The Evolution of National Constitutions

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ABSTRACT

A large body of scholarship places considerable weight on the role that national constitutions play in promoting order and development. To what degree are these institutions fixed "rules of the game" or fluid outcomes, responsive to changes in underlying primitives? In this paper, we develop a dynamic measure of constitutional similarity to show that the typical national constitution is hardly fixed. We find, in contrast, evidence of a large degree of fluidity and change: over one-third of all variation in constitution writing is driven by within-country changes. We then investigate broad trends in constitution writing and find that across the twentieth century there has been a convergence in constitutional forms of government. Finally, we provide evidence that this trend has been toward documents that contain diffuse centers of power and numerous well-defined, positive, rights.

Keywords: Comparative politics; political economy; comparative political economy

Introduction

It has become the dominant view that for nations to succeed they must establish the right set of formal political institutions (Acemoglu *et al.*, 2005; Acemoglu

and Robinson, 2013; Rodrik *et al.*, 2004). In particular, a wide range of both empirical and theoretical scholarship places considerable emphasis on the role of national constitutions in ensuring stability and growth (La Porta *et al.*, 2004; North and Weingast, 1989; Persson and Tabellini, 2005). Typically, work in this vein treats constitutions as fixed "rules of the game" and then attempts to understand how actors behave taking these rules as given. In this paper, we exploit data on over 1,000 features of hundreds of national constitutions from 1789 to 2010 to construct a dynamic measure of constitutional similarity. We then use this measure to show that the typical national constitution is hardly fixed, finding in contrast, evidence of a large degree of fluidity and change.

Before various forms of institutionalism obtained ubiquity in the study of political economy, positive political theory actively debated the degree to which institutions are fixed or whether they, instead, reflect "congealed tastes" of social actors susceptible to well known problems of aggregation (Krehbiel, 1988; Riker, 1980; Shepsle, 1979; Shepsle and Weingast, 1981). Broadly, this line scholarship can be divided into those that treat "institutions as rules" and those that treat "institutions as equilibrium" (Calvert, 1995; Greif and Kingston, 2011; Hindriks and Guala, 2015). In the former, institutions induce particular equilibria, enforcing stability in the shadow of preferences that could otherwise result in cycling. In the latter, institutions reflect the underlying distribution of tastes and power. Here, although equilibria may exist, they are contingent upon the underlying stability of these primitives.

In this paper, we construct a measure of constitutional similarity to engage empirically with this debate, searching for evidence of stability in the basic law of states: national constitutions. To start, we document the frequency with which countries alter their constitutions and use our estimate of constitutional similarity to describe the magnitude of these changes as well as the factors that make change more or less likely. We find that more than one-third of all variation in the content of constitutions is explained by within-country changes. We then show that this within-unit variation is explained by both gradual and discontinuous adjustments to these documents. Next, we use our measure to describe factors that explain cross-country variation in constitution writing, providing evidence that a key determinant of the cross-sectional variation in constitutional similarity is driven by patterns of colonial history. Former colonies maintain constitutions that are quite similar to those of their former colonial powers.

Finally, our measure of similarity allows us to investigate broad trends in constitution writing. We show that across the twentieth century there has been a convergence in constitutional forms of government. This trend is observed in existing states that amend and replace their constitutions as well as in newly formed states that enter our data through the decolonization process. Substantively, we provide evidence that this trend has been toward documents that contain diffuse centers of power and numerous well-defined,

positive rights. In sum, our results provide a more complete picture of how the constitutions of the world are related to one another and the factors that are associated with change and continuity in these institutions.

Besides informing the debate in formal political theory on whether institutions reflect rules or equillibria, our results add the first large-N empirical evidence to a substantial literature in comparative politics that seeks to characterize the evolution of institutions (Streeck and Thelen, 2005; Thelen, 2004). This literature has broadly contrasted various gradualist mechanisms (Mahoney and Thelen, 2009; Pierson, 2004) with discontinuous, punctuated, mechanisms (Abbott, 2001; Aminzade, 1992) theorized to explain institutional change. Empirical evidence in this line of scholarship has almost wholly been restricted to case studies describing patterns of change in a fairly narrow set of industrialized democracies. Our approach allows us to quantify the relative magnitude of both abrupt and continuous changes to national constitutions and, furthermore, investigate some of their underlying causes.

The remainder of the paper is organized as follows. In Section "Data & Estimation", we introduce our data on constitutional features and detail our estimation procedure. In Section "The Single Dimension of Constitutionalism", we discuss how a single underlying dimension captures similarity to an ideal-typical Westminster system of government. Then, in Section "Within-Country Variation", we describe predictors of within country, over-time, change in constitutions. Finally, we consider how constitutions are related cross-sectionally, highlighting how historical legacies persist in constitution writing.

Data & Estimation

To measure the similarity of national constitutions we exploit data collected by the Comparative Constitutions Project (CCP) (Elkins *et al.*, 2014), a repository of national constitutions that includes not only current constitutions but also previous constitutions of current states and the constitutions of states that no longer exist as well. These data are near comprehensive in the number of states included over the time period covered, allowing us to estimate our measure of constitutional similarity for 185 countries between 1789 and 2010. These data track various changes to each constitutions over time. Treating each revision as a new document provides us with 1,297 unique documents.

Besides collecting the text of these constitutions, the CCP uses expert coders to identify various features that could be included in a constitution. Currently, the data contain 1,329 potential features. These describe, for example, the structure of the executive, the process by which the constitution is amended, the method of elections, and the composition of the legislature. Within each of these general topics, specific provisions are then identified. For example, within the topic of elections, the CCP describes whether or

not each constitution contains rules governing the prohibition of particular political parties and what restrictions are placed on who can or cannot serve in the legislature. In the Supplemental Material, we show the different broad categories in the CCP and the distribution of features within those categories.

Using these features, our aim is to derive a measure of constitutional similarity by treating the selection of constitution features as an item-response problem. Data for item-response models reflect responses to a battery of questions indicating whether or not the individual made a particular choice. Commonly, these are answers to test questions (correct/incorrect), roll-call votes (yea/nay), or survey responses (agree/disagree). Our data fit this framework in that they capture a set of binary choices (yes/no), reflecting the decision made by decisive political actors over the adoption of a particular constitutional feature.[1] Using these binary responses to over 1,000 possible constitutional features, our aim is to develop a measure that summarizes the underlying similarity based on strictly formal institutional features of a large number of constitutions and parsimoniously describe how these institutions change over time.

To accomplish this we estimate the following statistical model

$$\Pr(Y_{i,j} = 1 | \rho_i, \alpha_j, \beta_j) = F(\alpha_j + \beta_j \rho_i), \tag{1}$$

which gives the probability that constitution i contains the feature j.[2] Typically, $F(\cdot)$ is the standard normal cdf or the logistic function, yielding a model that is similar to logistic or probit regression with binary data. The key difference between standard logistic or probit regression and this model, however, is that there are no observed independent variables — only latent traits to be estimated. The model produces estimates of three different quantities: (1) the similarity of each constitution — e.g. its the location in the latent underlying space relative to other constitutions — ρ_i; (2) the propensity of each institutional feature to be adopted, α_j; and (3) an estimate of how well the choice of each feature discriminates between constitutions β_j. Our main parameter of interest, ρ_i, the similarity score, allows us to evaluate the major patterns of constitutionalism over the last two centuries. Because we have multiple constitutions for many countries over time our measure is dynamic, allowing us to capture the degree to which both amendment and replacement

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[1]In the Supplementary Material, we provide an example of how we turn each constitutional question into a binary response. We also describe methods and results that explicitly account for correlation in feature groupings and selection (e.g., all features relating to the judicial branch), the correlation of features across potentially clustered countries (i.e., countries within regions or counties with shared colonial histories), and clustering entirely within individual countries (e.g., all French constitutions). Our similarity measure remains nearly identical.

[2]This statistical model is supported by a simple theoretical model of choice where a constitution writer faces a series of decisions over which institutional features to adopt. This model is outlined in more detail in the Supplementary Appendix.

alter constitutional systems across time, within the same state.[3] We estimate this model using the Bayesian IRT approach of Clinton *et al.* (2004).[4]

The measure of constitutional similarity we obtain improves upon many previous approaches. While our measure uses only institutions, others conflate institutions and behaviors that may arise from institutional choices. For example, similar latent variable methods have been used in comparative politics to construct measures aimed at capturing variation in a broader set of national-level institutions (Bollen, 1993; Pemstein *et al.*, 2010; Treier and Jackman, 2008). The goal in those papers is to produce an underlying estimate of democracy based upon the latent classification of component indices of existing measures like Polity and Freedom House. However, to the degree that the components of Polity and Freedom House incorporate behaviors like the observed protection of property rights or freedom of the press and not just institutional features, these procedures do nothing to correct for the endogeneity of behaviors to institutions.

Our approach also endogenously determines the degree to which each particular feature discriminates between documents. Other related classification schemes *a priori* select constitutional features that are "meaningful" without substantial empirical evidence as to why. This is an inherently subjective and potentially biased method of measuring similarity. Law and Versteeg (2012), for example, construct a measure of similarity to the U. S. Constitution by counting the number of rights features shared across documents. However, they select only 60 items and give equal weight to each. Elkins *et al.* (2014) use a much larger data set describing constitutional features but similarly treat each feature with equal weight. For example, the presence of a second legislative chamber is treated with equal weight as whether or not the constitution refers to the arts and sciences.

Others take similar statistical approaches to ours and allow different items to have varying degrees of importance but, nevertheless, only incorporate a subset of constitutional features. Law and Versteeg (2011) and Chilton and Versteeg (2014), for example, use a latent scaling techniques but still restrict the features used to bills of rights. Similarly, Rosenthal and Voeten (2007) estimate the latent dimensions of formal legal procedures of dispute resolution, again disregarding the wide set of additional characteristics contained within constitutions.

While these applications may uncover important variation across particular aspects of national constitutions, by virtue of their limited scope they cannot tell us about entire systems. Moreover, by including only a comparatively

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[3]We also show that the NOMINATE procedure and an optimal classification method yield nearly identical results.

[4]We estimate the posterior distribution using 100,000 draws with a 40,000 burn-in period. We set prior parameters at mean zero with precision of 1 with starting values set to the first principal component of the correlation matrix.

small set of institutional characteristics, these approaches cannot tell us if their results are driven by institutional features not included yet which nevertheless load onto the same dimensions as the particular subset of features they describe.

Our approach advances many of these pre-existing methods of constitutional classification. Instead of selecting a few strictly formal features, we use data on thousands of institutional traits to construct a much more fine grained taxonomy of national constitutions. Moreover, we are agnostic at the outset as to which particular features will discriminate between constitutional systems. We allow the statistical model and the structure of the dataset to give more (or less) weight to items that are particularly discriminating.

The Single Dimension of Constitutionalism

In this section, we present a series of tests that investigate the underlying structure of constitutional systems. Our results indicate that the constitutions of the world can be best described by a single latent dimension. Next, we provide a second set of statistical tests that suggest this underlying dimension reflects a distance from an ideal-typical Westminster form of government.

Dimensionality

In principle the number of latent dimensions that describe constitutions could be large, reflecting the many factors that previous scholars have suggested to differentiate systems of government. For example, presidentialism and majoritarianism might exist as two separate dimensions of constitutional choice. And yet, if presidential systems also tend not to hold majoritarian elections, then there is no need for these two potential dimensions to be estimated separately; knowing the value of one greatly informs us about the value of the other.

As a first cut at determining the number of latent dimensions that best describe the data, we conduct a principal component analysis of the complete document-feature matrix.[5] Figure 1(a) plots the eigenvalues of the 1st through 20th dimensions. The most obvious pattern is that the eigenvalue for the first dimension is more than an order of magnitude greater than the next largest. This decline when moving from one to two dimensions suggests that the overwhelming majority of the variance in our data can be described with one dimension. As additional evidence of unidimensionality, we estimate our measure in one dimension and note the percentage of constitutional features

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[5]Principal component analysis is a method of information reduction that endogenously uncovers the latent dimensions that best account for the most variance in the data. The value assigned to each dimension is called an eigenvalue and larger eigenvalues indicate dimensions that account for more of the variance in the data.
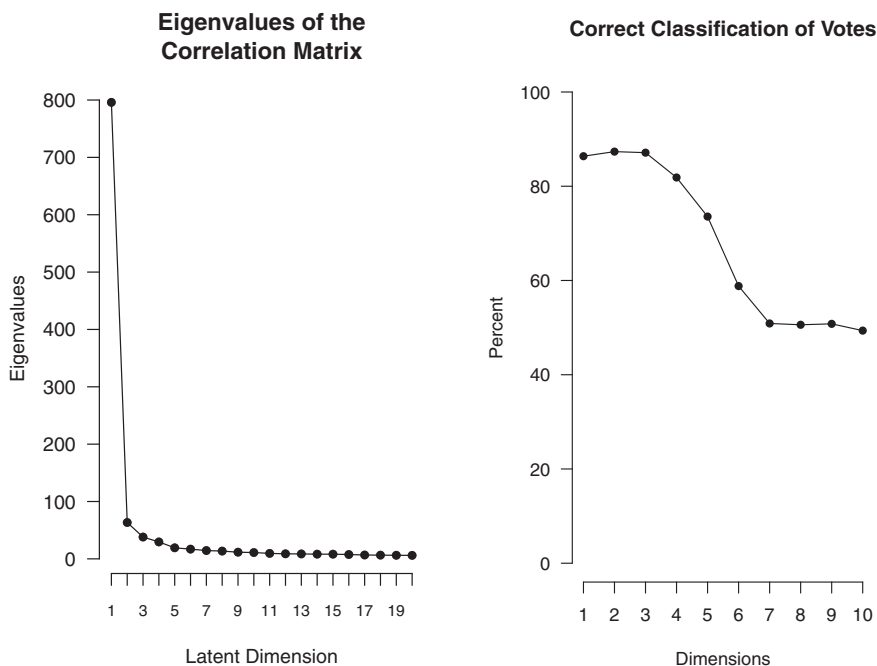
Figure 1: **Measures of dimensionality**. (a) A very large first eigenvalue and a rapid decline in the eigenvalues thereafter and (b) shows that adding additional dimensions does not substantially improve the model. In relation to the latent scaling of constitutions, these results suggest that the data are primarily described by one latent dimension.

that it correctly classified. We then estimate the same model in multiple dimensions. Figure 1(b) shows that in one dimension the model correctly classifies slightly more than 80% of the observations. The inclusion of additional dimensions minimally improves the accuracy of the model up to the third dimension. Thereafter, additional dimensions actually decrease the model's predictive power, indicating we are over-fitting the data with the inclusion of additional dimensions.

In the Supplementary Appendix, we provide further evidence of unidimensionality. Analysis using the aggregate proportional reduction in error (APRE) rather than the percent correctly classified produces a similar pattern, the largest reduction in error occurs in the first dimension with only small increases occurring with the inclusion of additional dimensions. We also show that the NOMINATE cutting lines closely mirror those of the NOMINATE procedure applied to the modern US Congress, a body that scholars agree is best characterized by one dimension of voting.

Interpretation

At its most basic level, the estimated latent measure captures similarities and differences across constitutions. In substantive terms, we provide evidence that this one dimension describes how similar (or dissimilar) each document is to the ideal-typical Westminster constitution. In other words, our estimates represent a latent factor that captures the degree to which each document matches a set of institutions associated with the traditional English system of government, typified by a parliament selected via majoritarian elections and an executive, the Prime Minister, who is chosen by and depends upon the continued support of the legislature. Moreover, the Common Law empowers judges to establish and revise legally binding precedent, leaving to established but unwritten law a host of constitutional features that largely protect negative rights while containing few positive, enumerated rights.[6]

Figure 2 shows the estimated similarity score for the most recent constitution for each state in our dataset. At the left side of the figure are the UK and UK settler colonies — states whose constitutions were directly adopted from the British system. At the other extreme we have constitutional systems with diffuse centers of power, presidential systems, and many enumerated, positive, rights. An example of this is Costa Rica, whose constitution combines proportional representation with a directly elected executive and civil law. With regard to this last feature, Costa Rica differs from the Westminsterian case in that it enumerates a host of well-defined positive political, economic, and social rights. For example, Costa Rica's constitution guarantees not only rights to employment, a minimum income, environmental protection, and education, but also less frequently constitutionally defined fundamental rights like divorce and academic freedom for professors. In contrast, a typical Westmensterian system would leave these features constitutionally undefined or to unwritten law.

To more precisely demonstrate that our estimated latent dimension reflects similarity to the English system, we take a regression based approach and treat our estimated similarity score as the outcome variable and a set of institutional indicators as predictors. In order to avoid using data from the CCP (or functions thereof) as both independent and dependent variables in these estimations, we rely upon three sources of data describing constitutional features, derived from alternative sources.

First we use data from Persson and Tabellini (2005) who code specific features of constitutions for 80 states between 1960 and 1998. This sample includes two features that they operationalized with a pair of dummy variables indicating presidentialism and majoritarian electoral systems, respectively.

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[6]To be sure our estimates are not driven by the presence of the United Kingdom itself in our sample, we can eliminate it from the analysis and re-estimate our model. The results are correlated at $\rho = 0.99$.
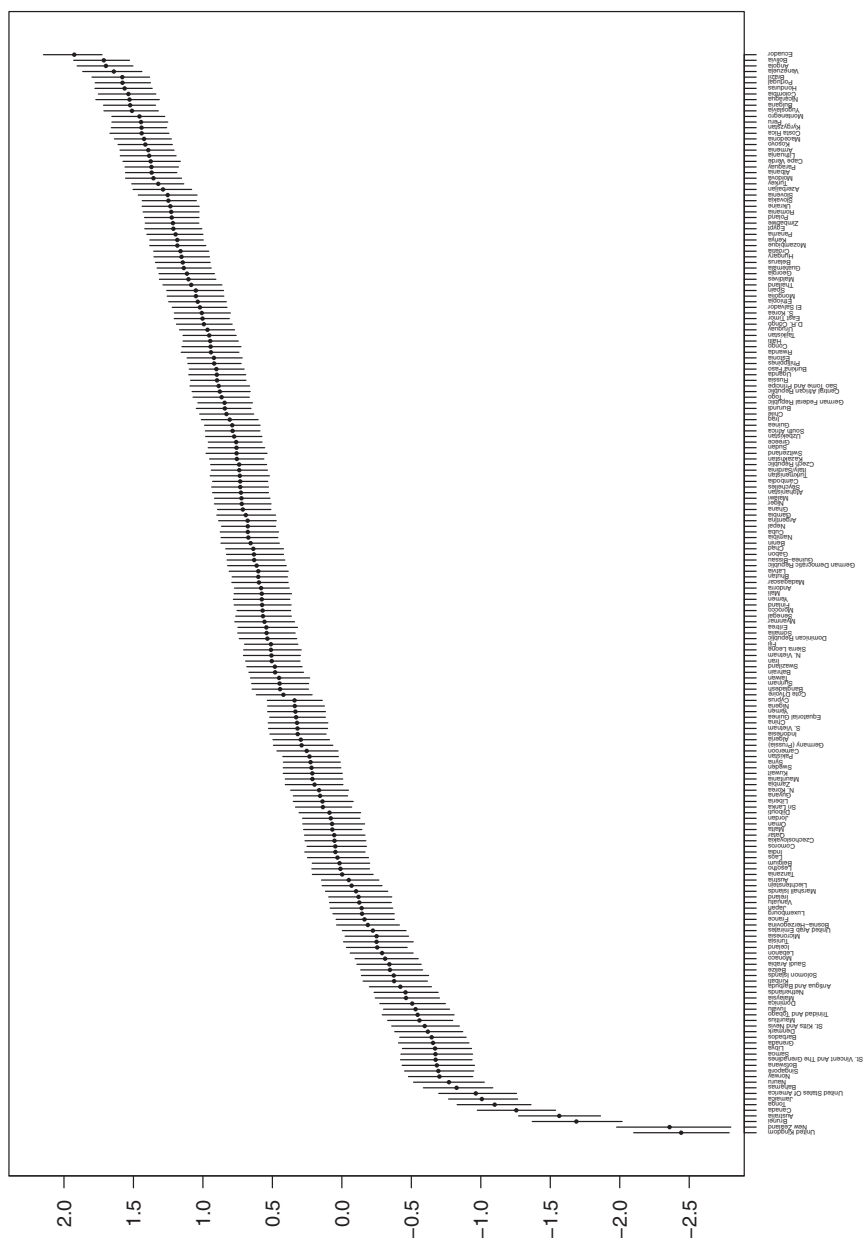
Figure 2: Constitution similarity score — contemporary states.

Second, we use data from Gerring *et al.* (2005) to construct a slightly more fine grained series of dummies indicating presidentialism, semi-presidentialism, and parliamentarism, treating presidentialism as the base category, and indicators for majoritarianism, mixed-member (including block voting) districts, and closed list proportional representation, treating majoritarianism as the base category.[7] Our third source of data come from Wig *et al.* (2015) and describes three features of the executive — whether or not the executive is a member of the legislature, if the executive has the ability to dissolve the legislature, and whether or not the executive is selected via a nationwide election. In addition they measure whether or not elections are conducted via majoritarian rule and mixed-member or list proportional representation. Again, when using the Wig *et al.* (2015) data we treat majoritarianism as the baseline category. Throughout, we use a dummy from La Porta *et al.* (1997) that indicates common law legal origin, and in various specifications, we include measures of the length of each constitution (logged), and the count of the number of enumerated rights contained therein, respectively.

We present results using these data in Table 1. If our latent score captures how similar a constitution is to the English ideal-type, then we expect systems with majoritarian elections and executives who are dependent upon the support of legislatures to have lower scores (the United Kingdom has the lowest score in our measure). We also expect states with common law legal systems, those with few well defined, enumerated, rights left to unwritten norms or statutes outside of the constitution, to similarly have lower scores. Across all models and all three datasets we observe patterns that comport with these expectations.

Using the Persson and Tabellini (2005) data, we see that presidential systems have similarity scores that are further away from the United Kingdom (positive coefficient) and that majoritarianism is associated with systems closer to the United Kingdom (see Models 1–3). We obtain similar results from the Gerring *et al.* (2005) sample (Models 4–6): semi-presidential and parliamentary systems are more likely to have lower scores on our measure than presidential systems and, likewise, forms of PR (mixed-member and closed list) are more likely to have higher scores than majoritarian systems. With the Wig *et al.* (2015) data (Models 7–9), we show that systems with separate national elections for the executive are more dissimilar from the Westminster ideal type, and those where executives are members of the legislature and where executives that retain the right to dissolve the legislature are more similar to the United Kingdom (Models 6–9).

The remaining variables in Table 1 reveal a similar story. Throughout, we find that states whose legal systems are based upon English common law are more likely to have lower similarity scores than states with legal systems based on variants of civil law. Still, it could be the case that our measure

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[7]These data cover constitutional systems between 1960 and 2000.

Table 1: The relationship between westminsterism and constitution similarity score.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Persson and Tabellini (2005)			Gerring *et al.* (2005)			Wig *et al.* (2015)		
Presidentialism	0.86	0.53	0.48	—	—	—	—	—	—
	(0.04)	(0.04)	(0.03)						
Semi-presidential	—	—	—	−0.13	−0.15	−0.32	—	—	—
				(0.04)	(0.03)	(0.03)			
Parliamentarism	—	—	—	−0.72	−0.52	−0.43	—	—	—
				(0.03)	(0.03)	(0.02)			
Majoritarianism	−1.04	−0.61	−0.40	—	—	—	—	—	—
	(0.05)	(0.05)	(0.03)						
Mixed-member/block vote	—	—	—	0.75	0.35	0.20	0.52	0.25	0.14
				(0.05)	(0.04)	(0.03)	(0.03)	(0.03)	(0.02)
Closed-list-PR.	—	—	—	0.69	0.27	0.21	0.39	0.20	0.19
				(0.04)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)
Executive: nationwide election	—	—	—	—	—	—	0.48	0.39	0.18
							(0.03)	(0.02)	(0.02)
Executive: member of legislature	—	—	—	—	—	—	−0.25	−0.04	−0.08
							(0.03)	(0.02)	(0.02)
Executive: can dissolve legislature	—	—	—	—	—	—	−0.26	−0.16	−0.34
							(0.02)	(0.02)	(0.02)
Common law	—	−1.08	−0.42	—	−1.17	−0.53	—	−1.15	−0.61
		(0.05)	(0.05)		(0.04)	(0.03)		(0.04)	(0.03)
Document length (logged)	—	0.50	0.06	—	0.42	−0.002	—	0.50	0.10
		(0.06)	(0.04)		(0.04)	(0.03)		(0.03)	(0.03)
Number of features (logged)			4.56			4.76			3.87
			(0.19)			(0.14)			(0.14)
R^2	0.51	0.68	0.86	0.38	0.59	0.83	0.32	0.58	0.76
N	1,047	1,028	1,028	2,358	2,092	2,092	2,989	2,727	2,727

Heteroskedasticity robust standard errors shown below OLS estimates of the first dimension of the constitution similarity score. Smaller coefficients indicate similarity to the United Kingdom and similar systems. The first two columns use the data on constitutional systems covered by Persson and Tabellini (2007). Columns 3 and 4 use data from Gerring *et al.* (2005). Columns 5 and 6 are from the Wig *et al.*'s *Institutions and Elections Project* (2015).

is simply capturing document length and that constitutions most similar
to the Westminsterian ideal-type simply contain very few constitutionally
explicit features. We show, however, that this is not the case. Even after
conditioning upon the length of each document, each of the other characteristics
of Westminsterian systems (parliamentarism, majoritarianism, common law,
etc.) remain significant (Models 2, 5, 8). Furthermore, when we condition on
the number of explicit features contained in each document, the coefficient on
the length variable is almost wholly attenuated, indicating that the variation
explained by length is, in fact, largely being driven by the explicit enumeration
of rights (Models 3, 6, 9).[8]

Within-Country Variation

We now decompose the variation in our measure of similarity into the portion
explained by differences across countries and the portion explained by changes
within countries as they alter or replace their constitutions altogether. The
ability to differentiate between these sources of variation sheds light on the
degree to which constitutions represent fixed institutions or, by contrast, are
a dynamic reflection of preferences and shifts in the *de facto* distribution of
political power. Of the total variance in our similarity score, 34% is due to
changes within countries while the remaining 66% is explained by differences
across countries. The large proportion of variation due to within-country
variation suggests that constitutions are fluid documents responsive to changes
in preferences, tastes, and power.

    To start, we explore temporal variation in our data. In Figure 3(a), we
plot the average similarity score over time. Between 1800 and 2010 this
figure shows a clear upward trend, indicating that the average constitution in
our data became increasingly dissimilar from a typical Westminster system
towards states with presidentialism, diffuse power centers, PR elections, and
a host of enumerated rights. Likewise, in Figure 3(b), we plot the standard
deviation in our similarity score (measured in each year) against time. Here,
we see a reduction in the variance over time. This decline in variance coupled
with the increasing average in our similarity score implies a convergence in
constitutional documents away from those based on a typical Westminster
system.

    To be sure that this result is not driven by the addition of new — post-
colonial — states that may have composed fundamentally distinct constitutions,
we split our data into two samples: states that had constitutions before 1950
and those that promulgated their first such document after 1950. We present

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[8]In the Supplementary Material, we show distributions of constitution length and number
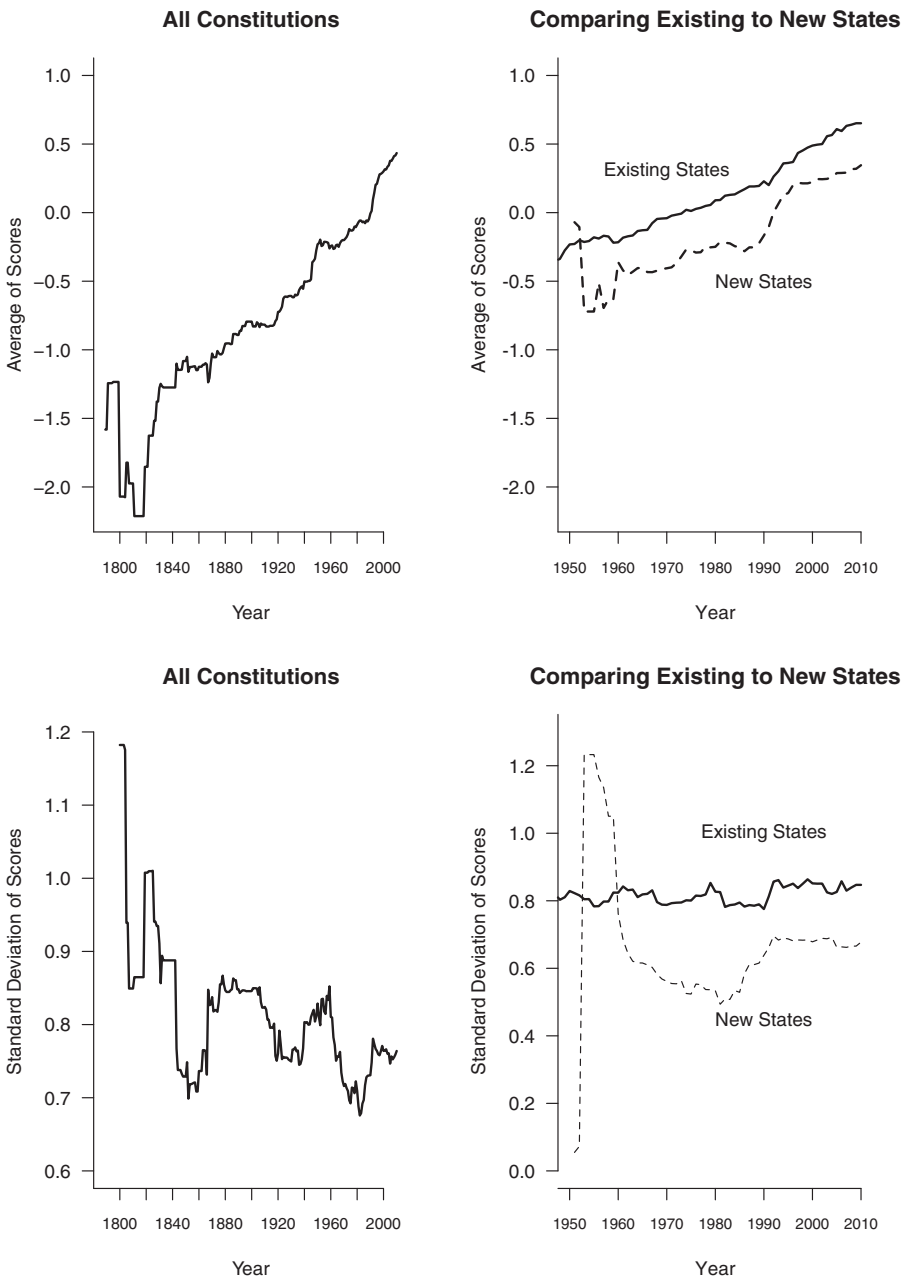of features for all of the documents in the data.

Figure 3: (a, c) The average constitution score over time. (b, d) The standard deviation of constitution scores over time.

results for these two samples in Figure 3(c,d). In Figure 3(c), we show that the upward average trend in constitutional similarity is nearly identical for both new and old states. However, in Figure 3(d), when we look at the standard deviation over time, the trend amongst existing states is flat, indicating that all of the post-war decline in variance is driven by new states.

To better evaluate the rate at which the typical country's constitute changes, we estimate a dynamic panel model of the following form:

$$\Delta\text{Cscore}_{i,t} = \lambda\text{Cscore}_{i,t-1} + \eta_i + \upsilon_t + \epsilon_{it} \qquad (2)$$

where Cscore is our measure of constitutional similarity, η_i is a country specific effect, υ_t is a common time effect, and $\epsilon_{i,t}$ is a mean zero random disturbance. The parameter λ gives the average annual rate of convergence, or the degree to which a constitution today is related to the constitution of the previous year. We present estimates of Equation (2) in Table 2. The first two columns give OLS estimates of λ and, to account for the possibility of Nickel (1981) bias, in the last column we present a Blundell–Bond system GMM estimate of the same parameter.[9] In Column 2, we include a second lag which is statistically indistinguishable from zero. In models not shown, the inclusion of additional lags similarly produce null effects. In all models, we include the full set of country and year effects.

Across specification, we estimate an annual convergence rate of between 7% and 8%. Derived from the most conservative estimate (Column 1), Figure 4(a) shows estimates of the average annual decay in constitution writing. Here, we

Table 2: The convergence of national constitutions.

	OLS		GMM
λ_1	−0.07	−0.08	−0.08
	(0.01)	(0.02)	(0.01)
λ_2		0.01	
		(0.02)	
N	10,930	10,737	10,930

Dynamic estimates of convergence. λ_1 gives the estimate of the convergence rate from an estimate of Equation (2). The first two columns estimate this via least squares. Column 3 gives parameter estimates from the Blundell–Bond system GMM estimator, using lags/levels as instruments. Column 2 includes 2–9 a second lag, given by λ_2. Standard errors, clustered by country, are shown below OLS coefficients.

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[9]We do this using lagged differences and levels 2–9 as instruments in the levels and differenced equations, respectively.
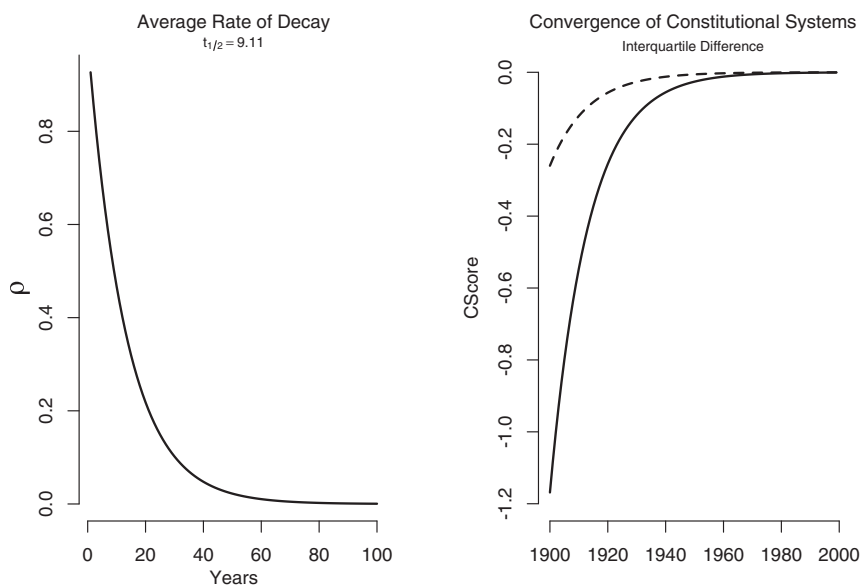
Figure 4: The decay of constitutions. (a) The average rate of decay for constitutions estimated from the first column of Table 2. (b) From the same model, we simulate the predicted convergence of hypothetical constitutions at the observed interquartile range in 1900.

plot the estimated within country correlation against time, giving the decay rate of the average constitution. The half life from this model (the amount of time for the within-country correlation to be equal to 0.5) is just over 9 years.[10] Sixty years from its initial promulgation, we estimate an average country's constitution to be completely uncorrelated with the original document. To further demonstrate this, in Figure 4(b) we take our estimate from Column 1 and simulate the predicted convergence of hypothetical constitutions at the observed interquartile range in 1900. We see that by 1960, these constitutions are predicted to be essentially identical.

Accounting for Change

So far we have shown that in just over two generations the typical country completely replaces its constitution — a constitutional lifespan more than three times longer than that estimated by Elkins *et al.* (2009). In part, this is because our outcome of interest is qualitatively different. Whereas they

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[10]This is equal to $t_{1/2} = \frac{\log(0.5)}{\log(1+\lambda)}$.

are interested in understanding the factors that predict the time between the promulgation of new constitutions, we focus on the magnitude of year-to-year changes in the *content* of these documents. That is, they code the total replacement of constitutions as any new document, regardless of the actual changes in content that result. Since their measure does not tell us about the magnitude of changes and, moreover, because it may very well be that replacement documents strongly reflect their predecessors, we focus upon the changes in content.

With our measure, we can also estimate the magnitude of the average difference between amendments to and replacement of constitutions. To do this, we regress a measure of absolute change $|\Delta \text{Cscore}_{i,t}|$ on the CCP's indicator variables that describe whether a constitution has been amended or replaced (treating no change as the baseline category) and, as in the previous analysis, the full set of country and year fixed effects. This result is given in the first column Table 3. Here, we find that, on average, an amendment is associated with a 0.03 change in our similarity score while an entirely new constitution is associated with a 0.34 change. In the CCP data the average state amended its constitution about every 6.5 years and adopted an entirely new constitution just under every 20 years. The within-country standard deviation in our similarity score is equal to 0.52. Thus, while small adjustment via amendment can alter the substantive content of constitutions, gradual change of this sort occurs too infrequently to overtake the wholesale replacement of documents as the main driver of within-unit change.

To further investigate the underlying events that drive large changes in our measure, in columns 2–4 we regress the absolute change in constitutional similarity on two indicators of changes in the *de facto* distribution of power. First, derived from Polity IV's indicator of "political instability," we code years in which there is a breakdown in order and then years in which there is a resumption of political order. Based on these data, 17% of countries experience at least one breakdown and resumption of political order. Second, from Boix Miller and Rosato (2013) we code changes in the franchise, coding years in which, based upon their measure, there are transitions to and away from democracy. forty-four percent% of countries in the data experience a transition towards democracy while 28% experience a move away from democracy.

In Column 2 of Table 3, we give the main results of this analysis. The collapse of political order is associated with a small and statistically insignificant change. In contrast, the resumption of political order is associated with an average change of 0.13 in our similarity score (approximately four amendments or one-third of a new constitution). We take this as evidence that the resumption of stability after a period of internecine conflict reflects change in the underlying *de facto* and, as a consequence, *de jure* distribution of power. We find similar results for transitions to and away from democracy. The point estimate for transitions to democracy, 0.10, is double that of those

Table 3: Political transitions and constitutional change.

Outcome: $|\Delta\text{Cscore}_{i,t}|$	(1)	(2)	(3)	(4)
Amendment to constitution	0.03			
	(0.004)			
New constitution	0.34			
	(0.03)			
Collapse of political order		0.02	0.05	0.07
		(0.04)	(0.03)	(0.04)
Resumption of political order		0.13	0.12	0.08
		(0.08)	(0.07)	(0.04)
Transition to democracy		0.10	0.05	0.04
		(0.04)	(0.02)	(0.02)
Transition away from democracy		0.05	0.04	0.04
		(0.03)	(0.03)	(0.02)
Event window	0	0	$0-1$	$0-2$
N	10,930	9,410	9,246	9,038

In each model, the dependent variable is the absolute change in the constitution score from the previous year. The first model shows the average change in the constitution score due to amendments to and replacements of the constitution. The next three models show the results of changes to societal order on changes to the constitution score. Standard errors, clustered by country, shown below OLS coefficients. State and year intercepts not shown, but included. The final column shows the proportion of state–years where the event occurs.

away from democracy, indicating that expansions of the franchise (based on the Boix et. al. coding) result in more dissimilar constitutions than subversions of democratic rule. In Columns 3 and 4, we conduct the same exercise, extending the window over which we measure our independent variables by 2 and 3 years, respectively. The results from this analysis remain qualitatively unchanged.

To briefly summarize, in this section we have shown three empirical patterns: (1) constitutions display a great deal of within-country variation, equal to over one-third of the total variation; (2) The typical state has a constitutional half-life of about 9 years, implying that in just over two generations the average country wholly replaces their constitution; and (3) While states undergo both gradual change through amendment and wholesale replacements of their constitutions, most of the within-unit variation is explained by abrupt change that occurs through the complete replacement of constitutions. These events, in turn, are correlated with changes in the distribution of *de facto* political power.

Cross-Country Variation

While a sufficient proportion of variation in our measure of similarity is caused
by within-country changes to question the notion that constitutions are fixed
institutional constraints, it is nevertheless the case that a majority (64%) of
the variance in our similarity score is caused by cross-country differences. In
this section, we explore patterns of colonial history, a common explanation for
cross-country variation in national constitutions, and show that our measure of
similarity broadly corresponds with patterns of colonization. Where European
powers imposed their rule around the globe, upon independence former colonies
borrowed from their former colonists when composing their new constitutions.
Indeed, a substantial literature has pointed to colonial origins as a cause of
institutional diversity across the globe (Acemoglu and Robinson, 2001; Glaeser
and Shleifer, 2002; Rodrik *et al.*, 2004). Because of this, states' colonial
histories have been frequently exploited to identify the effects of institutions
on political-economic outcomes (Beck *et al.*, 2003; Djankov *et al.*, 2003; Porta
et al., 2007).

To measure similarity to colonists we construct three variables that indicate
the average absolute distance of each observation in our data from the British,
French, and Spanish constitutions, respectively. To create this measure, we
take the distance from each country's constitution to each of these former
colonial powers in each year and then take the average of those distances across
all years. We then regress each of these measures on a series of dummies for
each colonial power, treating the set of countries that were never colonized as
the baseline category.[11] The results, given in the first three columns of Table 4,
indicate that in each case, being the former colony of either Great Britain,
France, or Spain, has a large and statistically significant relationship with the
former colony's constitution. For example, in Column 1, we find that former
British colonies have a similarity score that is 0.48 closer (hence the negative
coefficient) to the British constitution than the comparison group (states that
were never colonized). Similarly, in Column 2, we see that former French
colonies have a similarity score that is 0.40 closer to the French constitution
than the comparison group. In each model, the former colonies of the state from
which we are measuring distance have the largest (most negative) coefficients
(bolded for clarity), indicating that they are, on average, the most similar
($p < 0.05$).

Constitutional Borrowing and Influence

While former colonies are closely related to their former colonists, they are
hardly shackled to their pasts. As we have shown, constitutions are fluid,

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[11]Taking the average of our outcome over time and regressing on the time-invariant
colonial history yields the "between estimator" of cross-sectional differences.

Table 4: Between estimates of colonial history and constitutional similarity.

	(1) UK	(2) France	(3) Spain
Distance from:			
Former British colony	**−0.48**	−0.36	0.41
	(0.12)	(0.07)	(0.10)
Former French colony	−0.14	**−0.40**	0.02
	(0.11)	(0.07)	(0.10)
Former Spanish colony	0.31	0.31	**−0.33**
	(0.13)	(0.09)	(0.10)
Other colonies	−0.03	−0.17	0.08
	(0.17)	(0.11)	(0.14)
N	190	190	190

In each model the dependent variable is the average absolute distance of each country's constitution from the country listed at the top of the column. For example, Model 1 shows the average distance from the UK constitution. Negative coefficients indicate more similarities. The omitted category in each model is countries that were never colonized. Robust standard errors shown below OLS coefficients.

frequently altered, sets of rules. Indeed, in our data, 93% of states amend their constitution at some point in time while 59% of states create a new constitution to replace a previous document. A substantial body of work in comparative legal studies argues that when composing new constitutional documents, authors explicitly emulate prominent model constitutions (Choudhry, 2007; Howard, 1996; Schauer, 2004). In this section, we use our measure of similarity to evaluate the degree to which conjectured model constitutional texts serve as templates for constitution writers.

To start, we examine the constitution of the United States, a document legal scholarship points to as highly influential (Billias, 1990, 2009; Friedrich, 1967). For example, nearly the entire Argentine constitution of 1853 and large parts of the Brazilian constitution of 1891 were copied word for word from the US constitution. Although it has been widely regarded as a "hegemonic model" for constitution writers (Klug, 2000, p. 597), some have questioned its continued influenced. Using a rough measure of similarity based on a limited number of shared features, Law and Versteeg (2012), for example, find a declining influence of the US constitution over the twentieth century.

To evaluate the potential change in influence, we construct a measure of similarity to the US constitution, $|\text{Cscore}_{c,t} - \text{Cscore}_{us,t}|$, which gives absolute distance along our measure of similarity of a given country, c, in a given year, t to the US Constitution. In Figure 2, we plot the average of this distance
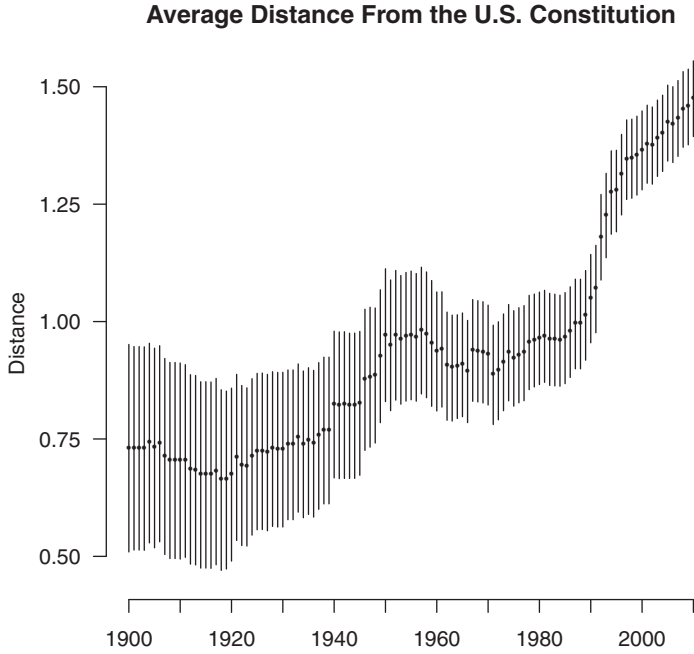
Average Distance From the U.S. Constitution

Figure 5: Similarity of constitutional systems to the United States over time.

in each year from 1900 to 2010.[12] Plotted in Figure 5, over the course of the twentieth and early twenty-first centuries, we see that, indeed, the average constitution has become less similar to that of the United States, doubling in its dissimilarity from an average of 0.75 in 1900 to just under 1.5 in 2010. Using our similarity measure, between 1900 and 2010 the US Constitution changed by only 0.08, indicating that the vast majority of this change in average similarity to the United States is driven by changes in other countries' constitutions away from the United States.

Taking the average decline in similarity to the US constitution as suggestive evidence of its reduced influence, we next ask if there is support for an alternative model that has supplanted it, or if its decline is simply the consequence of a world-wide trend in constitution writing that the United States has, heretofore, been immune from. To accomplish this, we construct a similar set of distance measures and consider the average similarity to four constitutions conjectured to have served as templates for constitution writers in the second half of the twentieth century.

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[12]This is derived from the following regression: $|\text{Cscore}_{c,t} - \text{Cscore}_{us,t}| = \alpha_t + \epsilon_{c,t}$, where α_t gives the average distance from the United States in year t.

Like the United States, France has a long history of constitutionalism and, as such, it might have served as a model text. Indeed, there is evidence that features of French constitution writing, in particular the Declaration of the Rights of Man and Citizen, have had a substantial and lasting impact on the way in which constitutions delineate the rights of the population (Bellamy, 1996). Yet, by our measure, in 1900 the average constitution was about one-third more similar to the United States than it was to France. Plotted in Figure 6(a), we see that this difference persisted until the promulgation of the Fourth Republic's constitution which, rather than serving as a model for other countries, brought it more in line with the world average.

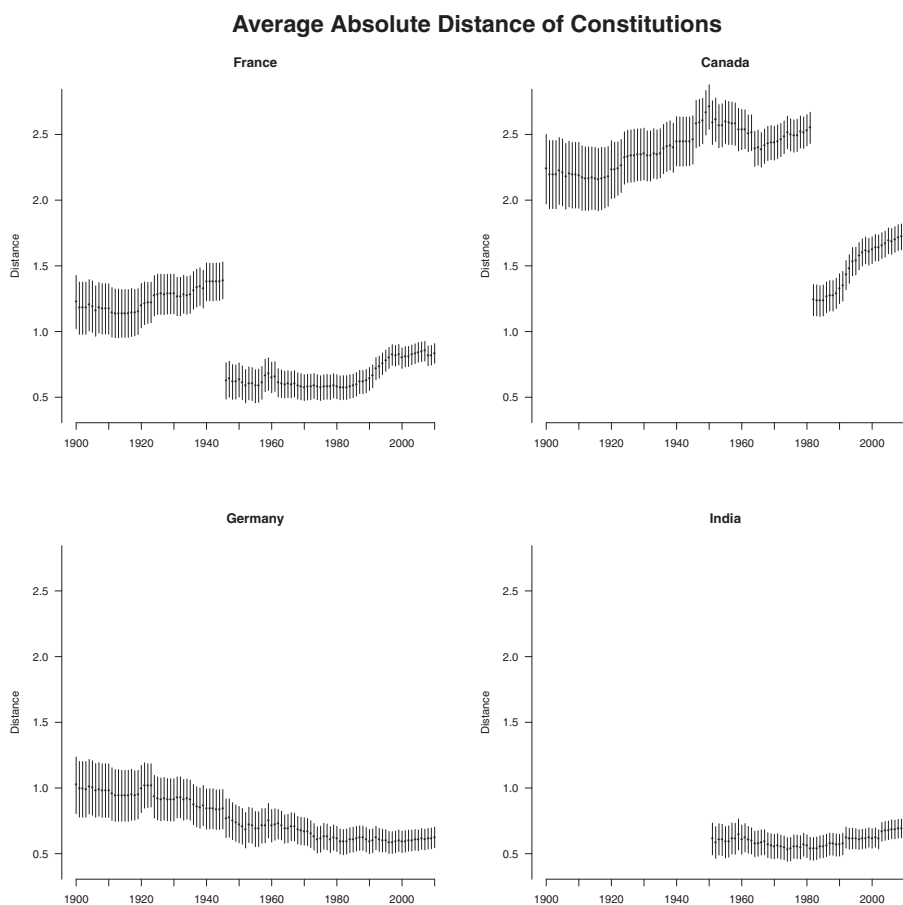**Average Absolute Distance of Constitutions**

Figure 6: Similarity to prominent constitutional systems over time.

Similarly, Canada's constitution after the reforms of 1982 and the introduction of the Charter of Rights and Freedoms has been viewed as a model for constitution writers by scholars and practitioners alike. Justice Ginsburg, for example, offering advice to Egyptian constitution writers put forth the Canadian constitution as a superior model to that of the United States. Nevertheless, when we examine the average worldwide distance from the Canadian constitution two patterns emerge. First, until the Canada Act of 1982, the Canadian constitution was typical of common-law constitutions and quite distant from the mean document (between 2.2 and 2.8 standard deviations). While the amendments of 1982 made the Canadian constitution more similar to the worldwide average than the United States, it has since then become increasingly dissimilar. By the mid-1990s the distance between the Canadian constitution and the world average again exceeded the distance between the average constitution and that of the United States. At the same time, the Canadian score has changed by less than 0.02 through several small amendments since 1982. Thus, given the increase in dissimilarity between 1982 and 2010, it seems implausible that the Canadian constitution has served as a model for other constitution writers. In fact, quite the opposite appears to be the case — Canada's constitution has become increasingly out of step with trends in modern constitutions.

Figure 6(b) displays the average similarity to the German constitution over the twentieth century. In 1900 the Imperial Constitution was more dissimilar to the average document than was the US Constitution by about one-third. Replacement, first with the Wiemar Constitution and then the Basic Law of 1948, has meant that the distance between the average constitution and the German constitution has reduced by one-quarter from its turn of the century high. The German post-war constitution is widely regarded as a model text from which other countries have borrowed, and these results would suggest that this is indeed the case. The average distance from the German constitution over the last half of the twentieth century and first decade of the twenty-first centuries remained quite small and roughly constant over this time.

Written near contemporaneous to the German Basic Law, the Indian constitution of 1949 is similarly viewed as a particularly influential post-colonial constitution. Plotted in Figure 6(c), we see that over the last half of the twentieth century, the average constitution was just as close to the Indian constitution as it was the German. The average dissimilarity score for the Indian Constitution is 0.59 and the average for the German is 0.63. With these data it is difficult to assess whether the high degree of post-war similarity to the Basic Law and Indian constitution are driven by broad trends in constitutionalism or emulation. However, the sharp discontinuities of both Canada and France suggest that this may simply reflect a broad trend away from documents that use the common law to protect negative rights towards constitutions which empower judges to preserve the positive rights of citizens.

Conclusion

Should we take formal political institutions as fixed rules of the game or a fluid reflection of the contemporary distribution of preferences and power? In this paper, we have constructed a dynamic measure constitutional similarity in order to evaluate continuity and change in national constitutions. Using our measure, we then provide evidence that constitutions exhibit a high degree of fluidity and change. Indeed, over one-third of the total variation in our measure of similarity is driven by within-country changes. By our estimate, the average half-life of a constitution is about 9years long, implying that in just over two generations the average country's constitution will be wholly orthogonal to its current governing document. We also show that in general constitutions are trending with a similar trajectory. In the last 50 years, the constitutions of the world have moved away from reflecting the Westminsterian system of government to a system that reflects a system with separately elected branches of government and greater enumerated rights. On the other hand, while one-third of the variation in our measure is due to within country change, we also show that a strong predictor of the remaining two-thirds of the across-country variation is due to the historic, colonial legacy of the country.

Our results provide evidence that while formal political institutions are strongly connected to the past, they should nevertheless be taken as relatively fragile equilibria, endogenous to relatively small shifts in primitives like tastes, interests, and power. At the same time, we show that while both gradual and large change occurs, large punctuated changes driven by changes in the underlying distribution of political power accounts for most of the observed change in constitution writing. Finally, using our measure of constitutional similarity we have evaluated major trends in constitution writing over the last century. Having first demonstrated a convergence in constitutional systems, we then show that the typical constitution has come to create an increasing number of diffuse centers of authority whilst guaranteeing an increasingly large number of well defined positive rights.

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