

## ARE STRONG STATES KEY TO REDUCING VIOLENCE? A TEST OF PINKER

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STEVEN PINKER CLAIMS in *The Better Angels of Our Nature* (2011) that nearly all social-scientific evidence tells us violence is declining. This paper makes no claims against Pinker's main argument; criticisms of it having been addressed elsewhere (Pinker 2015). However, one secondary hypothesis Pinker puts forward is that the development of strong states was a key factor in the decline of violence (2011, 42). Summarizing his reading of the evidence, Pinker writes, "[t]he reduction of homicide by government control is so obvious to anthropologists that they seldom document it with numbers... It goes without saying that people that have been brought under the jurisdiction of a government will not fight as much, so they are simply excluded from studies in indigenous societies" (2011, 55–56). While Pinker cites one survey of traditional societies that finds that before World War I such societies were frequently more violent,<sup>1</sup> he otherwise deems the connection between the rise of states and the decline of violence obvious and uncontroversial.

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<sup>1</sup> According to the authors of the survey, this measure of violence is meant to proxy for "the influence of colonialism, inclusion of the society in world market economy, and other forces that should directly affect the ability of kin groups to act as vengeance-seeking units" (Ericksen and Horton 1992, 71).

Pinker's hypothesis that the development of strong states played an important role in reducing violence can be addressed using the same types of simple empirical tests found elsewhere in his book. The closest such test Pinker provides is reproduced as Figure 1, where he shows, drawing from a variety of sources, that even the most peaceful indigenous (nonstate) societies had homicide rates as high as the ten largest American cities in 1990 (which were much higher than they have been recently).

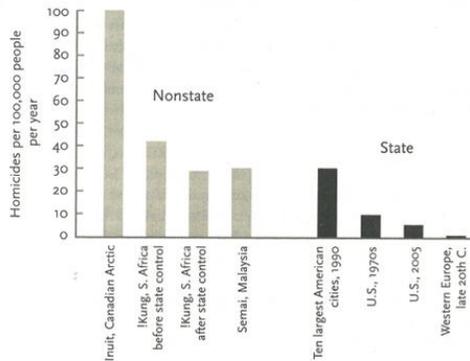


FIGURE 2-4. Homicide rates in the least violent nonstate societies compared to state societies

Sources: !Kung and Central Arctic Inuit: Gat, 2006; Lee, 1982; Semai: Knauft, 1987; Ten largest U.S. cities: Zimring, 2007, p. 140; United States: FBI Uniform Crime Reports; see note 73; Western Europe (approximation): World Health Organization; see note 66 to chap. 3, p. 701.

Figure 1: Homicide rates in the least violent nonstate societies compared to state societies.

On the other hand, some scholars have argued that the market is as effective as or more effective than states at providing public goods such as criminal justice (e.g., Peden 1977; Friedman 1979; Leeson 2007). Elsewhere in his book, Pinker provides myriad scatterplots and trend lines to further his arguments.<sup>2</sup> The purpose of this paper is to surpass the quality of the comparison Pinker makes between state and nonstate societies to bring the quality to that of the other comparisons of his book. I run a series of simple regressions using measures of *degrees* of government as the explanatory variable to explain country-level homicide rates in developing countries. I then modestly improve on the quality of the empirical test by including certain control variables. While these parsimonious specifications are weak tests of causality, they are strictly better tools than trend lines or scatterplots.<sup>3</sup>

<sup>2</sup> To be fair, while doing so he also cites other scholars who perform more sophisticated analyses.

<sup>3</sup> Pinker's primary hypothesis relates the passing of time with declines in violence. The empirical evidence that takes the form described above is similar to Figure 1 (though

To perform this analysis, I use the World Bank Development Indicators' international homicides (per 100,000 people) data for lower-income countries (from 2012, 2011, or 2010, using the most recent available). I use these data because homicide rates in less developed countries reflect the factors led to elevated homicide rates in the now-developed world prior to the period when rates declined. If a single variable—the rise of the state—contributed to the decline in violence as much as Pinker argues, such a relationship should also be present to at least some extent cross-sectionally in developing countries in the modern world. Although the modern world in less developed countries differs greatly from, for example, Europe two centuries ago, this approach allows for the execution of simple econometric methods that are suggestive, if imperfect.<sup>4</sup>

While the data quality on homicide rates often raises suspicions, this type of data comprises the backbone of the empirics found in Pinker's book. Furthermore, identifying relationships between institutions and international homicide rates is certainly possible in general (see, e.g., Stringham and Levendis 2010, Bjornskov 2015). I use three measures of the strength of government: Worldwide Governance Indicators from the World Bank, Polity IV from the Center for Systemic Peace, and government consumption as a percentage of GDP from World Development Indicators. Worldwide Governance Indicators (an average of which I used to create a single measure) can be interpreted as government effectiveness, state capacity (i.e., the ability of a state to marshal resources and perform tasks should it choose to do so), or the quality of bureaucracy (see, e.g., Fukuyama 2014). The Polity IV index measures the strength of democratic institutions across countries. Therefore, regardless of whether we conceive of the state in terms of its raw size, its ability to perform various functions, or its modern, democratic character, the empirical tests here capture the relevant facts.

As a control variable, I use gross nominal income (most recent available) from World Development Indicators. I also use the Gini coefficient, a measure of inequality, from the most recently available year as

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less rudimentary) as well as, in Pinker (2011), figures 2-2, 3-1, 3-2, 3-3, 3-4, 3-7, 3-10, 3-12, 3-13, 3-14, 3-15, 3-16, 3-18, 3-19, and others. Taking this evidence together, I do not object to Pinker's conclusion. However, regarding the relationship between violence and the presence of the state, this paper finds Pinker's argument to lack similar empirical support.

<sup>4</sup> This approach is consistent with Pinker's and others' use of anthropological scholarship on present-day societies to study societies in the distant past. This usage is what Figure 1, for example, implies.

found in the World Income Inequality Database (UNU-WIDER 2015). Table 1 provides descriptive statistics for each of the control variables as well as for the variables of interest.<sup>5</sup> Studies frequently find the Gini coefficient to have a positive statistical relationship with the homicide rate (as in Stringham and Levandis 2010), while gross national income (GNI) is a measure of economic development that covers an extensive number of lower-income countries.

TABLE 1. Descriptive Statistics

Variable	n	mean	stdev	min	max
Homicides	79	10.366	12.333	0.6	90.4
Polity	71	3.113	5.214	-9	10
World Governance Indicators	70	0.320	0.107	0.083	0.61
Government consum. as a % of GDP	70	15.002	10.373	2.8	85.75
Log gross nominal income	79	3.134	0.340	2.415	3.603
Gini coefficient	72	41.099	8.107	26.4	64.3

These control variables, in addition to regional dummies<sup>6</sup> (variables which account for characteristics specific to parts of the world) are the only controls in this paper. Other analyses using homicide rates sometimes have more controls, but the point in this argument is that methods that are as strong as or stronger than those Pinker employs do not support the secondary hypothesis I consider here.

Table 2 provides baseline results for both lower-income and lower-middle-income countries. Each regression employs robust standard errors. I place each variable measuring the strength of government (Polity IV, Worldwide Governance Indicators, and government consumption as a percentage of GDP) in a simple regression explaining homicide rates. Following each simple regression, I also add gross nominal income, the Gini coefficient, and the regional dummies. To reiterate, the point of these

<sup>5</sup> In this table, the homicide rate is the variable with the largest sample, even though it covers the fewest number of countries. This is because, since I knew in advance that it would be the binding constraint, I first compiled it and then matched the other data to it.

<sup>6</sup> The regional dummies correspond to Africa, Asia, Latin America, Europe, and the Arab world; Oceania is omitted.

regressions is not to establish a deeply satisfying identification strategy but to provide a very basic test of the argument that the strength of governments is what drives the fall in violence in the countries that have not yet approached the stability and wealth of the developed world.<sup>7</sup> I then replicate these specifications in Table 2 but omit lower-middle-income countries so as to focus only on the poorest countries.

TABLE 2. Strength of Governments and Homicide Rates—Lower- and Lower-Middle-Income Countries

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Polity IV	0.197 (0.286)	-0.135 (0.217)				
World Governance Indicators			1.800 (12.574)	-10.700 (10.650)		
Government consum. as % of GDP					0.024 (0.127)	0.134 (0.125)
Logged gross nominal income		4.405 (4.497)		4.996 (3.920)		-0.092 (4.930)
Gini coefficient		0.380* (0.225)		0.452* (0.258)		0.465* (0.248)
Constant	10.357*** (1.310)	-22.841 (14.263)	10.218** (4.483)	-28.523 (17.727)	10.504*** (2.148)	-21.850 (13.177)
Regional dummies?	N	Y	N	Y	N	Y
R <sup>2</sup>	0.006	0.365	0.000	0.378	0.000	0.417
n	71	68	70	68	70	68

\* denotes 10% confidence. \*\* denotes 5% confidence. \*\*\* denotes 1% confidence. Robust standard errors were employed and are provided parenthetically.

When I perform these tests, under no specification does the strength of government statistically significantly predict homicide rates. The point estimates of the relationship vary widely, giving us weak grounds for interpreting them at all. In some sense, these tests fail to reject the null hypothesis in very favorable circumstances: regressions 1, 3, and 5 are

<sup>7</sup> Although identification is not the purpose of these exercises, it is worth noting that including an omitted variable that would show that governments reduce violence would be a bit counterintuitive. Variables correlated with stronger governments as defined here tend to be related to positive outcomes and prosperity (protection of property rights, education, etc.). If the reason why strong government is not related to less violence is that less violence is endogenous to such an omitted variable, it would imply that that omitted variable is causing *more* violence.

univariate regressions with seventy or more observations. In the absence of any other competing hypothesis (besides the null), these regressions, which allow the strength of the state to claim whatever portion of declines in homicide rates it is correlated with, do not support Pinker's claim.

TABLE 3. Strength of Governments and Homicide Rates—Lower-Income Countries Only

Variable	(7)	(8)	(9)	(10)	(11)	(12)
Polity IV	-0.292 (0.236)	-0.413 (0.265)				
World Governance Indicators			-0.206 (14.636)	-11.539 (17.342)		
Government consum. as % of GDP					0.028 (0.145)	-0.141 (0.176)
Logged gross nominal income		-1.248 (7.423)		-0.957 (8.407)		-1.308 (6.646)
Gini coefficient		0.174 (0.118)		0.183 (0.203)		0.120 (0.126)
Constant	9.579*** (1.104)	2.294 (16.729)	8.914** (4.600)	3.723 (25.862)	8.492*** (2.130)	6.390 (17.168)
Regional dummies?	N	Y	N	Y	N	Y
R <sup>2</sup>	0.048	0.315	0.000	0.281	0.001	0.244
n	30	29	29	29	29	28

\* denotes 10% confidence. \*\* denotes 5% confidence. \*\*\* denotes 1% confidence. Robust standard errors were employed and provided parenthetically.

While these tests are not robust econometrically and offer little evidence of causation, they are at least as rigorous as the graphs and time series Pinker marshals throughout his book. The central claim of his work—that violence has declined—can be demonstrated persuasively using the data Pinker provides: if one does not impugn the data sources themselves, obtaining this result is almost a matter of arithmetic. But the circumstantial evidence and narrative Pinker employs provide much less support for his secondary hypotheses, such as the causal reasons for the decline in violence.

Numerous books have provided explanations as to why the modern world has developed the institutions that allow nations to become richer, safer, and more educated (e.g., Diamond 1997; Fukuyama 2014; Acemoglu and Robinson 2012). *The Better Angels of Our Nature* succeeds in giving us reason to believe its central thesis. But this note provides some baseline evidence suggesting that when Pinker partakes in similar narrative explanations—for example, by crediting a strong state for the decline in violence—his argument may not withstand scrutiny.

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