PRESIDENTIAL ADDRESS
INSTITUTIONS AND CULTURE

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Abstract
How and why does distant political and economic history shape the functioning of current institutions? This paper argues that individual values and convictions about the scope of application of norms of good conduct provide the "missing link." Evidence from a variety of sources points to two main findings. First, individual values consistent with generalized (as opposed to limited) morality are widespread in societies that were ruled by non-despotic political institutions in the distant past. Second, well-functioning institutions are often observed in countries or regions where individual values are consistent with generalized morality, and under different identifying assumptions this suggests a causal effect from values to institutional outcomes. The paper ends with a discussion of the implications for future research. (JEL: A10, D7, E00)

1. Introduction

Economic backwardness is typically associated with a large range of institutional, organizational, and government failures, along many dimensions. In several poor or stagnating countries, politicians are ineffective and corrupt, public goods are under-provided and public policies confer rents to priviledged élites, law enforcement is inadequate, and moral hazard is widespread inside public and private organizations. There is not just one institutional failure. Typically, the countries or regions that fail in one dimension also fail in many other aspects of collective behavior. An influential body of research in economic history, political economics, and macroeconomics has shown that both economic and institutional backwardness are often a byproduct of history, in the sense that they are observed in countries or regions that centuries ago were ruled by despotic governments, or where powerful élites exploited uneducated peasants or slaves (North 1981;

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Acemoglu, Johnson, and Robinson 2001). But what is the mechanism through which distant political and economic history shapes the functioning of current institutions? Answering this question is one of the main challenges of current research in economic growth and development.

A promising and fruitful line of research seeks to explain the effect of history on the functioning of current institutions as a political and economic equilibrium. The main challenge for a political-economy approach is that formal political institutions often change abruptly, as during transitions towards or away from democracy, or when a former colony becomes independent. The evidence, however, suggests that economic and policy outcomes are very persistent, and often remain unaffected by the sudden changes in formal political institutions.[1] The literature in political economics seeks to explain this persistence with reference to conflicts over the distribution of income and wealth. Political and economic élites deliberately shape the evolution and functioning of institutions to preserve their rents, even if this hurts economic development. Thus, inefficient policy outcomes persist despite changes in formal institutions, because powerful groups or individuals devote effort and resources to preserve status quo policies from which they benefit (see for instance Acemoglu and Robinson 2008).

The political economy of growth and institutions is one of the most exciting new research programs in economics. But several institutional, political, or economic outcomes are difficult to explain exclusively in terms of redistributive conflicts and economic incentives. Such outcomes do not just reflect the design of public policies; they also result from the behavior of public officials, or of private individuals inside private or public organizations. Within many countries we observe large differences in the functioning of the bureaucracy, despite identical legislation and incentives, and similar resources. In Italy, for instance, it is well known that hospitals, courts, schools, and local governments are much less efficient in the South than in the North. Within and across countries, we also observe very different behavior by the voters: In some countries or regions voters seem to demand higher standards of honesty and transparency from their political representatives than in others. The form and intensity of political participation also varies widely across countries, even at the same level of development. Whereas blocking traffic in a highway is widely considered a natural and legitimate form of political protest in countries like France or Italy, it would scarcely be tolerated by public opinion in Sweden or the US. More generally, the political economy research program cannot easily explain why and how different groups in society

1. A large literature has studied the effects of transitions from democracy to autocracy, or vice versa. While political coups seem to bring about a pronounced deterioration in economic outcomes, transitions towards democracy are not associated with large improvements in policy or economic outcomes—see Persson and Tabellini (forthcoming), Giavazzi and Tabellini (2005), and the references cited there. Stein and Stein (1970) discuss the end of colonial rule in Latin America, and Acemoglu and Robinson (2008) provide additional references.

can overcome the collective action problem that is at the core of almost any form of political participation.

One reason why the standard political economics approach finds it difficult to explain these phenomena is that it focuses primarily on economic incentives and redistributive conflicts. But although individual incentives are strong and powerful in most economic situations, this is not true in several political situations where aggregate outcomes reflect the actions of many atomistic individuals. Incentives are also weak inside bureaucracies and government organizations, where output is difficult to measure and competition is lacking. This suggests that, to explain some political outcomes or the functioning of bureaucratic organizations, we may have to go beyond pure economic incentives and also think about other factors motivating individual behavior.

One of these factors is morality. Conceptions of what is right or wrong, and of how one ought to behave in specific circumstances, are bound to exert a strong influence on voters' demands and expectations, on citizens' participation in group activities, on the extent of moral hazard inside public organizations, and on the willingness of individuals to provide public goods. These normative values evolve slowly over time, as they are largely shaped by values and beliefs inherited from previous generations. The general theme of this paper is that morality, defined as individual values and convictions about the scope of application of norms of good conduct, is an important channel through which distant political history influences the functioning of current institutions. As suggested also by Roland (2004), slow-moving values can explain the puzzling persistence of institutional outcomes, and provide the "missing link" between distant political history and current functioning of government institutions.

The paper discusses aggregate evidence from a variety of sources consistent with this general idea. Exploiting attitudes revealed by opinion polls in *The World Value Surveys* (EVSF-WVSA 2006), I seek to capture a distinction between values consistent with "generalized" versus "limited" morality. Conceptually, the distinction concerns the scope of application of norms of good conduct (whether towards everybody or just in a narrow group with which the individual identifies). *Generalized morality* means that individual values support a generalized application of norms of good conduct in a society of abstract individuals entitled to specific rights.

The evidence points to two main findings. First, values consistent with generalized morality are more likely to be widespread in societies that were ruled by non-despotic political institutions in the distant past. Second, well-functioning institutions are often observed in countries or regions where individuals share values consistent with generalized morality, and different identifying assumptions suggest a causal effect of values on institutional outcomes. As always with aggregate data, there are ambiguities about the precise interpretation, and the identification assumptions can be questioned. Nevertheless, the correlations presented

below are very robust and they are consistent with the analysis of microeconomic data.

The findings in this paper and in other related literature thus point to a new research agenda. To explain the functioning of government institutions and the persistence of institutional outcomes, we ought to study the economic and political effects of individual values, and their endogenous evolution. In particular, how do values interact with economic incentives and with formal features of institutions to influence economic and political behavior? Why do specific values persist in some political or economic environments and not in others? And why are current values correlated with features of political institutions in the distant past?

The idea that generalized trust and generalized morality lead to better collective outcomes has a long history in other social sciences. See in particular Banfield (1958), Gambetta (1988), Putnam (1993), Fukuyama (1995), and Coleman (1990). More recently, variants of this idea have been gaining grounds in economics as well. Landes (1998), Ben-ner and Putterman (1998), and Platteau (2000) emphasize the relevance of culture and morality to economic development and to the functioning of institutions. In cross-country data, generalized trust has been shown to be correlated with favorable economic outcomes (Knack and Keefer 1997) and with indicators of good government (La Porta et al. 1997). A related idea, with a long pedegree in political science, stresses that a civic culture and a well-educated population are an important prerequisite to well-functioning and stable democracy, because it cannot be taken for granted that democratic procedures are viewed as legitimate forms of conflict resolution—see Lipset (1959), Almond and Verba (1963), and more recently Glaeser et al. (2004), Glaeser et al. (2005), and Persson and Tabellini (2006). Other relevant research is quoted in context.

All these contributions share with this paper the notion that specific values (such as generalized morality) or cultural features can be ranked in terms of implied collective welfare. More recently, a rapidly growing literature by economists and economic historians, using the standard tools of economic theory and of rigorous econometric analysis, emphasizes the relevance of other cultural traits for economic and political outcomes. This wider literature takes a more relativistic view and does not attempt to rank cultural traits in a normative hierarchy. Instead, it argues that some traits induce specific economic or social outcomes, or that they confer a collective or individual advantage in some situations but not in others. Akerlof (2007), Ashraf and Galor (2007), Alesina and Giuliano (2007), Greif (2006), Giuliano (2007), Guiso, Sapienza, and Zingales (2006), Fernandez (2007b), and Weil (2005) illustrate different applications of this new line of research and provide additional references.

The outline of the paper is as follows. Section 2 defines more precisely the relevant concepts and discusses how to measure the distinction between limited and generalized morality. In Section 3, I present two "clues" that indeed culture

may be an important channel through which distant history influences current institutional outcomes. Sections 4–6 present evidence that individual values might have a causal effect on observed institutional outcomes, drawing from a variety of samples: cross-country regressions linking aggregate indicators of values to the quality of government (Section 4); sectoral data on international trade, showing that values can be a source of comparative advantages in specific sectors (Section 5); and regional data, showing that values can explain within country variation in economic and political outcomes (Section 6). After having summarized and taken stock of this evidence, Section 7 concludes with a discussion of promising future research directions.

2. Which Cultural Traits?

Before asking whether and how culture explains the functioning of government institutions, we need to be more precise on exactly which cultural traits are likely to be relevant and how to measure them. This is what I do in this Section.

2.1. Limited vs. Generalized Morality

Culture is an ambiguous word. Economists have used it with two different meanings. The most common meaning of culture is that it refers to the social conventions and individual beliefs that sustain Nash equilibria as focal points in repeated social interactions or when there are multiple equilibria (e.g., Myerson 1991; Greif 1994). More recent contributions have constructed models of culture as beliefs about the consequences of one's action, where such beliefs are purposefully manipulated by earlier generations or by deliberate experimentation (cf. Benabou and Tirole 2006; Anderlini, Gerardi, and Lagunoff 2007; Benabou 2008; Guiso, Sapienza, and Zingale 2008). An alternative interpretation is that culture refers to more primitive objects, such as individual values and preferences (e.g., Rabin 1993; Akerlof and Kranton 2000). This latter interpretation is consistent with an emerging literature in psychology, sociology, and evolutionary biology that emphasizes the role of moral emotions in motivating human behavior and regulating social interactions.[2]

These two interpretations are not mutually exclusive, because beliefs and values could interact in systematic fashions (Bernheim 1994; Benabou and Tirole 2006; Benabou 2008). But if our goal is to explain how distant history shapes current institutional outcomes, the concept of culture as a set of principles and normative values that motivate individuals is particularly appealing. Whereas social

2. See, for instance Barkow, Cosmides, and Tooby (1992), Pinker (1997), Massey (2002), and other references quoted in Kaplow and Shavell (2007).

conventions sometimes change suddenly because of strategic complementarities, and beliefs are updated as one learns from experience or from others, individual values and codes of good conduct are likely to be more persistent and to change slowly from one generation to the next. The reason is not only that normative values are acquired early in life and are a core component of individual personality, but also that learning from experience cannot logically be exploited to modify one's moral convictions. Thus, values are likely to be transmitted vertically from one generation to the next, to a large degree within the family, rather than horizontally across unrelated individuals. Consistent with this view, empirical evidence shows that religious beliefs and practice, as well as political ideologies, are much more similar between members of the same family than between friends, compared to other cultural traits. As noted by Cavalli-Sforza (2001), such vertical cultural transimission is slow and conservative.

At the same time, we do observe significant variation in the specific content of values across time and space. In particular, sociologists have long argued that there are large differences in the scope of application of norms of good conduct across different societies. A useful idea, stressed by Platteau (2000), among others, rests on the distinction between limited versus generalized morality. In hierarchical societies, codes of good conduct and honest behavior are often confined to small circles of related people (members of the family, or of the clan). Outside of this small network, opportunistic and highly selfish behavior is regarded as natural and morally acceptable. This contrasts with modern democratic societies, where abstract rules of good conduct apply to many social situations, and not just in a small network of personal friends and relatives. As argued by Weber (1970), the emancipation of the individual from feudal arrangements has typically been associated with a diffusion of generalized morality, and with the ability to identify oneself with a society of abstract individuals who are entitled to specific rights. But the distinction between generalized versus limited morality remains relevant today, to understand cultural differences between different countries or regions. In his classic case study of life in Chiaromonte, a rural village in Southern Italy, Banfield (1958) was struck by what he calls "amoral familism," namely, the application of the principles of good and evil inside the family only, and how this differed from the social environment in comparable rural villages in the US Midwest.

Clearly, good government is more likely to arise if individuals have internalized norms of generalized morality. Such norms are likely to induce reciprocal cooperation and to instill confidence and respect for abstract principles such as the rule of law, fundamental individual rights, or democratic procedures and checks and balances. Individuals who practice generalized (as opposed to limited) morality are more reluctant to free ride on others. This matters not only for the economic behavior of individuals (e.g., cheating on taxes or on your boss), but also for how they vote, for participation in group activities, and for the behavior of politicians and public officials. Altogether, norms of generalized morality induce

well-functioning institutions through at least three channels: law enforcement is easier because citizens are more likely to be law-abiding; bureacurats are more likely to refrain from corruption; and voters expect and demand higher standards of behavior from political representatives and are more inclined to vote based on general social welfare rather than personal benefit criteria.

2.2. Measurement

To measure the diffusion of norms of generalized vs. limited morality at an aggregate level, I construct two variables obtained from the *World Value Surveys* (EVSF-WVSA 2006). These are opinion polls designed to enable cross-national comparison of individual values and attitudes on a wide range of topics. I exploit all four waves, carried out around 1981, 1990, 1995, and 2000. The coverage of countries is not always the same, and it ranges from 21 in the first wave to 70 in the last one.

The first variable is generalized trust towards others (*Trust*). One of the questions in the survey is: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" *Trust* is defined as 1 if the respondent answers that "Most people can be trusted," and 0 if he answers "Can't be too careful." At the aggregate (country or regional) level, *Trust* is the fraction of individuals answering that "Most people can be trusted." This variable has been extensively used in many studies, with two alternative interpretations: as belief about the behavior of others, and as an indicator of moral values and trustworthiness. The two interpretations are not mutually exclusive: Beliefs are likely to be formed also extrapolating to others normative conceptions of how one ought to behave. A moral interpretation has been advocated by Uslaner (2008), who has shown that *Trust* is a very persistent individual feature correlated with charitable contributions and volounteering, and by Glaeser et al. (2000) on the basis of experimental evidence.[3] Using General Social Survey (GSS) data for the US, Alesina and La Ferrara (2002) show that *Trust* is lower if, among other things, the respondent is less educated, he/she belongs to a group that historically has been discriminated against or lives in a heterogeneous community in terms of income or race. They conclude that people distrust those who are dissimilar from themselves. This is consistent with Uslaner's view that trust arises when a community shares a set of moral values. Here I interpret *Trust* as measuring also—though not exclusively—individual values consistent with generalized morality.

The second variable seeks to measure the values transmitted from parents to children, exploiting the following question: "Here is a list of qualities that

3. The participants in the experiments by Glaeser et al. (2000) were Harvard students. Using a more heterogeneous group of participants, Fehr et al. (2003) could not replicate their results. Sapienza, Toldra, and Zingales (2007) seek to reconcile these different experimental outcomes.

children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five." The variable *Respect* is coded as 1 if the respondent mentions the quality "tolerance and respect for other people" as being important, and 0 otherwise (the other qualities in the list are: good manners; independence; obedience; hard work; feeling of responsibility; imagination; thrift, saving money and things; determination and perseverance; religious faith; unselfishness). Again, at the aggregate level *Respect* is defined as the simple average of individual responses. This variable is explicitly based on a question seeking to elicit individual values, and in particular generalized respect for the rights of others. Thus, it comes close to what we ideally would like to measure, namely, the scope of application of norms of good conduct. On the other hand, the question on which it is based is perhaps more complex and requires more individual attention than the *Trust* question.

The two individual responses are uncorrelated, suggesting either that there is considerable measurement error or that they capture different aspects of the values we want to measure. *Trust* is more rare than *Respect*: the overall sample mean of *Respect* is over twice as large as that of *Trust*. Of course, this could reflect the specific formulation of the questions, and in particular the fact that respondents to the question on the children could list up to five qualities.

Throughout I will consider either these two variables in isolation, or their first principal component (called *Trust & Respect*), to try to capture a common underlying determinant. This variable can take one of four values for each individual in the sample, corresponding to the four possible realizations of *Trust* and *Respect*.

Admittedly, these two variables are imperfect indicators of the diffusion of generalized morality. Not only they are measured with error, but their interpretation is also somewhat ambiguous. As already noted, besides measuring individual values, these variables might also capture social conventions or beliefs about others. Even interpreting them as values, their specific meaning in terms of the distinction between generalized vs. limited morality is only one of the possible interpretations. Unavoidably, there is a gap between the theoretical concepts and their empirical counterparts. With this important caveat in mind, I now turn to the empirical analysis.

3. Two Clues on the Role of Culture

This section briefly discusses two "stylized facts" suggesting that cultural factors such as values and morality might play an important role as a channel of persistence of institutional outcomes. First, macroeconomic data show that government failures and success are correlated across many different policy areas. Policy distortions and government inefficiencies are often clustered together, as

if they had a common cause. Second, microeconomic data show that *Trust* is very slow moving and influenced by political and economic outcomes in the distant past. Although both facts lend themselves to several alternative interpretations, they are also consistent with the idea that the quality of government has its roots in history through cultural phenomena.

3.1. Generalized Government Failure and Success

Casual anecdotal evidence suggests that some countries are governed well in many policy areas, and others fail also in many areas. This is confirmed by cross-country data. Tables 1 and 2 display pairwise correlation of coefficients of a variety of policy indicators in a large sample of countries. Table 1 reports correlations between the raw indicators, and Table 2 reports correlations of the residuals of the same variables, after conditioning on average per capita income in 1990. Higher numbers denote better policies. All indicators refer to perceptions of the quality of government in different policy areas: control of corruption (*corruption*), quality of the bureaucracy (*bureaucratic quality*), absence of risk of repudiation of government contracts (*repudiation*), quality of instrastructures (*infrastractures*), enforcement of tax compliance (*tax compliance*), absence of risk of insolvency of external debt (*S&P rating*), quality of the environment (*environment*), protection of property rights (*gadp*). For a few variables the source is the same, and some of the correlation might be distorted upwards by common measurement errors, in others the variables originate from different sources and they code specific and well-defined features of the policy area according to well-defined benchmarks. Irrespective of the source, the correlations are generally very high and always statistically significant, even after conditioning on per capita income. Similar results are obtained with a variety of other indicators.

These high correlations suggest that indeed it makes sense to talk about the quality of government as a general feature of countries and to search for a

TABLE 1. Quality of government indicators: pair-wise correlations.

	Corruption	Bur quality	Repudiation	Infrastructures	Tax compliance	S&P rating	gadp
Bureaucratic quality	0.84*						
Repudiation	0.81*	0.86*					
Infrastractures	0.86*	0.87*	0.82*				
Tax Compliance	0.65*	0.57*	0.57*	0.62*			
S&P Rating	0.88*	0.81*	0.81*	0.78*	0.66*		
Environment Quality	0.75*	0.69*	0.66*	0.67*	0.54*	0.66*	
gadp	0.88*	0.93*	0.93*	0.86*	0.55*	0.85*	0.72*

*Significant at 5%.

TABLE 2. Quality of government indicators: pair wise correlations after conditioning on per capita income.

	Corruption	Bur quality	Repudiation	Infrastructures	Tax compliance	S&P rating	gadp
Bureaucratic quality	0.59*						
Repudiation	0.38*	0.64*					
Infrastractures	0.56*	0.61*	0.37*				
Tax Compliance	0.44*	0.32*	0.30*	0.41*			
S&P Rating	0.60*	0.48*	0.47*	0.28	0.47*		
Environment Quality	0.60*	0.41*	0.35*	0.36*	0.26	0.26*	
gadp	0.66*	0.86*	0.81*	0.42*	0.30*	0.53*	0.46*

*Significant at 5%.

common explanation for success and failures across many policy areas. They also suggest that exactly how the quality of government is measured is not so important, because many different policy indicators portray a very similar picture.[4]

3.2. Historical Determinants of Trust

Whereas political institutions sometimes change abruptly, culture is very slow moving. This subsection presents direct evidence that individual *Trust* is transmitted across generations and shaped by distant political history. Exploiting data on immigrants, I ask whether current *Trust* reflects features of the ancestors' country of origin. A similar approach was used in other studies reviewed by Fernandez (2008), and by Guiso, Sapienza, and Zingales (2006) and Algan and Cahuc (2006, 2007) to closely related issues. Similar results have also been obtained by Uslaner (2005), and Dohmen et al. (2006) provide evidence that trust and risk attitudes are transmitted within the family from parents to children.

I use the US General Social Survey (GSS), that contains individual data on *Trust*, as well as other relevant information on the respondent. The sample consists of about 4,300 third-generation immigrants to the US, namely, individuals born in the US who have at least two grand-parents born abroad and who report country of origin of their ancestors.[5] I report results on countries that originated at least

4. Some recent papers seek to explain this correlation of government failures and success across policy areas as resulting from limited commitment and strategic complementarities in a political economy setting (cf. Acemoglu, Ticchi and Vindigni 2006; Besley and Persson 2007). A precursor of some of the ideas in these papers is Cukierman, Edwards, and Tabellini (1992).

5. The survey does not ask about the country of origin of grandparents, but of the more vaguely defined ancestors. Because this is probably interpreted by the respondent as reflecting the ancestors who had more influence on family history, it need not introduce measurement error.

TABLE 3. Country of origin of US immigrants.

Country of origin	No. of individuals	Country of origin	No. of individuals
Austria	69	Lithuania	40
Canada	200	Mexico	252
Czechoslovakia	149	Netherlands	94
Denmark	51	Poland	376
Finland	46	Portugal	30
France	63	Russia	162
Germany	834	Spain	40
Greece	38	Sweden	153
Hungary	75	United Kingdom	450
Ireland	485	Yugoslavia	45
Italy	668		
	Total 4,320		

25 individuals in the sample, but the results are robust to including a larger or smaller set of countries of origin. Table 3 lists the relevant countries and how many respondents in the sample originated from each country. With the exception of Russia and Mexico, the set of countries is fairly homogenous in terms of current level of development, though not in terms of political and economic history in the distant past.

Does current *Trust* reflect historical or current features of the ancestors' country of origin? To answer I estimate a probit model where the dependent variable is *Trust* and where I control for several features of the respondent, such as gender, income, education, employment status, age, religion, marital status, parental status, parents' education, the number of grandparents born abroad, a set of dummy variables for the decade in which the survey was carried out (the surveys span the period 1977–2004, because before this period the question on the birthplace of the respondent was not included in the questionnaire), and about 260 dummy variables for the standard metropolitan areas in which the respondent lives—see the notes to Table 4 for a complete list of the variables. The results are very robust to the specification. Several but not all of these variables are statistically significant, in particular income, gender, employment status, age, and the mother's education. Controlling for this long list of individual attributes makes it likely that, if we find that *Trust* is correlated with features of the ancestors' country, this reflects transmitted cultural traits rather than omitted economic variables such as income or human capital.

Table 4 shows the estimated coefficients of variables that measure alternative features of the ancestors' country (in other words, the variables reported in Table 4 only vary across different countries of origin). Standard errors are clustered by ancestors' country, to allow for arbitrary patterns of correlation of the residuals by ancestors' country. Column 1 of Table 4 reproduces a finding already discussed in Guiso, Sapienza, and Zingales (2006) and by Algan and Cahuc (2006, 2007) on

TABLE 4. Trust and ancestors' countries—probit estimates.

	Trust						
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust from 2000 WWS	0.55						0.67
	(0.22)**						(0.21)***
Constr. Exec. up to 1900		0.06		0.06	0.07	0.05	0.06
		(0.02)***		(0.02)***	(0.02)**	(0.02)***	(0.01)***
Polity2 up to 1900			0.05				
			(0.02)***				
Per capita income 1870				0.00			
				(0.08)			
Per capita income 1930					–0.03	–0.16	–0.24
					(0.08)	(0.10)	(0.08)***
Primary school enr. 1910						0.52	0.50
						(0.18)***	(0.16)***
Observations	4267	4267	4267	3907	3907	3520	3520
Pseudo R^2	0.08	0.09	0.08	0.09	0.09	0.09	0.10

Notes: Robust standard errors in parentheses, clustered by country of origin of ancestors.

All regressions include the following controls: Gender; family income in constant dollar (base = 1986); dummy variables if completed high school, if completed college, if working, if unemployed, for age over 65, for age under 25, if married, for having at least one child, if Catholic, if Protestant, if Jewish, if father attended primary school, if mother attended primary school, if father attended college, if mother attended college, for living in urban area; number of grandparents born outside US; dummy variables for survey's decade (1980s, 1990s or after year 2000); dummy variables for metropolitan area or county of residence (258 dummies altogether).

*Significant at 10%; **significant at 5%; ***significant at 1%.

a slightly different sample of GSS respondents. Namely, *Trust* of US immigrants is strongly correlated with average current *Trust* in the ancestors' country, as measured by the latest *World Value Surveys* conducted shortly before the year 2000 (the variable *Trust from 2000 WWS*). This is already important evidence of the transmission of cultural traits across generations. Third-generation US immigrants have had time to adapt to their new environment, that certainly differs from that of their ancestors.

Columns 2 and 3 replace contemporaneous *Trust* in the ancestor's country with a measure of historical political institutions in the country of origin. The variables *Constr. Exec up to 1900* and *Polity2 up to 1900* are the first principal component of the variables Constraints on the Executive and Polity2 in the Polity IV data set, measured in the years 1850, 1875, and 1900. Higher values correspond to more checks and balances on the executive or more democratic political institutions. Both variables are highly statistically significant and show that trust is higher in third generation US immigrants that come from countries that over a century ago had more democratic political institutions. Similar results are obtained if political institutions are sampled in different years or aggregated in different ways.

Could this result be due to the fact that immigrants from countries with more democratic institutions were richer, and this in turn increases the stock of wealth

of respondents? Because we already control for individual income, education, and parental education, this is not very likely. But to allow for this possibility, columns 4 and 5 add as a regressor per capita income in the ancestors' country in 1870 and in 1930, respectively (the source is Maddison 2001).[6] Political history remains significant and its coefficient does not vary, and per capita income in the country of origin has a positive estimated coefficient which, however, is not statistically significant.

Column 6 adds a historical measure of education in the country of origin, namely primary school enrollment in 1910 (*Primary school enr. 1910*), taken from Benavot and Riddle (1988). Immigrants from countries with higher school enrollment on average were likely to be better educated. Because education is likely to foster *Trust*, we expect that this attitude is transmitted to subsequent generations and thus we expect a positive effect on current *Trust*. This is what we find: The estimated coefficient of this variable is statistically significant, and that on constraints on the executive remains positive and significant.

Finally, the last column of Table 4 reports the full specification, with variables measuring political history, past education, past income and contemporaneous trust in the country of origin. Of course, some of these ancestor's country variables are highly positive correlated. Nevertheless, all of them except per capita income have the expected sign and are statistically significant. Thus, the historical variables of the ancestors' country of origin contribute to explain the attitudes of third generation immigrants, but so does current average trust in the country. A plausible interpretation is that national culture is determined by more than the sparce historical variables included in the regression (hence *Trust from 2000 WWS* retains its statistical significance); but at the same time a country's history has additional explanatory power, because *Trust from 2000 WWS* also reflects more recent events that could not influence the cultural traits of earlier generations and hence of the US respondents.

These national variables explain a significant fraction of the current *Trust* of US respondents, averaged by country of origin. If we replace the national variables reported in Table 4 with dummy variables for the ancestors' countries, we can estimate the average effects of different ancestors' origin. Regressing the estimated coefficients of these dummy variables on the three historical variables reported in column 6 (weighting observations by the number of third generation US immigrants from each country), we reproduce similar results to those reported in Table 4, and these three variables explain up to 57% of the variance in the estimated coefficients. Adding *Trust from 2000 WWS*, as in column 7, the fraction of variance explained goes up to over 75%. Figure 1, which plots the estimated coefficients of the dummy variables against all the country of origin regressors

6. Adding this variable implies that we loose immigrants from Russia and the former socialist countries in Eastern Europe, for which the Maddison data are not available.

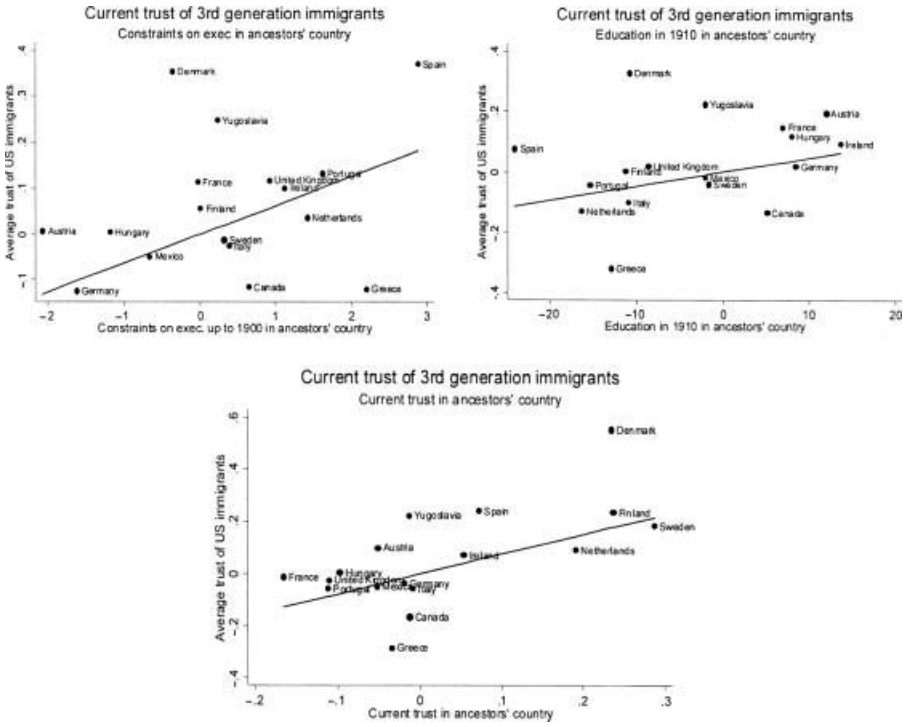

FIGURE 1. Trust and ancestors' country of origin.

included in column 7, illustrates that the estimates are not due to any outlier observations.

Overall, these results suggest that *Trust* changes slowly over time. National political history retains a strong influence on the attitudes of third-generation immigrants, who grew up in new and different social and political environments. A fortiori, the same historical forces are likely to be at work at home, through the attitudes and values of the citizens that did not migrate.

4. Evidence From Cross-Country Data

This Section presents evidence that values are correlated with the quality of government, and that this correlation might reflect an independent causal effect of culture on governance. I start by presenting some simple regressions meant to capture correlations rather than causal effects. Then I turn to instrumental variable estimation to try and detect causality, under identifying assumptions discussed subsequently.

4.1. Cross-Country Correlations

Observations refer to countries and values are measured by the country average of *Trust* and *Respect* (or of their first principal component) over all waves in that country. Thus, values might be measured at different points in time for different countries, depending on when the wave was conducted. Given the high persistence in these indicators, the results are very similar to those obtained focusing on the more recent wave only (that was conducted in several countries). Figure 2 displays these country averages in our sample. Clearly, there are large variations in values. Anglo Saxon countries and countries in Northern Europe tend to have values more consistent with generalized morality (higher values), whereas Latin America and the Balkans fare worst. Note that values are not perfectly correlated with per capita income (Africa is in the lower half of the distribution but it is not at the bottom). Finally, some Arab countries in the Middle East (Iraq in particular) display higher values of *Trust & Respect* than many European countries, despite the apparent lack of respect for individual rights in these countries, suggesting possible measurement error. In the regressions reported herein, the variable *Trust & Respect* is rescaled so as to lie between 0 and 1, where 1 corresponds to the observation for Sweden, the country with the highest value for *Trust & Respect* in our sample (for the individual variables *Trust* and *Respect* in isolation, the

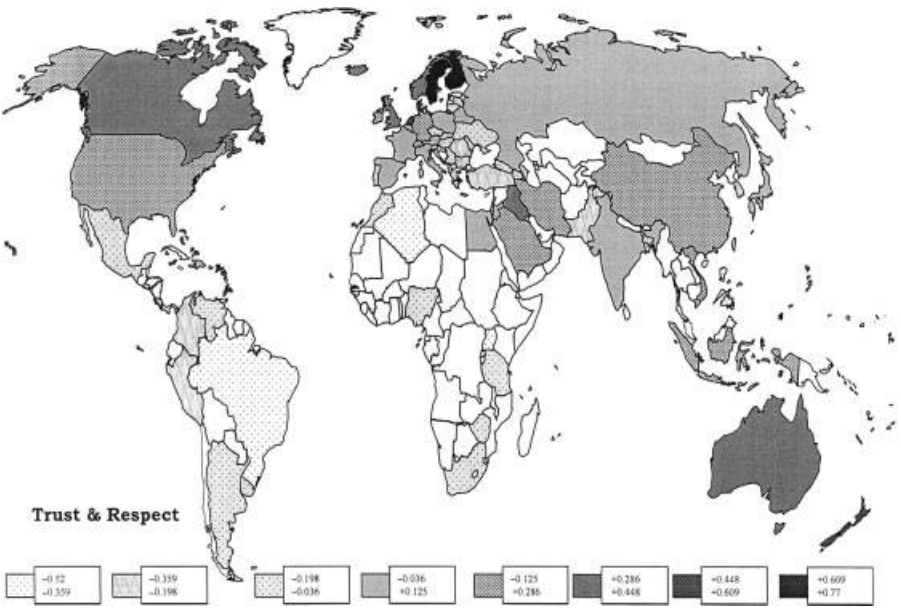

FIGURE 2. Cultural map of the world.

minimum and maximum observations lie strictly inside the (0,1) interval, so their estimated coefficients reported below are not exactly comparable with those of the first principal component, *Trust & Respect*).

The quality of government is measured by the first principal component of two indicators: *GADP* (Government anti-diversion policies), a widely used measure of property rights protection that combines indicators of effectiveness of law enforcement and absence of government abuse on average between the early 1980s until the late 1990s; and *Bureaucratic Quality*, an indicator of the quality of the bureaucracy in the late 1990s. Higher numbers correspond to better governance. Both variables are based on perceptions from a variety of sources. Their first principal component is denoted *GADP & Bureacratic Quality* and it is rescaled so as to lie approximately between 0 and 1, where 1 corresponds to Sweden (one of the countries with the better governance indicators). Given the high correlation between alternative measures of policy performance, the results are very robust to measuring the quality of government in other ways.

Values are likely to be influenced by education, which is also likely to have a direct positive effect on the quality of government, as suggested by Glaeser et al. (2004). To avoid an omitted variable bias, all regressions include a measure of education. Because education is likely to be endogenous in cross-country regressions, I measure it at the earliest possible date for which data are available for a large enough sample of countries. Thus, education is measured by primary school enrollment in 1930 (*Primary education in 1930*), taken from Benavot and Riddle (1988). For reasons to be discussed subsequently, the regressions also include dummy variables for French and UK legal origin (although all results are robust to omitting these variables).

Table 5, columns 1–3, reports the OLS estimates of regressing *GADP & Bureaucratic Quality* on *Trust* and *Respect*. The estimated coefficients are large and statistically significant, and they are more precisely estimated when the two indicators of values are combined, as would be expected if measurement error is relevant. Column 4 adds per capita income averaged between 1980 and 2000 (*income in 1980–2000*) as an additional regressor. The estimated coefficient of values remains very significant and it is more precisely estimated (although it drops in size). Of course, per capita income is likely to be correlated with the unobserved residual of this regression, as institutional outcomes might promote economic development. But, as discussed for instance in Acemoglu, Johnson, and Robinson (2001) (unpublished appendix) under plausible assumptions about the unobserved correlations, the bias introduced by adding such an endogenous regressor on the coefficient of interest (i.e., of the variable *Trust & Respect*) is likely to be downwards and thus working against the finding of a positive effect of culture on governance. Finally, the left-hand side panel of Figure 3 plots the observations and the regression line, to illustrate that the estimated correlations

TABLE 5. Culture and Governance, cross-country OLS estimates.

	GADP & Bureaucratic quality			
Dependent variable	(1)	(2)	(3)	(4)
Trust	0.468			
	(0.218)**			
Respect		0.522		
		(0.263)*		
Trust & Respect			0.359	0.279
			(0.144)**	(0.073)***
Primary education in 1930	0.007	0.007	0.006	0.000
	(0.001)***	(0.001)***	(0.001)***	(0.001)
Income in 1980–2000				0.214
				(0.033)***
Observations	57	57	57	56
Adjusted R^2	0.66	0.64	0.68	0.86

Notes: Robust standard errors in parentheses.
Other included covariates: Dummy variables for French and UK legal origin.
*Significant at 10%; **significant at 5%; ***significant at 1%.

are not due to single outlier obervations (the specification corresponds to column 4 in Table 5).

The estimated coefficients reported in Table 5 are also economically relevant. Take, for instance, two countries like the Netherlands and Italy at comparable levels of development and, respectively, close to the top and bottom of the distribution

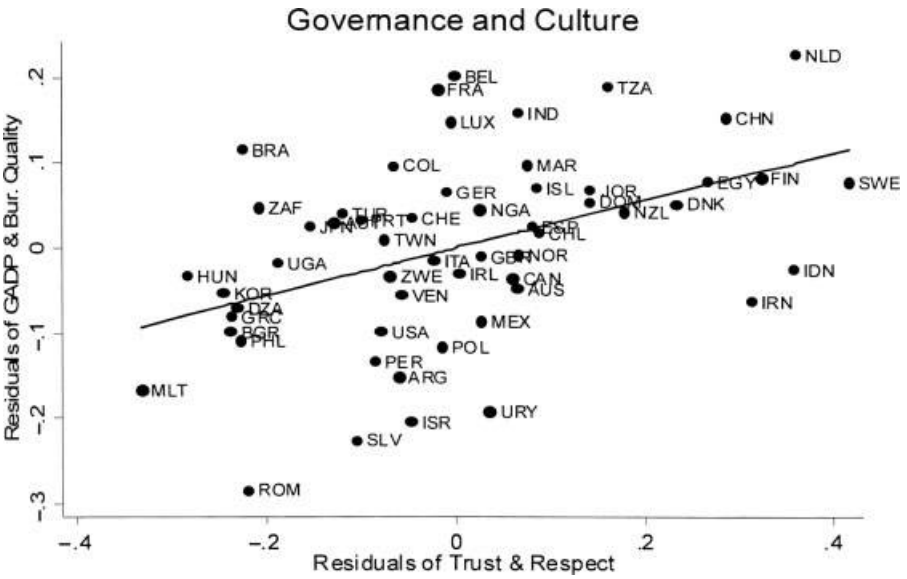

FIGURE 3. Governance and culture across countries.

Notes: Specification as in column 4 of Table 5.

of the governance indicator among the OECD countries. Over half their difference in governance can be explained by differences in *Trust & Respect*, according to the estimated coefficient in column 3.

These cross-country regressions cannot provide reliable estimates of the causal effect of values on governance, however, because values are likely to be endogenous. Common omitted variables and reverse causality could create an upward bias in the estimated coefficient, despite the inclusion of education and per capita income. On the other hand, likely measurement error in these variables could work in the opposite direction. The next section attempts to deal with this issue.

4.2. Language and Culture

4.2.1. Overview. When we ask whether generalized (as opposed to limited) morality influences the quality of government, we are interested in a causal effect. Unfortunately, inferring causality from cross-country data is a daunting task. Culture is not fixed once and for all, and reverse causality is almost certainly at work. Fair and efficient government is likely to promote the diffusion of trust and generalized morality; vice versa, a hierarchical society where arbitary power and abuse replaces the rule of law is likely to destroy individual values and trust. Even if we could rule out reverse causality, culture is not randomly distributed across countries. The same historical forces that have produced a specific cultural environment, such as income inequality or past education, are likely to have a direct impact on the functioning of government institutions. Hence, no matter what the estimation strategy is, the inferences we can draw from cross country comparison are always partial and incomplete. Nevertheless, ultimately we are interested in understanding what are the causes of good or bad government, and to explain why countries differ in this respect. Although certainly not the last word, cross-country comparisons of aggregate data are one step in forming a judgment on this issue.

My estimation strategy exploits the premise that current values are at least partly inherited from the distant past, and that there is an element of randomness in the history of ideas. Generalized morality—the universal applicability of rules of just conduct—is connected with two ideas. First, the conviction that the individual is entitled to a set of basic rights that others should not violate. Second, the idea that we are all equal, in the limited sense that the same principles of justice should be applied equally towards everybody. Even today, these two ideas are not accepted everywhere. Certainly they were not so in the past. This suggests that there is an element of randomness in the historical emergence and diffusion of both ideas, and hence of generalized morality. This historical randomness could provide an exogenous source of variation for values. If I can find

an observable variable correlated with these random elements in the history of ideas, that is not also correlated with other determinants of the quality of government besides values, then I can use it as an instrument to estimate a causal effect. This estimation strategy, although common in macroeconomics, is fragile because the exclusion restrictions are unavoidably restrictive. But in the absence of controlled experiments, it is better than nothing.

An instrument that might satisfy both requirements, of being correlated with the random evolution of ideas in the distant past, without also exerting a direct effect on current institutional outcomes, is language. As a classic example of network externalities, language evolves slowly over time. Linguistic innovations are costly because until they are widely adopted communications is more difficult. This creates inertia in any language. At the same time, language is not fixed, but it changes as a result of migration, cultural exchanges, new ideas, perhaps also fashions. Both forces create a natural link between language and historical features of culture. According to some linguists, the structure of language might have an independent causal effect on concept formation and hence on susbstantive cultural traits. But I don't need to enter this debate.[7] Even if it is culture that influences language more than vice versa, language is a valid instrument in my setting if the distant traditions that are responsible for current linguistic rules are not correlated with other unobserved determinants of the current quality of government. I discuss the validity of this assumption in the next section, whereas here I present evidence that specific grammatical rules are correlated with generalized morality as measured by *Trust & Respect*.

4.2.2. Rules on the use of pronouns. One of the stable features that differ across languages are the rules governing the use of first and second person pronouns in conversations. Some languages, like Italian, allow the speaker to choose whether or not to use a pronoun in a sentence. Other languages, like English, make the use of subject pronouns obligatory. Some linguists have suggested that these "deep" grammatical rules are associated with specific conceptions of the person. In particular, as argued by Kashima and Kashima (1998), languages that forbid dropping the first-person pronoun are typical of cultural traditions that gave more emphasis to the individual relative to his social context and thus were more respectful of the individual and his rights. A recent imaginative paper by Licht, Goldschmidt, and Schwartz (2007) used this grammatical rule as an instrument for cultural traits emphasizing individualism, to explain law enforcement and respect for the rule of law. Alesina and Giuliano (2007) also used it to instrument for cultural attitudes

7. Hill and Mannheim (2002) argue that grammatical categories have cultural implications because they implcitly emphasize specfiic cognitive or social categories. Nisbet (2003) discusses experiments where asking the same question in different languages to the same multilingual individuals induces different outcomes. Kashima and Kashima (1998) provide further references. See also Rubinstein (2000) for an economic analysis of language.

towards the family, to explain labor market and social outcomes. Following this literature, I define the variable *No pronoun drop* equals 1 if the rule forbidding first person pronoun drop is operative and 0 otherwise. I expect this variable to be positively correlated with my indicators of generalized morality, *Trust* and *Respect*.[8]

A second relevant grammatical rule concerns the types of personal pronouns, and in particular their number. Some languages, like French, differentiate between *Tu* and *Vous* (*Tu* and *Vos* in Latin) according to the type of interpersonal relationship betweeen speakers. Others no longer differentiate. Linguists point out that this $T-V$ distinction originally was present in many languages, and was associated with a hierarchy of power (the higher ranked individual would address the lower ranked by T, whereas the reverse would use V). Later some languages dropped it, while others retained it and regulate its use by the proximity between speakers. Hence, languages with the $T-V$ distinction are symptomatic of cultural traditions that paid more attention to social distance and hierarchy, and thus were less respectful of the principle of moral equality of all individuals. Thus, I define the variable *2nd person differentiation* as 1 if the number of second person pronouns that might be used in spoken language varies according to the social proximity between speakers, and 0 otherwise, expecting this variable to be negatively correlated with *Trust* and *Respect*. Licht, Goldschmidt, and Schwartz (2007) did not consider this linguistic rule, whereas Kashima and Kashima (1998) do study it but do not find it to be robustly correlated with their specific indicators of culture.[9]

4.2.3. Individual variation within countries. Before turning to aggregate cross-country data, I exploit the individual variation within the multilingual countries in the *World Value Surveys* and check whether the two grammatical rules are correlated with *Trust* and *Respect* as conjectured. One of the questions in the survey asks what is the language spoken at home. To avoid drawing inferences from recent migrants, and given that I don't have data on place of birth, I only include in the sample five truly multilingual countries (defined as those where at least 100 respondents speak a different language from the majority—the typical survey size is 1,500) that also have different grammatical rules within countries.[10] The results

8. The source for the language data is Kashima and Kashima (1998), integrated by their errata corrige in Kashima and Kashima (2005).

9. Their indicators of culture differ from the variables *Trust* and *Respect* that I focus on. There is a mistake in the data as coded by Kashima and Kashima (1998, 2005) that I correct here: They code Turkish as not having second person differentation, although in fact this feature is currently used in conversations. Note also that the coded rule refers to whether the $T-V$ distinction is possible and sometimes used, but not to how often it is actually used. Thus, it measures historical (as opposed to current) cultural features.

10. The countries are Canada, Nigeria, Singapore, South Africa, and Switzerland.

are similar if all countries are included. Throughout I control for individual features such as gender, age (by means of dummy variables for over 65 and under 25 years of age), being married, and having no children. Country fixed effects and dummy variables for each wave are always included. This means that the analysis only exploits within-country variation, thus holding constant policies and institutions that might also have an impact on individual values. Standard errors are clustered by country, to allow for arbitrary patterns of correlation by country.

The results are presented in Table 6. Columns 1 and 2 report probit estimates. The estimated coefficients are almost always significant and have the expected signs, and the effects are quantitatively relevant. Switching from a language with, say, $T-V$ differentiation to one without it increases the probability of displaying *Respect* by 8 percentage points, an effect much larger than that of any other observable individual features (other than the country dummy variables). The estimated coefficient on *No pronoun drop* is generally smaller, perhaps also because this variable varies less in this sample. Column 3 estimates the effect on *Trust & Respect* by ordered probit (this variable is ordered with four possible values). Again, the estimated coefficients are high and statistically significant. Although the sample of countries is small, overall these estimates confirm that there is a robust correlation between grammatical rules and the indicators of generalized morality within multilingual countries. They also provide further support to the idea that values are highly persistent.

4.2.4. Cross-country variation. Next, I turn to cross country comparisons. The data collected by Kashima and Kashima (1998) code the rules of the language most widely spoken in each country. This poses a problem for some of the truly

TABLE 6. Language and values inside countries, from individual respondents.

	Trust	Respect	Trust & Respect
Dependent variable	(1)	(2)	(3)
2nd person Differentiation	–0.22	–0.25	–0.24
	(0.09)**	(0.04)***	(0.04)***
	(–0.06)	(–0.08)	
No pronoun drop	0.18	0.05	0.12
	(0.10)*	(0.07)	(0.06)**
	(0.05)	(0.02)	
Estimation	Probit	Probit	Ordered Probit
Observations	8640	8640	8640
Pseudo R^2	0.07	0.03	0.04

Notes: Robust standard errors in the first parentheses, clustered by country.
Marginal effects in the second parenthesis (estimated at the sample average for all variables).
Other covariates: dummy variables for gender, age (over 65 and under 25 years of age), being married, having no children. Country fixed effects and dummy variables for each wave are always included.
*Significant at 10%; **significant at 5%; ***significant at 1%.

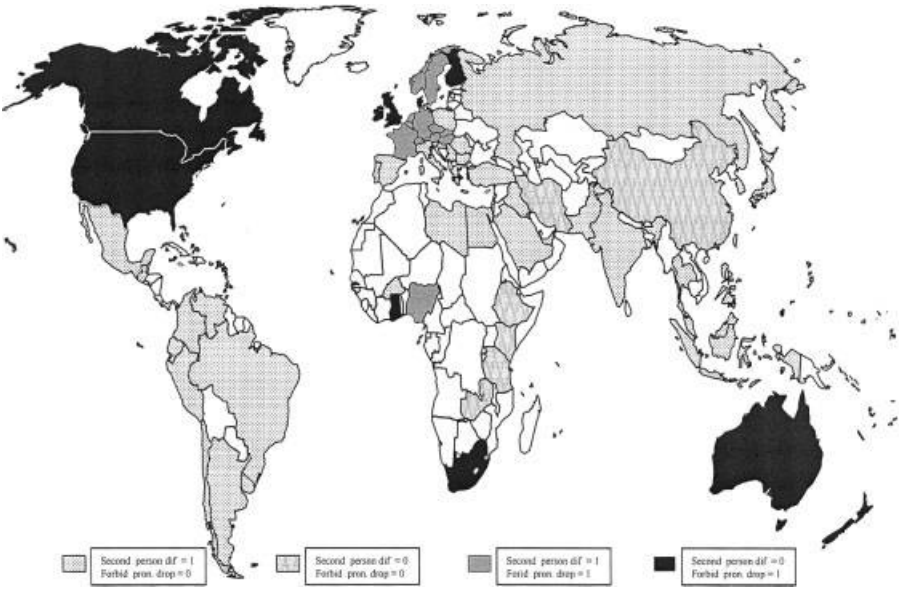

FIGURE 4. Language map of the world.

multilingual countries. Where I have data, I thus redefined the variables *No pronoun drop* and *2nd person differentiation* as a weighted average of the languages spoken in those countries, with weights given by the percentage of the population actually speaking that language. The results are similar if this weighting is not done and the original data by Kashima and Kashima (1998) are used instead.[11]

Figure 4 illustrates the variation in the rules concerning the use of pronouns in the available sample (the multilingual countries are displayed with the color of the most spoken language). Clearly, there is an important geographic dimension to these variabes. But some variation within each continent is present, and the multilingual countries (not shown) increase it further. The two grammatical rules display different patterns, although they are negatively correlated (the correlation coefficient between *No pronoun drop* and *2nd person differentiation* is −0.27).

Do language rules explain aggregate values across countries? The answer is illustrated in Table 7. Because aggregate values is a continuous variable, here I estimate by OLS. After controlling for *Primary education in 1930* and for UK and

11. The countries in the sample affected by this weighting are Canada, Singapaore, South Africa, and Switzerland. In a few cases, such as South Africa, a language spoken inside a country is not coded by Kashima and Kashima (1998). In this case it receives a zero weight, as if it was not spoken. Thus, South Africa is coded as if the population speaks either English or Afrikaans, with weights given by the relative weights of these two languages. This problem is only present in a few countries, mainly in Africa, which is under-represented in the sample anyway.

TABLE 7. Language, Values, and Governance across countries: first stage and reduced form.

	Trust & Respect				GADP & bur. quality	
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
No Pronoun Drop	0.19	0.16				
	(0.09)**	(0.08)**				
Second Person Diff	–0.21	–0.20				
	(0.06)**	(0.06)***				
Language			0.20	0.19	0.11	0.10
			(0.05)***	(0.04)***	(0.06)*	(0.04)**
Control for income in 1980-2000	No	Yes	No	Yes	No	Yes
Observations	48	47	48	47	48	47
Adjusted R^2	0.36	0.45	0.37	0.47	0.68	0.84

Notes: Robust standard errors in parentheses.
Additional covariates not shown: primary school enrollment in 1930, UK and French legal origin.
Columns 2, 4, and 6 also control for income in 1980–2000.
*Significant at 10%; **significant at 5%; ***significant at 1%.

French legal origin, the estimated coefficients of the two grammatical rules are significantly correlated with the principal component of values, *Trust & Respect* (column 1), and with the expected sign. The estimated coefficients remain stable to controlling for *income in 1980–2000* (column 2). The result is stable across alternative specifications. In this cross country sample, language is also robustly correlated with *Trust*, although the correlation with the variable *Respect* is more fragile. Hence, the estimated coefficient on *Trust and Respect* largely captures the effect of language on *Trust*.

The estimated coefficients of the two grammatical rules are almost equal in absolute value and with the opposite sign. Because they capture similar channels, to save on degrees of freedom from here on I collapse them into a single variable, *Language*, defined as the difference between *No Pronoun drop* and *2nd person differentiation*. Thus, the expected coefficient of *Language* is positive, and this is what I get and report in columns 3 and 4 of Table 7 (with and without controlling for *income in 1980–2000*, respectively). The estimated coefficient of about 0.20 is not only statistically significant but also large. Because *Language* ranges from -1 to $+1$, it means that switching both grammatical rules from the least to the most favorable to good values would be associated with an increase in *Trust & Respect* of about 40% of the current value for Sweden.

Columns 5 and 6 of Table 7 report the reduced form. Thus, the dependent variable is the quality of government as measured by the first principal component *GADP & bureaucratic quality*. The regressors are *Language*, as well as the remaining covariates, *Primary education in 1930*, UK and French legal origin, and (in column 4) also *income in 1980–2000*. If *Language* is correlated with values, which influence the quality of government, then we should find that language

explains the quality of government. This is indeed what we find. Languages forbidding pronoun drop or that do not differentiate between $T-V$ are associated with better government (the correlation here is mainly with the pronoun drop rule). These results are robust to alternative measures of quality of government, and to alternative specifications of regressors. Note that the effect of language on the quality of government is unlikely to operate through the channel of legal traditions, because I am controlling for legal origin in the regressors. Thus, the estimates are consistent with a cultural interpretation of why language rules are correlated with institutional outcomes.

4.2.5. Second stage estimates. Having established that grammatical rules are correlated with values both within and across countries, and with governance indicators across countries, I now discuss the validity of using them as instrument for values and present the 2SLS estimates.

As argued previously, language evolves slowly over time, almost certainly more so than values. Moreover, the two grammatical rules on the use of pronouns capture deep and stable features of the language (this is particularly true of the rule forbidding pronoun drop). Hence, there is little doubt that they are correlated with distant cultural traditions, rather than with more recently acquired traits. Thus, using *Language* as an instrument for values, we have taken care of the problem of reverse causation.

The crucial issue is whether grammatical rules are also uncorrelated with unobserved determinants of the quality of government, other than values, omitted from the second stage regression. Distant ideas and traditions reflected in current grammatical rules might be correlated with features of political or economic history that influence current governance outcomes through other channels. To rule out direct influence through legal traditions, we control for UK and French legal origin. Controlling for past education also rules out a direct influence through human capital accumulation. As shown subsequently, the results are also robust to the inclusion of other regressors capturing other possible channels of influence. The identifying assumption is that, after controlling for these variables plus values, linguistic rules are uncorrelated with current governance.

Table 8, column 1, reports the estimated coefficient of *Trust & Respect* on the aggregate governance indicator, under this identifying assumption. The component of values explained by language has a positive and significant effect on the quality of government. The estimated coefficient is almost twice as large as under the OLS estimate. A favorable and not implausible interpretation of this increase in the estimated coefficient is that generalized morality is measured with much error, which goes away when *Trust & Respect* is projected on slow moving components of language. An alternative interpretation is that the instruments are not valid, and that the IV estimate also reflects the effect of other omitted variables correlated with grammatical rules. In particular, grammatical rules are

TABLE 8. Values and Governance—2SLS estimates.

	GADP & Bureaucratic quality			
Dependent variable	(1)	(2)	(3)	(4)
Trust & Respect	0.57	0.52	0.60	1.39
	(0.22)**	(0.21)**	(0.17)***	(0.39)***
Also control for		Income in 1980–2000	Constraints on Executive 1960–2000	Settler's Mortality
Observations	48	47	48	21

Notes: Robust standard errors in parentheses.
Instruments for Trust & Respect: Language.
Other covariates included in columns 1–3: Primary education in 1930, UK and French legal origin.
Column 4 includes no other covariates.
*Significant at 10%; **significant at 5%; ***significant at 1%.

likely to be correlated with other cultural features, besides *Trust & Respect*. If these other cultural traditions also influence the quality of government, then this would explain why IV yields larger estimates than OLS.

To further assess the robustness of these estimates, the rest of Table 8 adds other covariates such as *income in 1980–2000* (column 2), and measure of political institutions (constraints on the executive) averaged between 1960 and 2000 (column 3). The coefficient of *Trust & Respect* remains stable and statistically significant. Both covariates are likely to be endogenous to the cultural forces that might influence the quality of government, but as argued previously, under plausible assumptions if anything this introduces a downwards bias in the coefficient of interest (cf. the unpublished Appendix in Acemoglu, Johnson, and Robinson 2001).

Finally, column 4 of Table 8 adds the log of settler's mortality (the historical variable used by Acemoglu, Johnson, and Robinson 2001 as an instrument for institutional outcomes) to the second stage. Unfortunately we are left with only 21 countries, so to save degrees of freedom I drop the other covariates from the first and second stage. Both first- and second-stage estimates remain highly signficant, and in fact the estimated coefficient further increases in size. Of course the sample size is too small to make much of this regression, but it is a further sign of robustness to the specification and to the sample of countries.

5. Values as a Source of Comparative Advantage in Trade

Drawing inferences from cross-country data is problematic because the number of countries is small relative to the number of possible relevant omitted variables. This section pursues an alternative strategy pioneered by Levchenko (2004) and Nunn (2007). The idea in these papers is that good institutions are a source of comparative advantage in international trade for the sectors in which the effects of institutions is most relevant. As shown by Grossman and Hart (1986) and several others, poor contract enforcement results in under-investment if the value

of the investment is highly specific to two contracting parties. Hence, good legal institutions confer a comparative advantage in sectors requiring large relationship-specific investment. By the same logic, generalized morality can be expected to provide a comparative advantage in those same sectors, both indirectly (through better institutions) and directly (through mutual trust).

Levchenko (2004) and Nunn (2007) adapt the empirical methodology of Rajan and Zingales (1998) and show that countries with good law enforcement specialize in sectors with high "contract intensity" (i.e., where relationship specific investment are more important). Thus, they estimate an equation like

$$Exports_{ic} = a_i + b_c + \gamma f_i \; Factor\ endowments_c + \beta z_i Q_c + \varepsilon_{ic},$$

where $Exports_{ic}$ denote exports (in logs) in country c and sector i, a_i and b_c are sector and country fixed effects, f_i is a measure of factor intensity of each sector and $Factor\ endowments_c$ are endowments of physical and human capital in each country. The variable of interest is the last one, where z_i denotes the "contract intensity" of each sector, and Q_c is the quality of legal institutions, measured by perceptions of respect for the rule of law. Thus, the parameter of interest β is identified by the interaction of a sector variable and a country average. The inclusion of country and sector fixed effects means that we only need to worry about potentially omitted variables varying both at the country and sectoral level at the same time.

5.1. OLS Estimates

Here I apply the same methodology to the data in Nunn (2007), but replace or supplement the quality of legal institutions with values as measured by *Trust & Respect*. The prediction is that the estimated coefficient β is positive, as in Nunn (2007): Better values lead to specialize in "contract intensive" sectors. The sample includes 222 sectors in about 65 countries, although a fraction of the observations is lost when factor endowments are included in the regression. Contract intensity of each sector is computed from the US input output table using data by Rauch (1999) and is defined as the fraction of intermediate inputs that are not sold on an organized exchange and are not reference priced in a catalogue; it is assumed to be the same in all countries.[12]

12. I am grateful to Nathan Nunn for making his data available. Exports refer to 1997. Nunn (2007) uses two alternative definitions of contract intensity: the fraction of inputs not sold on an organized exchange; the fraction of inputs not sold on an organized exchange *and* not reference priced. I use the latter, but the results are not very different using the former definition. Factor intensities are aso measured in the US and they are assumed to be the same in all countries. Nunn (2007) defines all variables precisely.

TABLE 9. Values and comparative advantage in trade—OLS estimates.

	Log of Exports				
Dependent variable	(1)	(2)	(3)	(4)	(5)
Contract intensity × Rule of law	6.12				
	(0.29)***				
Contract intensity × Trust & Respect		2.59		1.96	
		(0.12)***		(0.10)***	
Contract intensity × Trust			5.84		5.26
			(0.18)***		(0.18)***
Skill intensity × skill				1.02	0.93
				(0.15)***	(0.14)***
Capital intensity × capital				0.03	0.05
				(0.02)	(0.03)
Observations	22598	12799	12799	7862	7862
Adjusted R^2	0.72	0.69	0.69	0.73	0.73

Notes: Robust normalized beta coefficients in parenthesis.
Country and sector fixed effects always included.
Observations refer to sectors and countries.
*Significant at 10%; **significant at 5%; ***significant at 1%.

Table 9 reports the OLS estimates. To facilitate the comparisons, inside the parentheses I report the standardized beta coefficients rather than the robust standard errors. Significance levels are still denoted with asterisks based on robust standard errors. Column 1 reproduces the estimate of Nunn (2007): Countries with better legal institutions export more in the sectors with higher contract intensity. Columns 2 and 3 replace legal institutions with values interacted with contract intensity, as measured by *Trust & Respect* or *Trust* alone. Both variables are highly significant and with the expected positive sign: Better values are a source of comparative advantage, just like better legal institutions. When we measure values by the variable *Respect*, its estimated coefficient is also positive and significant, although smaller and less robust than for the other two indicators (results not reported). The standardized beta coefficients of values are also economically relevant (although smaller than for legal institutions): an improvement in values interacted with contract intensity by one standard deviation increases exports by about 15% of its standard deviation. Columns 4 and 5 add factor endowments (interacted with factor intensities). This is important to ensure that the estimated coefficient of *Trust & Respect* does not just reflect the effect of a better-trained workforce. Skill intensity is statistically signficant, but the estimated coefficients of values remain largely unaffected. The standardized beta coefficients of values are about the same order of magnitude as that of skill endowments, and much larger than that of capital. Thus, values seem to be a source of comparative advantage in trade at least as relevant as measures of factor endowments.

Despite the inclusion of country and sector fixed effects, identification of a causal effect from values to trade could fail because of reverse causation (specialization in high contract intensity sectors induces better institutions, which in

turn improves values, rather than vice versa) or due to an omitted variable varying across countries and sectors. Hence I re-estimated the model using the two grammatical rules coded above as instruments for values, interacting both of them with contract intensity. The first- and second-stage estimated coefficients remain significant in a variety of specifications of the other regressors: with and without factor endowments, and irrespective of whether or not I add dummy variables for legal origin (UK, French, and German) interacted with contract intensity. Given the small cross-country variation in the grammatical rules used as instruments and the many covariates included, the findings are robust. The results are reported in a previous version and available upon request.

5.2. Inspecting the Mechanism

What lies behind the correlation between values and the pattern of specialization? Do values have an independent effect on specialization, or does their effect on exports operate entirely through better institutions? To credibly answer this question we need two independent exogenous sources of variation in values and institutional outcomes that we could use as separate instruments. Unfortunately this is not the case, because legal origin and grammatical rules (all interacted with contract intensity) help to explain both values and legal institutions. Even treating values as exogenous and instrumenting law enforcement with legal origin does not work, because legal origin accounts for a small fraction of the variation in law enforcement once values are taken into account. Nevertheless, we can still explore the correlations in the data under more restrictive assumptions.

Suppose that, contrary to what I argued up to this point, both law enforcement (meausered by the variable *Rule of Law*) and values (measured by *Trust*) are exogenous.[13] We can then run a horse race between the two. As shown in columns 1 and 2 of Table 10, the estimated coefficients on both variables are statistically significant. The standardized beta coefficient of *Trust*, reported in parentheses, is about 5%. The estimated effect of legal enforcement is much larger, however, with a standardized beta of about 30%. Taken at face value, this suggests that values do not have a large independent effect on trade patterns. If *Trust* induces better institutional outcomes as argued previously, however, then the estimated coefficient of the *Rule of Law* variable is biased upwards, whereas the estimated coefficient of *Trust* has a downwards bias (see the unpublished appendix in Acemoglu, Johnson, and Robinson 2001 for a more detailed discussion).

A plausible conjecture is that, if values are an independent source of comparative advantage (besides the induced effects through better functioning

13. *Rule of Law* is the survey based indicator of the quality of law enforcement used by Nunn (2007) as a measure of institutional outcomes.

TABLE 10. Values and Institutions as sources of comparative advantage—OLS estimates.

	Log of Exports			
Dependent variable	(1)	(2)	(3)	(4)
Contract intensity × Rule of law	5.69	5.21	3.61	2.15
	(0.33)***	(0.32)***	(0.28)**	(0.09)
Contract intensity × Trust	1.93	1.32	–0.36	2.94
	(0.06)***	(0.04)*	(–0.02)	(0.07)**
Sample	Full	Full	Above median Rule of Law	Below median Rule of law
Factor endowments	No	Yes	Yes	Yes
Observations	12799	7862	4079	3783
Adjusted R^2	0.70	0.73	0.73	0.63

Notes: Robust normalized beta coefficients in parentheses.
Country and sector fixed effects always included.
Observations refer to sectors and countries.
*Significant at 10%; **significant at 5%; ***significant at 1%.

institutions), this is more likely to show up when law enforcement is weak. The reason is that, if legal institutions don't work well, contracting parties need to rely on mutual trust, or other informal arrangements (cf., for instance, Kranton 1996). I thus allow the estimated coefficient of both values and institutional outcomes to vary across groups of countries, splitting the sample in half according to the quality of law enforcement. Column 3 of Table 10 includes only the countries with law enforcement above or equal to the median country in the sample, and column 4 includes only countries in the bottom half of the sample. Both values and institutional outcomes are assumed to be exogenous, so the previous caveat on the likely direction of the bias applies here as well. The estimates confirm that values do have a stronger independent effect on exports if law enforcement is weak. Whereas in the upper half of the sample only law enforcement has a positive and statistically significant estimated coefficient, in the bottom half of the sample the opposite is true: *Trust* has a positive and significant estimated coefficient, whereas the estimated coefficient on *Rule of Law* is positive but no longer significant. Thus, as expected, values seem to supplement law enforcement when institutions are weak.[14] In a different context, Guiso, Sapierza, and Zingales (2004) report a similar finding: Social capital has a stronger positive effect on financial development in the Italian provinces where courts are less efficient (measured by the number of years to complete a first-degree trial).

6. Within-Country Evidence

Drawing inferences from cross-country data is difficult, because countries differ in so many economic and political dimensions that omitted variables are a

14. When the variable *Trust & Respect* is used, rather than *Trust*, the results are weaker.

relevant concern. This section explores regional variation inside a small number of homogeneous European countries. Formal national institutions have been in place in these countries for 150 years or more. Yet within several countries there is a variety of political histories. Controlling for country fixed effects removes the effect of the common national institutions and policies. I then study the within-country (regional) variation to understand both the economic and political effects of different regional values, as well as the historical origins of these values. The section draws on Tabellini (2005), although some of the data sources and details are different from those of that paper.

Other contributions have exploited within country variation to study the effect of cultural attitudes. Putnam's (1993) seminal work on the functioning of local governments in Italy is among the first to stress the relevance of social capital within countries, and Guiso, Sapienza, and Zingales (2007) further supports Putnam's hypothesis. Knack (2002) found a strong correlation between trust and the quality of management practice among US states; using religious composition of the state as an instrument for trust, he concludes that aspects of social capital closely related to values and reciprocity are more relevant to explain government performance, compared to indicators of social capital measuring associations or informal socializing.

6.1. Values and Economic Development

As in Tabellini (2005), the data refer to 69 regions in Belgium, France, Italy, the Netherlands, Portugal, Spain, the UK, and West Germany. Unlike Putnam (1993) and Knack (2002), I don't have indicators of government performance and the dependent variable is alternatively the level of regional per capita output in 1995–2000, or its growth rate during 1977–2000. Values can influence regional economic development through a variety of channels: from the functioning of the public administration (such as courts or local governments), to behavior inside private organizations (see for instance Ichino and Maggi 2000 on moral hazard in different branches of a large Italian bank), to criminal activities in the region.

Values are measured by *Trust & Respect* in the region, obtained from all available waves of the *World Value Surveys*. Of course, these are not representative samples of the regional population. To exclusively focus on within-country variation, country fixed effects are always included. I also control for *Current education* (measured by primary and secondary school enrollment in the region around 1960). Although primary school enrollment is very high in all European regions, secondary school enrollment in 1960 varies much more, so that *Current education* ranges from about 50% to about 100% depending on the region. Finally, I also include as regressors two historical variables proxying for economic development in the region about 150 years ago, when some European countries

TABLE 11. Values and economic development in the regions of Europe.

	Per capita output 1995–2000	Trust & Respect	Per capita output 1995–2000	Trust & Respect	Growth 1977–2000
Dependent variable	(1)	(2)	(3)	(4)	(5)
Trust & respect	0.78		1.03		2.08
	(0.19)***		(0.44)**		(0.88)**
Past constr. on executive		0.07		0.06	
		(0.02)***		(0.02)***	
Log per capita output 1977				0.15	–1.32
				(0.07)**	(0.36)***
Estimation	OLS	OLS	2SLS	OLS	2SLS
Observations	67	67	67	67	67
Adjusted R^2	0.63	0.80		0.81	

Notes: Robust standard errors in parentheses.
Other included regressors: country fixed effects, Current education, Urbanization in 1850, Literacy in 1880.
Columns 3, 5: estimated by 2SLS, where the instrument is Past constraints on executive.
*Significant at 10%; **significant at 5%; ***significant at 1%.

like Italy and Germany became a unified nation. They are the literacy rate around 1880 (*Literacy in 1880*) and the rate of *Urbanization in 1850* (measured as the percentage of the regional population that lives in cities with more than 30,000 inhabitants). Data sources and more precise definitions are provided in Tabellini (2005).

After controlling for these regressors, there remains a strong positive and statistically significant correlation between *Trust & Respect* and the level of output per capita. Column 1 of Table 11 displays the OLS estimated coefficient. If this was a causal effect, about half of the difference in output per capita between Lombardy and Campania, regions in Northern and Southern Italy, respectively, could be attributed to differences in values between these two regions.

Once more, to cope with reverse causation or omitted variables bias, I estimate by 2SLS. The instrument for values is the quality of political institutions that ruled the region several centuries ago. Tabellini (2005) coded the average constraints on the regional executives between 1600 and 1850 (measured at 50-year intervals), adapting and extending the criteria in POLITY IV and exploiting similar work by Acemoglu, Johnson, and Robinson (2005). Checks and balances on the executives result from either a body of political representatives or from an independent judiciary. This variable is called *Past contraints on the executive*.

This estimation strategy thus rests on two premises. First, current values reflect the quality of distant political institutions. Regions where despotic governments exploited citizens are likely to have inherited a culture of mistrust and limited morality. And conversely, a republican regime reinforces positive values

if productive entrepreneurs participate openly in the political organization of society, the rule of law is respected, supreme authority is constrained by checks and balances. This hypothesis is testable and, as shown column 2 of Table 11, it is supported by the data.

Second, to be a valid instrument, distant political institutions should not directly influence current regional development, after controlling for *Current education* and past economic development as measured by *Literacy in 1880* and *Urbanization in 1850* (besides the country fixed effects). Thus, suppose that regions ruled by bad governments in the distant past inherited worse public infrastructures. I assume that 150 years of unification and national policies designed to help poorer regions make up for that. To the extent that some poor regions still lack adequate infrastructure today, I attribute this deficiency to the effect of adverse values rather than to lack of resources. Bad political institutions in the distant past are a cause of current under-development only because, by leaving poor values in the local community, they induced waste and misallocation of public investment, but not because time has been insufficient to make up for the adverse initial conditions. This is not an unreasonable assumption, but it cannot be tested.

Column 3 of Table 11 displays the 2SLS estimates. The component of regional values explained by distant political history has a positive and significant association with current output per capita. Here too, the coefficient is higher than the OLS estimate in column 1. As shown in Tabellini (2005), the result are very robust to adding other regressors, alternative measures of values, or alternative estimation strategies.

Finally, columns 4 and 5 of Table 11 repeat the excercise with growth of per capita output between 1977 and 2000 as indicator of performance. To allow for conditional convergence, the specification includes initial per capita output in 1977. The other regressors are as defined herein. As shown in column 4, the variable *Past constraints on the executive* remains a strong and significant determinant of regional cultural values. This is important because it suggests that values are shaped by distant political history even after controlling for economic development in the mid-1970s. By column 5, the component of regional values explained by distant political history has a positive and significant association with regional growth. If the estimated coefficient captured a true causal effect, growth in Southern Italy would have been higher by over 0.5% per year on average since the mid-1970s if its values had been comparable to those of Northern Italy—a very relevant effect. Here there is an additional estimation problem, however, besides the possible invalidity of the instrument. The likely endogeneity of per capita income in the mid 1970s (included as an additional regressor) might introduce an upward (and not a downward) bias in the estimated coefficient of interest (the effect of values on growth), given the likely patterns of true but unobserved correlations (see again the unpublished appendix in Acemoglu, Johnson, and Robinson 2001).

6.2. Values and Political Accountability

As emphasized by Putnam (1993), values are likely to influence the functioning of government institutions also through voters' participation. Voters who share norms of generalized morality are likely to demand higher standards of behavior on their elected representives are more willing to bear the cost of voting and of acquiring information, and might be more likely to vote based on criteria of social welfare rather than of personal benefits. This conjecture, although plausible, has not been directly tested before, at least to my knowledge. In ongoing preliminary work, Stella and Tabellini (2007) take a step in this direction exploiting Italian election data also studied by Chang and Golden (2004).

In Italy prosecutors cannot investigate elected representatives unless they first obtain authorization to do so by Parliament. Prosecutors' requests to proceed with criminal investigations (called *RAP* from here on) are public knowledge. Moreover, under the PR electoral law for Parliament that prevailed in Italy after World War II and until the early 1990s, voters could express a preference vote for individual candidates in open lists. We thus study how preference votes received by the incumbents are influenced by news of *RAP* for non-ideological crimes, focusing on heteroegenity across electoral districts. In particular, we ask whether voters in regions with higher average *Trust* and *Respect*, or with higher *Past constraints on the executive*, punish incumbents who received a *RAP* more than in other regions.[15]

The unit of observation refers to incumbent candidates standing for re-election in the Italian Parliament in the postwar period until the early 1990s. Thus, we have an unbalanced panel with over 5,000 observations, covering seven legislatures (data are missing for a few legislatures), where the individual is the incumbent politician and time denotes legislatures. The dependent variable is the number of preference votes received by the incumbent (expressed in logs), and the variable of interest is a dummy variable that equals one if in the previous legislature the incumbent has received a *RAP*, and 0 otherwise. The variable *RAP* is entered alone and interacted with observable features of the region to which the electoral district belongs, namely in sequence the variables *Trust, Respect*, and *Past contraints on the executive* described in the previous section.[16]

The estimates are reported in Table 12. Columns 1–3 include dummy variables for the electoral district and for the incumbent's gender. Columns 4–6 include candidate fixed effects. All columns also include as additional regressors the number of previous legislatures served, the incumbent's age and age

15. Chang and Golden (2004) also studied how voters react to news of a request to proceed with a criminal investigation, although on a smaller data set, but did not focus on heterogeneities across electoral districts.

16. The variables *Trust* and *Respect* are those used in Tabellini (2005) and refer to the World Values Surveys in the 1990s only. Data sources are described in Stella and Tabellini (2007).

TABLE 12. Effect of RAP on preference votes received by incumbents—OLS estimates.

	Log of preference votes received by incumbent					
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
RAP × Past constr. on executive	–0.09 (0.03)***			–0.06 (0.03)**		
RAP × Trust		–1.28 (0.64)*			–1.52 (0.54)**	
Rap × Respect			–0.88 (0.40)**			–0.82 (0.41)*
RAP	–0.18 (0.05)***	0.36 (0.23)	0.51 (0.26)*	–0.08 (0.06)	0.52 (0.19)***	0.54 (0.28)*
Fixed effects	District	District	District	Candidate	Candidate	Candidate
Observations	5658	5658	5658	5658	5658	5658
Adjusted R^2	0.41	0.40	0.40	0.16	0.16	0.16

Notes: Robust standard errors in parentheses, clustered by districts.
Columns 1–3: Fixed effects for districts and legislatures and dummy variable for the incumbent's gender.
Columns 4–6: Fixed effects for candidate and legislatures.
Other regressors included in all columns: No. of previous legislatures served, age and age squared, dummy variable for belonging to a party in government.
Adjusted R^2 refers to overall in columns 1–3, within in columns 4–6.
*Significant at 10%; **significant at 5%; ***significant at 1%.

squared, a dummy variable for belonging to a party in government, and dummy variables for each legislature (because these variables are time-varying they are also included in columns 4–6 along with the candidate fixed effects). Standard errors are robust and clustered by districts. Irrespective of the specification, voters in regions with a better political history, or with higher values of *Trust* and *Respect*, punish incumbents more for having received a *RAP*. The estimated coefficients and the numerical values of the variables imply that on average receiving a *RAP* results in a loss of prefeence votes of about 5%. But the effects differ across districts. In the regions with the worst past political institutions, or the lowest values of *Trust* and *Respect*, votes received increase slightly, although generally by a negligible amount. On the contrary, in the districts with the best political histories or with the highest values of *Trust* and *Respect*, votes received drop by as much as 20% to 35%, depending on the specification.

7. Discussion

7.1. Taking Stock

Two robust findings emerge from the evidence presented in previous sections. First, distant political institutions have left a mark in current attitudes and values, as measured by *Trust* and *Respect*. This is evident from the micro data on second generation US citizens. Descendents of immigrants from countries that over a

century ago were ruled by more democratic political institutions, are more likely today to display generalized trust and respect for others. It is also confirmed by aggregate data on European regions. Current values consistent with generalized morality are more widespread in regions where centuries ago executive powers were constrained by the prerogatives of independent judiciaries, or by a chamber of political representatives. Although the precise mechanism of cultural transmission remains to be pinned down, the inference that political history influences current attitudes and values is robust and not dependent on controversial identifying assumptions.

The second finding concerns the contemporaneous link between values and institutional or economic outcomes. This link emerges from a variety of samples. Aggregate cross country data reveal that countries where generalized morality is more widespread have better governance indicators and specialize in sectors that rely on well functioning legal institutions. European within country data show that regions with more *Trust* and *Respect* are more developed today, and have grown faster since the mid 1970s. Within Italy, voters in regions with higher indicators of generalized morality are also more willing to punish political incumbents who misbehaved. Because values, too, are endogenous, causality here can be inferred only under the additional identifying assumptions extensively discussed in previous sections.

7.2. A New Research Agenda

These findings are entirely consistent with the existing evidence that motivated this paper, namely, the strong link between distant colonial history and current institutional outcomes. But they suggest a novel interpretation of those results and a new research agenda. Recent efforts in political economics seek to explain the endogenous evolution of institutions and their current functioning as the equilibrium outcome of a struggle over the distribution of income, where powerful élites seek to retain the rents captured thanks to their political power (cf. for instance Acemoglu and Robinson 2008). The evidence discussed in this paper, instead, points to a different set of issues.

The first and most obvious question is how do individual values influence institutional outcomes. In principle, this can happen in several ways: through bureacuratic behavior, through voters' behavior, or by making citizens more or less law-abiding. Which of these alternative channels is more important in practice? How relevant is the distinction between limited and generalized morality to explain individual behavior, and can it be pinned down more precisely?

A second crucial question is how do values evolve over time. Why do current values reflect the functioning of political institutions in the distant past? What is the precise mechanism of cultural transmission for values supporting generalized

morality? Does it take place within the family, or in other environments? Does it reflect purposeful deliberation or is it an unintended byproduct of other activities?

A third related question concerns the interactions between values and contemporaneous incentives. As incentives change, how do individual values adapt? Are there feedback effects going in both directions? In particular, as values consistent with generalized morality become more widespread, what is the impact on economic incentives? And how are political equilibria affected?

Several recent contributions address some of these novel questions with the traditional tools of economic theory, rational choice, and equilibrium analysis. Bisin and Verdier (2001) pioneered a model of cultural transmission based on the deliberate and rational choices of altruistic parents who mold the preferences of their offspring. This approach has since been applied in a variety of contexts (see the references quoted by Bisin and Verdier 2005). Other papers, such as Anderlini, Gerardi, and Lagunoff (2007), Benabou and Tirole (2006), Benabou (2008), Guiso, Sapienza, and Zingales (2008), and Fernandez (2007a), study learning and belief formation, within the family or by a rational individual decision maker—see also the references in Guiso, Sapienza, and Zingales (2008). This research effort is very promising and has already yielded important insights.

In recent work (Tabellini 2008) I have tried to exploit the insights of this recent theoretical literature to study how culture influences institutional outcomes. The theoretical results speak directly to some of the questions just listed. The model applies the framework of Bisin and Verdier (2001) to study cooperation in a prisoner's dilemma game with spatial matching, adapted from Dixit (2004). The distinction between limited and generalized morality is captured by the range of transactions where individual values sustain cooperation—whether in transactions within a narrow or large range of individuals. Values evolve endogenously in a dynamic equilibrium, as rational parents choose how much effort to put in transmitting their own traits to their offspring.

The equilibrium of the model highlights strategic complementarities going in both directions. As values evolve towards generalized morality in society at large, the incentives to cooperate over a large range of situations are strengthened, because individuals are less fearful of meeting a cheating opponent. And vice versa, if incentives improve so that the scope of cooperation expands to a larger range of matches, values also gradually improve over time, as parents find it more expedient to transmit generalized morality to their offspring.

Adding endogenous policy choices (or endogenous formal institutions) in a political equilibrium creates further complementarities, as individual values also shape voters' behavior. This creates hysteresis, in the sense that the (unique) steady state equilibrium to which the economy converges depends on initial conditions. If the economy starts out with widespread diffusion of values consistent with generalized morality, it converges to a steady state with strong external enforcement of cooperation by well functioning institutions and values supporting generalized

morality. If instead it starts out with a large numer of individuals who share values of limited morality, then it converges to another steady state, with poor external enforcement and poor individual values.

Thus, the model can account for the two findings described in previous sections, namely the influence of past political institutions on current individual values, and the contemporaneous correlation between diffusion of generalized morality and institutional outcomes. Yet, causality does not run in only one direction. Both values and institutions influence each other, with mutually reinforcing effects.

The model also has additional implications, that relate the equilibrium evolution of values to the pattern of likely future transactions. The diffusion of generalized morality is hurt if transactions are very localized and mainly take place within a narrow range of individuals; but globalization and very dispersed patterns of transactions can also be detrimental to the diffusion of sound cultural traits under specific conditions. Intuitively, the pattern of future transactions is taken into account by rational parents when they transmit their own values to their children.

This theoretical literature is still in its infancy, and much more remains to be done, both at the core theoretical level (how to model cultural transmission and how to integrate values in a model of rational choice) and with regard to specific applications. But it would be wrong to view this new line of research as antithetical to ongoing work on political economics. On the contrary, integrating this new perspective in the research agenda of political economics is a first order priority, that can yield fundamental new insights in the economic analysis of political institutions.

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