall; twenty-one independent countries and fourteen colonies), largely because family farm percentage is only available for these thirty-five cases. We, therefore, urge caution in interpreting them. Nevertheless, the story they tell confirms our expectations.

There are two critical differences between current or former colonies and independent states. First, the Protestant share of the population led to higher levels of education only for independent states. Second, the European population share is the most important factor shaping education levels in 1870 in colonies but is insignificant in independent states. The bivariate correlations for larger sample sizes confirm these estimates. The Protestant share is strongly related to 1870 education levels for independent states ( $r = .733$ ,  $N = 27$ ), but not for colonies ( $r = .182$ ,  $N = 51$ ). Education and the European share are strongly linked in present and former colonies ( $N = 49$ ,  $r = .857$ ).

Higher levels of democracy do not matter in either colonies or independent states. Land inequality is significant in both, but more in independent states, largely because there was less variance in both land inequality and mean school years for colonies.

Countries with a larger share of European stock also were more equal ( $r^2 = .235$ ). Our story of state capacity in Northern Europe above fits the story of equality as well. While Prussia had relatively low levels of land and income inequality (see above), Britain had a highly unequal distribution of land: only 5 percent of farms were owned by individual families in 1868, a level comparable to most Latin American countries and far lower than their former colonies in North America, where 60 percent of farms in the United States and 63 percent in Canada were family owned (ranking only below Norway). Inequality was lower when the Protestant share of populations was greater ( $r^2 = .410$ ). The factors shaping the provision of education—and ultimately low corruption—were part of a larger syndrome.

Finally, we estimate an instrumental variable model for contemporary corruption with mean levels of education in 1870 endogenous (see Table 2). The instruments for mean education levels are the Protestant share of the population, the European share, and colonial status. All are significant at  $p < .01$ .<sup>73</sup> The model includes the instrument for mean school years, mean school year change, gross national product per capita adjusted for purchasing power parity (for 2000 from the Penn World Tables), the Polity IV democracy index, Solt’s net Gini index, and Freedom House’s Press Freedom index for 2002 from Daniel Treisman’s Decentralization data set.<sup>74</sup>

In the regression for sixty-seven countries, wealth, inequality, and democracy are not significant. What matters most are historical levels of education and, to a lesser extent, change in education levels.

The estimated effect of the mean school year instrument on corruption perceptions in 2010 is 13.7, which is greater than the full range of the CPI. For the mean school year measure without instrumentation, the estimated effect is 4.6, which amounts to the difference between Denmark (the least corrupt country) and Hungary. For mean school year change, the effect is half as great (2.3). For press freedom it is 2.88, it is the difference between Denmark and France. But press freedom may not be a simple institutional solution to corruption. Färldigh shows that press freedom reduces corruption only in “...well-established electoral democracies.”<sup>75</sup> So the belief that one can engineer lower corruption may be misplaced. Freedom of the press is strongly related to historical levels of education ( $r = -.648$  and  $-.807$  with the instrument). Press freedom can help combat corruption, but the power of the press depends upon a literate public.

Our results extend Glaeser et al.,<sup>76</sup> but differ from those of Acemoglu and Robinson, who argue that English colonial rule led to better contemporary outcomes than did Spanish colonization.<sup>77</sup> Spanish rule was more based on “looting, and gold and silver lust” while English colonies were less extractive.<sup>78</sup> We find that this dichotomy is too simplistic. Nor does the Protestant-Catholic religious distinction matter in the colonies. Spanish and English colonies with large European populations had high levels of

**Table 2** Instrumental Variable Regression of Corruption Perceptions 2010

Variable	Coefficient	Standard Error	t Ratio
Mean School Years 1870	.760***	.144	5.26
Mean School Year Change 1870–2010	.211***	.063	3.35
Press Freedom	-.040***	.012	-3.34
GNP per capita PPP (x 10000)	.066	.042	1.58
Democracy Polity IV	-.091	.075	-1.22
Net Gini 2004 Solt	-.026	.020	-1.31
Constant	5.225***	1.212	4.31

$R^2 = .813$  R.M.S.E. = 1.02 N = 67.

\*\*\*  $p < .0001$ .

education, while territories with few colonials (including English dependencies in Africa and Asia) lagged behind. Nor is there evidence that democracy led either to greater education in the 1870s or to less corruption today.

### **Is Path Dependence Forever?**

Our answer is: “not necessarily”; the past is not set in stone. Three states with middle-to-low levels of education in 1870 showed the largest increases over time: Finland (10.6 year increase), South Korea (11.8), and Japan (12.2). Contemporary Finland ranks among the four very least corrupt countries at 9.2. Japan is tied for seventeenth and South Korea is tied for thirty-ninth place. These are all much higher transparency scores than we would have expected based upon their 1870 levels of education.

These three “deviant” cases increased mass education in a way that fits our theory about state capacity and equality. The movement for universal education in Korea first came as a reaction against the Japanese occupation that ended in 1945. The Japanese rule limited access to education in Korea, but reform attempts were put aside when China intervened on behalf of North Korea and started the Korean War in 1949. When the war ended in 1954, education spending soared as the political elite saw education as the key to economic development. Free compulsory primary education was adopted in 1954 and was achieved by 1959.

An expanded public education system, including free textbooks, was implemented by 1971. In 1968, the state replaced the comprehensive examination system for middle school admission with a more egalitarian lottery. By 1980, 96 percent of students in primary schools went on to middle schools and 85 percent of middle-school graduates went to high school.<sup>79</sup> The trigger events for mass educational policies were the need for state building coming from the threats from the conflict with North Korea.<sup>80</sup>

Japan’s rise in education levels was more directly a response to external events. After Japan lost World War II, the United States Occupation Government drew up a new constitution to create a liberal democracy. For the United States Education Mission to Japan, twenty-seven prominent scholars had the task of “develop[ing] a new education appropriate to a liberal democratic state”.<sup>81</sup> The Occupation Government dictated that Japanese schools eliminate militarist and nationalist materials. Schools emphasized equal opportunity for all students and adopted a learning style in which children of different abilities and personalities worked together in small groups to promote equality. In the 1960s and 1970s, a public movement of “high schooling for everyone who desires it” lay behind a strong increase in mean school years. The public was involved, but the initial push toward more equality in schooling came from an external source, the United States.<sup>82</sup>

The Finnish history is a combination of external threat, internal strife, and an ambition, after independence from Russia in 1917, to orient the country towards Western Europe and especially towards the other Nordic countries. Finland had been an integrated part of Sweden for 600 years until 1809 when Sweden’s defeat against Russia

meant that Finland came under Russian rule. However, Finland never became an integrated part of the Russian empire but managed to keep some autonomy and the right to follow its own (that is, the Swedish) laws as a Grand Duchy.<sup>83</sup> Swedish was then the “official” language, mostly spoken by the ruling elite. From the 1860s onwards, a strong Finnish nationalist movement appeared, very much centered on the language issue. In 1892 the Finnish language, spoken by peasants and workers, achieved equal legal status with Swedish. Since Swedish and Finnish are completely different languages, the language issue delayed the introduction of broad-based schooling.<sup>84</sup>

After declaring independence from Russia in 1917, class-based political conflicts escalated into a gruesome civil war in 1918.<sup>85</sup> The lack of full nationhood until 1917, the difficult language question, and the civil war all served to delay the introduction of mass education in Finland compared to the other Western European and especially Nordic countries. The rapid increase of education during the 1920s and 1930s can be explained by a combination of the threat felt from the Soviet Union and a strong willingness to orient the country to Western Europe and the Scandinavian countries.

Thus, our three “deviant” cases follow the pattern of our theoretical model stressing the expansion of mass education as a result of increased ambitions for state building following a perceived threat to the nation.<sup>86</sup> This is consistent with Uslaner’s account of curbing corruption in Hong Kong, Singapore, and Botswana—Hong Kong and Singapore faced perils from China and Botswana from South Africa—and with the account of how Napoleon’s conquest of Prussia led Ferdinand II to promote education.<sup>87</sup>

## **Conclusion**

The historical records show that the need for state building and increased state capacity are key factors in the widespread provision of public education. State capacity depends upon citizens who are more educated and more loyal to the state. Before free universal education was established, for most citizens the state was an organization that was dangerous and should be distrusted and avoided. It took people’s money and sons to fight wars, it catered mainly to the interests of small elite, and it usually did not provide much protection or other forms of public goods to ordinary people.

Establishing free universal education was often the first public policy provided in an impartial and equal manner.<sup>88</sup> Free broad based education served as a signal, sending a message that the state was not only, or primarily, a “private good” for elite domination, but also catered to the principles of “universalism” and “open access.”

We show that state capacity is necessary but not sufficient to lead to the provision of public goods for a large share of the citizenry. Many strong states fare poorly in providing public goods. Strong states will provide collective goods when there is strong demand from citizens, and this will not happen when ordinary people have few resources. High levels of inequality mean that states are little more than a means of extracting taxes to support the ruling elite. A strong state must attract the loyalty of citizens who perceive that they have reasons to be loyal.

Religion is also important, but in a very specific way. When religious institutions worked with the state in the nineteenth century, as most European Protestant churches did, education flourished. When they themselves were the primary organization for providing education, they could not muster the necessary resources—or in some cases the interest—in providing universal education.

Policies for increased state capacity, and not democratization, initiated regimes to launch reforms for mass education. Prussia was the first country to launch free universal education, almost a century before the United Kingdom. While Prussia is often characterized as autocratic, semi-feudal, and militaristic, newer results point to both high levels of family farms in the late nineteenth century and comparatively low Gini indices of economic inequality.<sup>89</sup>

Finally, our analysis shows that state capacity is not in itself a sufficient explanation for the development of widespread education. States that expended substantial resources to educate their citizens had the economic capacity to do so. Yet more equal distributions of income mattered more than wealth. The high levels of inequality in the countries that were colonies in the late nineteenth century persisted over long periods of time, into the present. Even as these countries have democratized, they have not caught up to the more liberal countries in terms of levels of education, and they remain mired in high levels of corruption.

## NOTES

This is our second co-authored paper, and in this paper we have reversed the order of authorship. Our contributions are equal. We would like to thank Sofia Jansson for excellent assistance on the section on religion and education in this article and David Sartorius for very helpful comments on early education in Latin America. We also thank Christian Bjørnskov, Michelle D'Arcy, Ase Berit Grodeland, Robert Klitgaard, Alex Lascaux, Fabrice Murtin, Katarina Ott, and Aleksandar Stulhofer for helpful comments.

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**Appendix**

**Table A1** Mean School Years 1870 by Country

Country	Mean School Years 1870
Algeria	0.4
Angola	0.01
Argentina	1.5
Australia	3.06
Austria	3.2
Bangladesh	0.08
Belgium	4.27
Benin	0.07
Brazil	0.46
Bulgaria	1.65
Cameroon	0.02
Canada	5.71
Chile	0.94
China	1.01
Costa Rica	0.9
Cote d'Ivoire	0.04
Cuba	0.83
Denmark	4.69
Dominican Republic	0.49
Egypt	0.15
El Salvador	0.6
Ethiopia	0.02
Finland	1.45
Germany	5.44
France	4.12
Ghana	0.04
Greece	1.41
Guatemala	0.51
Honduras	0.64
Hungary	2.58
India	0.08
Indonesia	0.05
Iran	0.29
Iraq	0.1
Ireland	2.65
Italy	0.84
Jamaica	0.51
Japan	0.97
Kenya	0.21
Madagascar	0.14

Continued on next page.

**Table A1** Continued

Country	Mean School Years 1870
Malawi	0.4
Malaysia	0.11
Mali	0.04
Mexico	0.56
Morocco	0.05
Mozambique	0.06
Myanmar	0.03
Netherlands	5.09
New Zealand	3.91
Nicaragua	0.54
Niger	0.01
Nigeria	0.01
Norway	5.68
Pakistan	0.08
Panama	0.78
Paraguay	0.63
Peru	0.28
Philippines	0.14
Portugal	0.46
Russia	0.9
Senegal	0.06
Sierra Leone	0.11
South Africa	1.1
South Korea	1.11
Spain	1.51
Sudan	0.06
Sweden	4.23
Switzerland	6.07
Syria	0.29
Thailand	0.17
Tunisia	0.3
Turkey	0.26
UK	3.59
USA	5.57
Uganda	0.04
Uruguay	1.61
Venezuela	1.1
Zimbabwe	0.01

**Table A2** Regression for Mean School Years 1870

	<b>Coefficient</b>	<b>Standard Error</b>	<b>t Ratio</b>
Protestant % 1980	.025**	.009	2.90
European Share 1900	.016**	.006	2.56
Family farm % 1868	.039**	.013	2.90
Democracy Polity IV	.065	.102	.63
Colony (present or former)	-.061	.435	-.14
Constant	-.540	.836	-.65

R<sup>2</sup> = .798 R.M.S.E. = .960 N = 35.  
 \*\* p < .01.

**Table A3** Regression for Mean School Years 1870 by State Status

	<b>Independent States</b>		<b>Colonies/Formers Colonies</b>	
	<b>b</b>	<b>S.E.</b>	<b>b</b>	<b>S.E.</b>
Protestant % 1980	.023*	.011	-.088	.071
European Share 1900	.013	.009	.023***	.007
Family farm % 1868	.044**	.019	.034*	.016
Democracy Polity IV	.118	.147	-.074	.092
Constant	-.934	1.186	.648	.585

Independent States: R<sup>2</sup> = .737 R.M.S.E. = 1.239 N = 21.  
 Colonies: R<sup>2</sup> = .656 R.M.S.E. = .279 N = 14.  
 \*\*\* p < .0001 \*\* p < .01 \* p < .05.