Geography, Rulers, and Power Concentration (GeoPoC): The pre-modern roots of modern democracy

LONG VERSION

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Where did the system of government now known as democracy come from, and what are its causes? Many studies imply that democracy is primarily an invention of Europe (e.g., Cartledge 2016). Others insist that democracy has global roots and is not “just a western idea” (Sen 2003; see also Isakhan, Stockwell 2011; Taylor 2002).

The question is inflected by a not-so-subtle orientalism (Said 1978). For centuries, European writers have conflated the region and its politics under the rubric of “Asiatic despotism” or “oriental despotism.” It is possible that orientalist perspective is correct. However, one must be wary of conclusions driven by pre-conscious assumptions, especially as European travelers – whose accounts informed the conclusions reached by Montesquieu, Marx, Weber, and many others – were likely to have shared those assumptions (Hobson 2004).

While the course of democracy in the modern era is well-researched (Coppedge 2012; Coppedge et al. 2019; Moller, Skaaning 2013; Teorell 2010), the pre-modern era is not well understood. Even within Europe – the one area where the question has been investigated at some length – there is little consensus among scholars about the sources of democracy (Stasavage 2016).

In this project, we take a wide-ranging approach to the question. To chart the pre-history of democracy, we develop a coding scheme intended to capture limitations on the exercise of power in polities across the Eurasian continent throughout the pre-modern era (from antiquity to the French Revolution). We hypothesize that states with de-concentrated systems of power were not the exclusive preserve of Europe.

Our second objective is to explain variations in regime type in the pre-modern era. We conjecture that geographic factors played a critical role. Specifically, the prevalence of waterways and mountains made it more difficult for rulers to monopolize power.

Our third objective is to test the relationship between pre-modern political organization and contemporary democracy. We hypothesize that polities with a history of power diffusion are more democratic today, suggesting that regimes have deep historical roots extending back hundreds, and perhaps thousands, of years.

The first section of the proposal reviews extant work. The second section introduces our theoretical framework. The third section lays out our empirical approach, which combines large-N cross-case analysis (of grid-cells and polities) with small-N (“most-similar”) comparisons. The final section turns to the question of how, or to what extent, pre-modern patterns of political organization might be regarded as a distal cause of modern regimes.

I. PRIOR WORK

In reviewing prior work we identify two streams of scholarship. The first focuses on the rise of democracy in Europe and the second on geography as a causal factor in shaping political institutions.

The rise of democracy in Europe

The story of democracy in Europe is usually traced back to the Middle Ages, or to Ancient Greece. Suggested causal factors include polity size (Blockmans 1978, 1998; Stasavage 2010), local
government and independent towns (Ertman 1997), feudalism and the closely associated system of estates, i.e., standestaat (Downing 1989; Duby 1978; Hintze 1975; Poggi 1978: ch 2; Strayer 1970), the development of parliaments (Bisson 2001; Congleton 2010; Maddicott 2010; Poggi 1978: ch 3), the organization of the bureaucracy and the military (Bisson 1966; Blaydes, Chaney 2013), warfare and subsequent taxation (Blockmans 1998; Dincecco 2009, 2011; Stasavage 2011), the Catholic Church (Tierney 1966, 1982, 1988), economic development, trade, urbanization, and the bourgeoisie (Bates, Lien 1985; Boix 2015; Pirenne 1963), the development of law (Berman 1983), family structure (Schulz et al. 2018), and ideas arising from the Western intellectual tradition (Pocock 1975).

Evidently, the European experience is open to a wide variety of interpretations. Moreover, all of these causal factors are closely intertwined. (Indeed, we are at pains to assign specific works to specific hypotheses in the previous paragraph, as most accounts enlist multifarious causal factors.) This means that the same recitation of historical events – or regression analysis – is often consistent with more than one causal story.

The intermingling of causal factors would not be a problem if one could distinguish those that are exogenous and endogenous. However, authors disagree on this point. Some regard conflicts among states as primary, others regard them as secondary. Some regard class relations as primary, others regard them as secondary. And so forth. Problems of causal identification persist even where plausible instruments are utilized in a two-stage analysis, as such analyses rest on assumptions that are largely untested and untestable.

An additional problem with the European literature is that most studies focused on the rise of democracy include only one or several cases within the sub-continent and make only scattered references to the non-European world, limiting the terrain upon which their favored theory might be tested.

**Geography**

In the previous section, we discussed historical work that features political, cultural, or economic explanations for the rise of democracy in Europe. A very different approach to explanation rests on geographic factors such as topography and climate. These factors may be regarded as causally exogenous and can also be measured precisely on a global scale, solving two core problems of causal identification.

A number of recent studies highlight the role of geography in channeling the flow of Europeans and European institutions throughout the world during the Age of Imperialism. Acemoglu, Johnson, and Robinson (2001, 2002) and Engerman and Sokoloff (2000) are concerned to explain “good institutions” (understood as the strength of property rights) in Africa and the New World.¹ Gerring and Apfeld (2018) link the diffusion of Europeans to the development of democratic regimes. While these accounts may explain spread of democracy in the modern era they have nothing to say about the origins of democracy.

Studies suggest that geography has long-term effects on social and economic development (Diamond 1992; Michalopoulos 2012; Nunn, Puga 2012) so it seems plausible that climate, soil, topography and other geographic features might also affect the character of political institutions.

¹ In later work focused on democracy (Acemoglu et al. 2019), the authors do not apply their global theory of the diffusion of property rights to regimes, suggesting that they do not view the latter as affected by the same set of geographic factors.
The case seems especially strong in the pre-modern era, when technology was primitive and humans had little recourse from geography’s imperatives.

In a seminal work, Wittfogel (1957) identifies state control of water resources as a source of despotism. In areas where there was a strong need for irrigation and flood control Wittfogel reasons that there would be a consequent need for the development of centralized states to provide those public goods. Because there were no mechanisms of popular accountability operable at large scale in pre-modern societies this led to authoritarian states, whose legacies extend to the present-day. Although often dismissed by historians and anthropologists (Hunt 1989), a recent study by Bentzen, Kaarsen and Wingender (2016) finds some support for this theory which they test in a global sample with an exogenous measure of “irrigation potential.”

Mayshar, Moav, and Neeman (2017) argue that geographic features structured the type of agriculture that arose in ancient civilizations. In areas where agricultural production was highly transparent such as ancient Egypt revenue extraction was facilitated and a hierarchical state apparatus capable of profiting from that revenue resulted. In areas where production was more opaque such as Northern Mesopotamia it was difficult for statemakers to extract revenue at a distance, leading to nucleated settlements and decentralized political control. The argument seems plausible for the chosen cases, though many confounders loom (these regions were different in other ways that might have also contributed to varying political institutions). Nor is it clear how the hypothesis might be generalized and tested across a larger terrain.

Midlarsky (1995) identifies oceans and rainfall as predictors of democracy, which he understands as a product of reduced exposure to warfare. The empirical analysis is limited – featuring some fairly crude measures of the key variables, a single cross-sectional analysis with a sample of 100 or so countries, and a limited number of specification tests. Results are nonetheless robust, though the relationship to warfare – the purported mechanism – is not entirely clear as a matter of theory or empirics.

Welzel (2013; 2014) presents a synthetic argument combining various features of climate and geography into a cool water index, regarded as a root cause of human empowerment and, ultimately, of democracy. The cool water condition “combines (1) fairly low average annual temperatures with (2) continuous rainfall over all seasons and (3) access to permanently navigable waterways” (Welzel 2014: 35). Although the index is highly correlated with democracy it is difficult to interpret as a causal factor, as the aggregation procedure is somewhat circular and is, in any case, composed of a number of diverse components that may interact in complex ways that are impossible to disentangle.

More recently, Gerring, Tollefsen, Wig, and Apfeld (2019) argue that democracy in the present era arises from the existence of natural harbors. By virtue of enhancing connections to the wider world, they argue that harbors foster development, mobility, naval-based defense forces, and global diffusion – and, through these mechanisms, democracy in the modern era.

To aggregate these diverse features, Welzel (2014, on-line appendix: 39) explains, “I weight the rainy/cool vs. dry/hot territorial fraction measure (‘rc-vs.-dh’), the minimum rainfall measure, and the waterway proximity measure for their partial impact on technological progress and recombine the impact weighted measures additively. This is done after transforming each of the three variables into an index with minimum 0 and maximum 1.0: CW-Index = (.69 * rc-vs.-dh + .40 * waterway proximity + .26 * minimum rainfall) / 1.35.” It appears that the crucial weights in this formula are derived from the presumed impact of each factor on technological progress, which seems to pre-judge the question. As it happens, the resulting index corresponds closely to the geography of Europe and North America. Indeed, the top twenty-six scores on this index are attained by countries located in these regions.
On a grander scale, Elis, Haber, Horrillo (2017) theorize that both economic development and democracy arise from a number of geographic features – including a navigable waterway, flat terrain, fertile soils, regular rainfall, and a temperate non-malarial climate – that they summarize as a “transactional complex adaptive system.”

II. THEORETICAL FRAMEWORK

Our theoretical framework builds on the literature introduced in the previous section. We regard geography as the prime mover with social, economic, and political institutions playing a key role as causal mechanisms.

In addressing the development of polities over the long scope of human history it is natural to want to begin at the beginning, with pre-state political organizations. Unfortunately, a consensus has yet to emerge on the question of how these pre-literate societies were governed. Some writers emphasize the egalitarian, democratic, or anarchic (acephalous) quality of bands, tribes, and small villages (Evans-Pritchard 1940; Fortes, Evans-Pritchard 1940; Fried 1967; Glassman 2017; Lewis 1961; Service 1975). This tradition of scholarship seems to offer support for Rousseau’s (1994: 46) assertion that “man was born free.” Others are dubious, pointing to evidence of widespread violence and ingrained social hierarchies, relegating slaves, women, immigrants, or out-castes to the bottom of the pyramid. Price and Feinman (2010: 2) state that “social inequality has been the dominant structuring principle in most human societies over the last 5,000 years or more,” i.e., since the rise of sedentary agriculture.

We shall make no claims on this score. However, we shall assume that – whatever the state of pre-state politics – there were no strong regional differences. It would be problematic for our argument if societies around the world had already developed varying levels of social and political inequality prior to the development of state forms of political organization – approximately 2,500 BCE.

For present purposes, a state (or polity) is understood as a political organization with a fixed territory that the center purports to control (a claim of sovereignty). This is a permissive definition, intended to encompass any “state-like” organization and thus casting a broad net.

Within the category of societies that qualify as states our goal is to understand the distribution of political power. Why was power concentrated in the hands of a single individual or small clique in some polities, and diffused across a larger number of actors in other societies? Why were some leaders able to make decisions in a unilateral fashion while others were constrained by formal laws, informal norms, or countervailing institutions?

We shall refer to this as a question of limited government or power concentration (terms we use interchangeably). While this concept captures key elements of democracy it should not be equated with the latter. That is why we describe the project as the pre-history of democracy. (For further discussion, see Section III.)

To explain variation in power concentration we begin with the assumption that political leaders (aka rulers) generally wish to maximize control over territory, resources, and people, while inhabitants would prefer to constrain rulers so that they are accountable in some fashion. The degree
of power concentration in a state thus reflects the relative power of these two actors. Among inhabitants, we pay special attention to elites, with the understanding that they are the most viable opponents of a power-aggrandizing ruler.

In what follows, we lay out our theoretical framework, which invokes two geographic causes – mountains and waterways (oceans and navigable rivers) – and five mechanisms: (a) state formation, (b) differentiation, (c) collective action, (d) relative resources, and (e) trade/mobility. These interconnecting elements are sketched in Figure 1. Importantly, the specified mechanisms in this framework interact with each other; they should not be regarded as discrete paths from geography to power concentration.

**Figure 1: A Long-run Causal Framework**

<table>
<thead>
<tr>
<th>Mountains</th>
<th>Waterways</th>
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<tbody>
<tr>
<td>Small or decentralized states</td>
<td></td>
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<tr>
<td>Differentiation</td>
<td></td>
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<tr>
<td>Collective action</td>
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<td>Limited resources</td>
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<td>Trade/mobility</td>
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<tr>
<td>Limited government</td>
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**State formation**

Geography structured the formation of states in the pre-modern era. Flat, contiguous landmasses tended to foster large political units – a pattern common in much of Asia, North Africa, and the Middle East. By contrast, territories interrupted by oceans, multiple rivers, or rugged terrain (mountains) gave rise to smaller political units – a pattern common in Europe and the Mediterranean, the archipelagos of Southeast Asia, and the southern tip of South Asia.

Consider the course of military conflicts. Everywhere, rulers desired to expand territory; but these ambitions met with varying success in different parts of the world. Conquering armies in Asia led by Sargon of Akkad (reign: ca. 2284-2340 BC), Cyrus the Great (ca. 600-530 BC), Alexander the Great (356-323 BC), Attila the Hun (ca. 406-453), Muhammed and his successors (ca. 570-661), Mahmud of Ghazni (971-1030), Genghis Kahn (ca. 1162-1227), and Tamerlane (1336-1405)

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3 We use the term “inhabitants” – referring to those permanent residents in the territory over which a ruler claims sovereignty – rather than “citizens,” as the latter is a juridical term that may be variously defined. Athenians could claim political equality among citizens by removing slaves and women from the latter category. By distinguishing citizens from inhabitants we are able to remove this ambiguity.

4 A number of studies have identified geography as a factor contributing to the fragmentation of states in Europe (Braudel 1972: 161-2; Chirot 1985; Jones 1981), sometimes with reference to China (Diamond 1992). Geographic factors behind the size of states have not been extensively researched. Kitamura and Lagerlöf (2015) examine European state borders from 1500 to the present, finding that “borders tend to be located on mountains, by rivers, closer to coasts, and in areas suitable for rainfed, but not irrigated, agriculture.” These findings support our thesis, though it should be noted that the study is restricted to Europe and focused mostly on the modern era.
managed to vanquish and subdue territories stretching across millions of kilometers. Often, these successes were achieved in a matter of years. By contrast, conflicts in the rugged and/or watery environment of Europe and Southeast Asia tended to endure for decades, sometimes centuries, and often with no decisive victory on either side. The Hundred Year’s War (1337-1453) may be regarded as emblematic. Of course, the Roman Empire eventually encompassed most of Europe and the Mediterranean. However, this feat required several centuries and was not repeated until the modern era, which lies outside our theoretical purview. (The lightening success achieved by Napoleon and Hitler suggests that modern methods of warfare were not as constrained by topography as pre-modern methods.)

A telling contrast can be found in the invasions of East and West Asia staged by nomadic groups in Central Asia throughout the medieval and early modern eras. When the Chinese empire weakened sufficiently for Central Asians to advance they were able to conquer – and subsequently rule – the entire sub-continent, twice. When the Roman Empire weakened, pressured by invaders from the steppes, the interlopers were able to chip away, piece by piece, in a process that lasted several centuries. But no single group swept through all of Europe and no alliance of invaders was able to establish rule across the sub-continent. The historic unity of China and fragmentation of Europe were established.

It is not simply the territorial size of states that seems to have been shaped by geography but also their internal structure. Flat, contiguous landmasses tend to foster a more centralized style of rule, while waterways and mounts encourage a decentralized structure. This may be viewed as a product of how states were formed in the first place. It stands to reason that military conquest would lead to a centralized style of rule while negotiated settlements and alliances – including marriage alliances – would establish a more decentralized system of power. We refer to the latter as statebuilding by amalgamation.

Again, anecdotal contrasts confirm our expectations. Alliances such as the Delian League (478-404 BCE) and the Hanseatic League (13th–17th c), confederations such as the Kalmar Union (1397–1523), the Livonian Confederation (1435–1561), the United Provinces of the Netherlands (1581–1795), and the Swiss Confederation (1291–1848), along with loose, imperial arrangements such as the Holy Roman Empire (800-1806), the Crown of Aragon (1137–1716), and the Habsburg Empire (1516-1918) characterized regions dominated by mountains and waterways. Highly centralized political formations such as the empires of China, Persia, and Central Asia tended to be located in areas dominated by flat plains.

Several factors may explain this geographically based divergence in the size and structure of states.

First, mountains and oceans (but not rivers) posed a barrier to travel, especially for large armies. This made it difficult for states to project power – suppressing revolts, collecting taxes, imposing uniform laws and regulations.

Second, mountainous areas were inhospitable to sedentary agriculture, harder to tax, and therefore unattractive to state-builders (Scott 2017). Consequently, highland areas with rugged terrain might be ignored or peacefully amalgamated – in either case, retaining a good deal of autonomy.

Third, rivers and oceans (but not mountains) contribute to economic development, providing a source of protein and a mode of transport, thus facilitating trade. This, in turn, allows for the growth of densely populated areas centered on towns and cities. And this poses an additional
barrier to the territorial expansion of states. It is easier to conquer a poor, sparsely settled area than a densely settled area with a rich economy.

Finally, areas circumscribed by rivers, oceans, or mountains enjoyed a degree of separate-ness, which may have facilitated political organization (Carneiro 1970). Where pre-existing political organization existed, a territory could better defend itself or negotiate a degree of autonomy within a larger empire or confederation (Gerring et al. 2011).\(^5\)

For all these reasons, it was difficult for states to vanquish territories that spanned mountains and water, much less to rule over them in an ongoing fashion – unless significant power was delegated downward, establishing a decentralized style of rule.

**Differentiation**

Mountains and waterways encourage economic and social differentiation. A territory encompassing land at varying altitudes, with a variety of riverine systems and access to the sea was likely to foster a diverse array of agricultural products and some degree of mercantile and artisanal activity. Likewise, mountains, oceans, and (to some extent) rivers often served to demarcate distinctive cultural zones, leading to a fragmentation of linguistic, religious, and ethnic identities.\(^6\)

We must also consider the interplay between differentiation and state formation, as discussed in the previous section. From one perspective, we may appreciate that economic diversity made it harder for states to extract resources, as the costs of monitoring a complex economy were greater than the costs of monitoring a simple economy based on one or two staple commodities. To reduce monitoring costs, territories with diverse economies may have eventuated in smaller states or states structured in a decentralized fashion (Mayshar, Moav, Neeman 2017). In a similar fashion, social diversity complicates the task of state-building (Migdal 1988). A ruler attempting to project power over a diverse populace is likely to be as “foreign,” and hence illegitimate.

From another perspective, economic and social differentiation may be perceived as a *product* of governance. Where authority is fragmented this is likely to entrench cultural differences in a region. If states are small they will cultivate narrow identities, reinforcing cultural diversity across a region. If states are large but ruled in a decentralized fashion leaders will not have the wherewithal to enforce cultural uniformity across a populace.\(^7\)

Since there are strong prima facie arguments for both of these perspectives we shall assume that they are both correct, at least to some extent. Societies and states are interwoven: differentiation fosters fragmentation, and vice-versa. We may view the enduring particularism of Europe, Southeast Asia, and South Asia as a source, and a product, of ongoing political fragmentation during the pre-modern era. Likewise, we may view cultural uniformities across the great plains of North and East Asia as a source, and a product, of large states with concentrated systems of power.

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\(^5\) Granted, tribal units inhabiting a flat plains or steppe region were sometimes united in loose confederations in a “segmentary” fashion (Barfield 1989; Southall 1988). However, such confederations tended to be unstable, and rarely formed the basis for enduring states, or states where the decentralized parts had a say in the disposition of political power.

\(^6\) Michalopoulos (2012) shows the relationship between changes in altitude and ethnic diversity. We presume that oceans and rivers also contribute to diversity.

\(^7\) In making these claim we assume that rulers have a direct interest in aligning the culture of the societies they rule over with the boundaries of the state. This means accentuating similarities and extirpating differences, with the goal of enhancing political legitimacy and easing tasks of governance (Giddens 1985; Scott 1998, 2009).
Let us now consider a third form of differentiation – that which differentiates various organizations. Where social and economic diversity is high and political fragmentation is rampant we can expect various forms of organizational diversity to arise. This includes independent cities, guilds, fraternities, universities, sects, law courts, and so forth. The development of these organizations has a recursive effect on governance, making it more difficult to concentrate power in the hands of a single ruler or clique. Organizational differentiation encourages distinctions between church and state, and between political and legal authority, and between state and civil society.

**Collective action**

To influence governance decisions on a regular basis residents must solve a formidable collective action problem. In pre-modern times this challenge was especially severe as citizens spoke a babble of tongues, were largely illiterate, and had little sense of common identity and purpose (Crone 1989). In addition, communication and transport systems were primitive and there were no mass media. Not surprisingly, it was difficult to muster organized opposition to whomever held the reins of power. Mass mobilization tended to be violent and evanescent, occasioned by extreme hardship (e.g., famine) and incapable of institutionalization. Masses could riot but they could not rule.

Collective action was eased in small polities, or states composed in an agglomerative fashion (such that each of the smaller regions enjoyed a substantial measure of self-governance). Here, people were less numerous and lived in close proximity to each other. This may explain why decisionmaking in bands and tribes is often described as collective (Glassman 2017). Similarly, decisionmaking seems to have been considerably more diffused in city-states than in states encompassing extensive territories (Blockmans 1978, 1998; Hansen 2000: 611-12; Radvan 2010; Scott 2012; Stasavage 2010).

Even so, the historical record contains no example of a state in which the entire body of adult residents exercised political power in a meaningful way. The most inclusive polities such as ancient Athens excluded women, slaves, and migrants – a clear majority of the population. While such exclusions are an affront to the democratic ideal they may have facilitated the development of de-concentrated systems of rule by mitigating the collective action problem. Typically, governing was undertaken by a selected elite – who, by virtue of wealth, education, and location were probably most suited for political activity. By building upon existing hierarchies, these distinctions were naturalized and legitimized (at least to some extent). Importantly, elites in a stratified society were apt to have a sense of themselves as a class apart, with a common set of cultural practices and high levels of endogamy. Naturally, they had a strong stake in defending their special privileges against depredations by the ruler. All these factors presumably enhanced the likelihood that elites could work together toward a common goal, overcoming collective action problems.

In city-states, this privileged governing class might be composed of urban elites – traders, artisans, and the like, forming a nascent bourgeoisie. Guild organizations, formed around a specific craft or trade, provided a pre-existing organization upon which political power could be built, as it was in many Italian city-states (Black 1984; Epstein 1991).

However, most states were too large – or insufficiently urbanized – for an urban elite to play a leading role in politics. In these settings, economic production was rooted in agriculture. Here, the only effective counterweight to the ruler was likely to be the landed elite, who controlled the choicest agricultural land. Accordingly, politics in many pre-modern polities took the form of a drama with two principal actors: the ruler and the aristocracy. In a few polities (e.g., Poland,
Hungary, Korea during the Koryo-Choson dynasties) aristocrats were dominant. In others (e.g., China, Russia, the Ottoman Empire, and the brief “absolutist” phase of many European polities), the ruler was dominant. And in a third set, including Tokugawa Japan, England, and Sweden, one may discern a delicate equilibrium. How this balance was struck determined the extent to which power was constrained.

The importance of hierarchy becomes apparent when one considers polities with less developed (or less consistent) systems of class stratification. In the Ottoman, Chinese (Wong 1997: 92, 107), and Russian (Blum 1961; Kivelson 1996; Kollmann 1987) empires there was no effective social counterweight to the monarch, in part because the landholding classes had little in common, or were unable to meld their diverse interests into those of a common strata, a class “for itself.” By contrast, aristocrats within the Holy Roman Empire or the medieval Frankish empire could effectively coordinate against the monarch, defending their rights and establishing institutions (e.g., parliaments) to constrain the ruler’s power (Bendix 1978).

In summary, the dominant social class – whether it be commercial (as in some city-states) or agricultural (as in most polities) – must be strong enough, and cohesive enough, to counter the power of the ruler. To paraphrase Moore (1966), “No bourgeoisie or aristocracy, no democracy.” Strength and cohesion was possible only if the state was of modest size.

Relative resources

The degree to which power was concentrated or diffused arose, in part, from the balance of resources between the ruler and the most powerful elites – those, that is, who were in a position to limit the power of the ruler. We shall argue that this balance is a product of geography and, secondarily, of the territorial size of states.

Consider that a varied terrain encourages a more complex economy, which in turn is more difficult for leaders to monitor and extract resources from (Mayshar, Moav, Neeman 2017). If so, we would expect that states in areas dominated by mountains and waterways would have been able to extract a lower share of productive resources than states in areas dominated by flat plains.

Now, let us consider the territorial size of states. A larger territory affords more sources of revenue, all things being equal. This is true even if the tax rate is lower, as it is in modern states (Gerring, Veenendaal 2020: ch 13) and as it seems to have been in large pre-modern states such as China (Wong 1997: ch 6). What matters, for present purposes, is not tax extraction per capita or per GDP but rather the absolute size of the revenue available to the ruler relative to that obtained by the largest elite family or corporate group. In small states, we assume that the ruler’s fisc (which we may equate with the state’s fisc in most circumstances) was larger than, but still comparable to, the financial status of wealthiest family or clan. In financial terms, this ruler was primus among pares. In large states, however, we assume that the ruler was able to extract resources (of varying amounts) from all the territories that he controls (even if only in a tributary fashion). There is no reason to assume that the resources of the most powerful family or clan appreciated in size with the size of the state. When new territories were conquered they were generally shared with new men – those, in particular, who had helped win them. Indeed, a principal goal of a canny leader was to divide wealth among the elite so that no single family or clan would be in a position to challenge his rule. Hence, territorial expansion generally meant that the leader’s revenue increased at a greater rate than other elites.
We must also consider the role of personnel, which formed a vital resource in pre-modern times—a time of human scarcity and technological limitations, in which wealth and military might was largely the product of human labor. It is evident that a larger state offers a larger reserve labor pool, who can be tapped for military service or other state goals (either as salaried employees, corvee labor, or slaves). Even if armies and bureaucracies were smaller on a per capita basis (Gerring, Veenendaal 2020: chs 13-14), it is their absolute size that mattered for determining the relative power of rulers and elites.

Let us now consider the importance of this resource balance between rulers and elites. Where rulers controlled a larger share of the resources in a society (both capital and manpower) they could pursue mammoth engineering projects, e.g., public buildings, castles, bridges, harbors, canals, aqueducts, temples, and pyramids. They could pay artists to adorn their palaces, writers to praise their glory, and musicians to sing their praises. They could fund elaborate ceremonies and public displays of pomp and circumstance. They could generate all the trappings required for a “court society” (Duindam, Artan, Kunt 2011; Elias 1983) or a “theatre state” (Geertz 1980). Since these efforts were likely to center on the capital city or the ruler’s palace, they would further entrench the power of the center over the periphery.

Rulers could use their extensive lands and funds to buy off potential opponents. Of particular importance were landed aristocrats, who might receive grants of land, special titles and offices, and gifts. With respect to Russia, Bendix (1978: 114) notes “the granting of military fiefs in conquered territories was a means of increasing the number of dependent servitors without hereditary rights.” Thus, the growth in Russian lands over the early modern era changed the balance of power between the czar and the Russian aristocracy (princes and boyars). In this fashion, independent aristocracies became service aristocracies, dependent upon the largess of the state.

Finally, and perhaps most importantly, rulers of large states could amass large armies—much larger than any single elite family or clan. Where persuasion was unavailing, rulers could employ coercion to keep their magnates in line.

Because geography and the attendant size of states altered the resource balance between the ruler and elites, we anticipate that a very different set of incentives faced rulers of large and small states. The small-state ruler was in the position of building alliances among elites who could easily defect. The large-state ruler was in the position of command and control; he did not need to bargain in order to achieve consent. Taxes could be raised, armies called into being, and wars prosecuted without consultation or consent.

**Trade and mobility**

Small states with extensive waterways are likely to be oriented toward foreign trade and are also likely to foster mobility. Because trade (the movement of capital and goods) and mobility (the movement of people) are closely linked, we treat them as part of a single factor.

Mobility is enhanced when a state is small, as the nearest border cannot be far away (leaving aside the occasional circumstance of a remote island). Trade dependence is also enhanced, as there is very little prospect that people and natural resources lying within the confines of a small state can provide all the raw materials and products needed for economic development.

Intersecting riverine systems and accessible oceans serve as platforms for the dissemination of opposing views and the ready transport of political dissidents, weapons, and written material. Here, one can expect a high rate of migration and extensive cosmopolitan networks. With easier
ingress and egress, citizens have greater leverage. Rulers have to work hard to retain citizens or to attract new citizens – an essential consideration in the pre-modern era, when people were scarce and human labor power was required for most tasks.

The importance of exit as a political strategy must be appreciated. In pre-modern times, sheer manpower was the primary source of economic and military capacity. A state with a small population produced little surplus for the ruler to exploit and provided few military resources. Increasing size meant increasing wealth and strength (Scott 2017: ch 5). Note also that people were in short supply in the pre-modern era, when most parts of the world were diffusely settled. Consequently, rulers needed to keep the citizens they had, and if possible attract newcomers. In this context, exit may have served as a potent threat (Snell 2001), making it more likely that leaders would consent to share power and abide by constitutional restrictions on their exercise of power. One finds evidence of a Tieboutian dynamic in which rulers of states with ocean access adopted a conciliatory attitude toward citizen demands, including granting special rights. This dynamic was undoubtedly enhanced with respect to commercial classes. Commerce is likely to be highly prized by the state since it brings considerable pecuniary reward, and merchants are more mobile than other citizens, raising the threat of exit (Bates, Lien 1985), and also the enticement of entry. Exit options were also presumably important in emboldening citizens to challenge authority. Note that dissenters faced punishment, including seizure of assets, imprisonment, and death. The option to dissent becomes somewhat less risky if it is possible for endangered citizens to beat a hasty retreat.

Note, finally, that in order to serve an entrepot function, ports along rivers or oceans needed to maintain their openness to the outside world, to provide an effective guarantee of property rights (for both native and foreign investors), and to limit resource extraction by revenue-hungry leaders. A port without these features would attract little business, prompting merchants to move elsewhere. Under the circumstances, it is not surprising that port cities were often granted special privileges, establishing a sanctuary where markets could operate with limited interference from the state (Paine 2013: 304).

By contrast, in regions distant from waterways resources were comparatively thin and wealth took the form of land, an inherently immobile form of capital. Thus, rulers of states with large territory and limited access to rivers and oceans had less incentive to bargain with dominant elites.

This may help to explain why states centered on port cities tended to have more de-concentrated systems of rule than their cousins in the hinterlands. In Southeast Asia, one may compare the hundreds of micro-states in the archipelago region (current-day Indonesia, Philippines, and the Malay peninsula) to the (generally much larger) states dominating the mainland (current-day Thailand, Laos, Cambodia, Myanmar). In Europe, one may compare the smaller polities bordering the Mediterranean and Baltic/North seas with the larger powers centered on the main European landmasses (e.g., Spain, France, the Habsburg Empire).

Caveats

Before concluding this section we must issue three important caveats.

First, in speaking of the influence of geography on political institutions we must consider their relationship across a large territorial expanse. We doubt that a single mountain or river has much impact on the development of a region. However, a mountain range or riverine system may have an immense influence. Likewise, even if a single mountain or river had a very localized effect, that effect is likely to be overwhelmed by regional effects due to the fact that polities are not isolated
containers. They interact repeatedly and forcibly with each other. A “good” geographic slice in a “bad” geographic region may have little opportunity to develop. Likewise, a “bad” geographic slice in a “good” geographic region may be overwhelmed by the characteristics of the neighboring areas.

To measure these geographic features we need to conceptualize geography on a fairly grand scale, e.g., the size of a continent or sub-continent. Likewise, because the Polities are macro-social political phenomena, interacting with each other (Renfrew et al. 1986) and – according to our theory – with the natural environment. Moreover, it is not simply the immediate environment, located in a polity’s core-area (Pounds, Ball 1964), that matters, but also the surrounding environs. We have assumed that states expand until they meet resistance, and we have argued that one sort of resistance is posed by geography. If so, Point A may have an influence on politics at Point B even though they are thousands of kilometers apart.

As such, it is the distribution of geographic features across a fairly broad area that should concern us, not the distribution of features within a single PRIO grid-cell (50x50 km).

First, the geographic factors identified in Figure 1 do not purport to offer an exhaustive account of the influence of geography on political institutions. This is a large topic and there are many possible angles, as sketched briefly in Section I. No single study could afford to treat all of these hypotheses in a satisfactory fashion so we will leave them aside (except as possible confounders in our own analyses).

Second, whatever influence geography may have on human affairs this force is not deterministic. Many factors other than climate, soil, and topography affect the development of political institutions. Accordingly, any geographically based account of politics must be partial, rather than complete. It remains to be seen how much – what portion of the variance – can be accounted for by geographic factors, and what is left, as it were, for other causal explanations.

III. GEOGRAPHY AND PRE-MODERN POLITICS

Having set forth a theoretical framework, we turn to the empirical portion of the study. We begin by reviewing extant work, divided into traditional narrative studies or global datasets. Next, we outline the scope of the current project, the outcome of interest (limited government), and our approach to data collection, coding, and testing in a large-N setting. Finally, we lay out a strategy for case study analysis, focused on cases with different outcomes that share many background conditions.

**Extant narrative studies**

Historians and archeologists along with politically inclined sociologists and political scientists have produced an enormous corpus of work focused on politics in the pre-modern era. This corpus is the primary fodder for our data collection. On its own, however, this corpus does not yield firm answers to our queries about the location, timing, and causes of democratic development.
Narrative studies are often temporally constrained, focused on specific epochs (e.g., antiquity, the Middle Ages, the Renaissance, the early modern era) or smaller periods of time (e.g., a century, decade, or the tenure of a particular ruler). Historical studies also tend to focus on a single country or region.

Several problems arise from this micro-focus. First, large states are favored over small states. This would not be a problem if large and small states were governed in similar ways. However, a central hypothesis of this study is that they are governed differently (Section II). If so, the corpus of narrative studies offer a systematically biased account of politics in the pre-modern era.

Second, some periods and regions are well-studied, and others less so. In the history of democracy, Europe overshadows all other regions. Even the most wide-ranging surveys tend to privilege Europe over other parts of the world (e.g., Cartledge 2016; Dunn 1992, 2006; Eliot 1853; Keane 2009; Maine 1886; Muller 1966; Osborne 2012; Pitkin 1967; Sidgwick 1903; Skinner 1978; Stasavage 2016; Stromberg 1996).

Third, vocabulary used to describe one period or region may be inapplicable – or differently applicable – to another period. Just because scholars use the same term (e.g., “feudalism” or “absolutism”) does not mean they are talking about the same phenomenon. Likewise, when scholars use different terms they may be talking about identical, or nearly identical, phenomena. Conceptual equivalence is difficult to establish.

Occasionally, historical work spans the entirety of Eurasian or world history (e.g., Finer 1997; Fukuyama 2011; Lieberman 2003, 2009; Mann 1986), and a few recent studies that highlight the history of democracy in non-western societies (Isakhan, Stockwell 2011; Taylor 2002). This genre of history-writing dovetails with the approach taken in the present study. However, extant histories with a global reach are more descriptive than analytic, and comparisons are apt to be ad hoc rather than systematic.

In these various respects, narrative history impedes systematic comparison and prevents us from coming to terms with important questions. We need to know which (if any) “European” institutions are limited to the western edge of the Asian continent, and which are more widespread. To do so, we need to develop conceptual frameworks and associated indicators that are truly global (or at least Eurasian) in reach, and can be applied consistently across diverse contexts and time-periods.

Extant datasets

A few datasets aim to facilitate systematic comparisons in the pre-modern world, and these deserve a closer look.

The *Ethnographic Atlas* is derived from an anthropological database compiled by George Murdock (1967: 99) from numerous ethnographies conducted in the early twentieth century as part of the Human Relations Area Files (HRAF) project. The only variable relevant to our outcome of interest is v72, which records the traditional form of succession for the local headman. Coding categories include: (a) patrilineal heir, matrilineal heir; (b) appointment by a higher authority; (c) seniority or age; (d) influence, wealth, or social status; (e) formal consensus (including elections); and (f) informal consensus. Giuliano and Nunn (2013) regard categories (e) and (f) as signs of local democracy. Unfortunately, the Atlas does not speak directly to state-level political organization, as few of the ethnic groups classified within the Atlas are governed by state-like political organizations. Another shortcoming of the Atlas is that it does not offer extensive coverage of Europe.
Additionally, one must note that the Atlas codes only a single point in time, understood as the "ethnographic present," i.e., a nonspecific period vaguely defined as existing prior to the influx of Europeans.

_Seshat: Global History Databank_, a collaboration of archeologists, anthropologists, historians, and computer scientists (François et al. 2016; Turchin et al. 2015), may be regarded as a successor to the Ethnographic Atlas. The authors divide the world into ten major geographic regions. Next, they select three smaller regions within each of the larger regions, intended to offer variation in complexity across the larger region. This allows them to identify thirty Natural Geographic Regions across ten major geographic regions across the world: in Africa (Ghanaian Coast, Niger Inland Delta, Upper Egypt), in Europe (Iceland, Paris Basin, Latium), in Central Eurasia (Lena River Valley, Orkhon Valley, Sogdiana), in Southwest Asia (Yemeni Coastal Plain, Konya Plain, Susiana), in South Asia (Garo Hills, Deccan, Kachi Plain), in Southeast Asia (Kapuasi Basin, Central Java, Cambodian Basin), in East Asia (Southern China Hills, Kansai, Middle Yellow River Valley), in North America (Finger Lakes, Cahokia, Valley of Oaxaca), in South America (Lowland Andes, North Colombia, Cuzco), in Oceania-Australia (Oro/PNG, Chuuk Islands, Big Island Hawaii). Each Natural Geographic Region is about 100x100 kilometers, though it varies considerably. Within each Region, polities and quasi-polities (those that have not attained a polity form) are identified. These are the basic coding units. The most recent publicly available version of the dataset includes nearly five hundred polities and quasi-polities (Whitehouse et al. 2019) – a remarkable achievement, and testament to the ability of scholars from diverse backgrounds to work together on a common project. However, since Seshat is weighted toward pre-state societies and includes only a small sliver of the world’s territory it covers only a tiny fraction of the world’s states. As such, there is almost no empirical overlap with the present project.

The _State Antiquity Index_, produced by Louis Putterman and colleagues (Borcan, Olsson, Putterman 2018), codes territories conforming to the present-day boundaries of 149 countries at 50-year intervals from 3500 BCE to 2000. Scoring reflects (a) existence of a government, (b) the proportion of the territory covered by that government, and (c) whether it was indigenous or externally imposed. Again, we can congratulate the authors for an outstanding contribution to knowledge. At the same time, we note that the coding categories are quite limited and do not cover any features relevant to our outcome of interest. Moreover, the Index codes only presently-existing sizeable states; all other entities are absorbed into these units, from which a mean score is derived. This constitutes an enormous information loss, and small states existing at the present time are ignored altogether.

**Scope**

Against this backdrop of narrative studies and datasets, we anticipate that the present project will significantly advance our knowledge of politics in the pre-modern era. Our empirical scope encompasses the Eurasian continent – including Europe, Central Asia, East Asia, Southeast Asia (excluding Australasia), South Asia, the Middle East, and North Africa. Polities within these regions will be observed from the beginnings of state-like political organization (~3,500 BCE) up to the French Revolution.

The rationale for this focus may be briefly stated. First, this section of the world has the longest history of state-like forms of political organization and the record of that history is better preserved than it is in other parts of the world.
Second, Eurasian peoples were enmeshed in a single cultural zone. For millennia, travelers crossed these lands, resulting in the diffusion of technology, goods, germs, and ideas (Abu-Lughod 1989; Bentley 1993). A few instances of pristine state formation probably occurred; but mostly, statebuilders borrowed from each other, drawing from a recognized toolkit of options for organizing political power. States were also exposed to similar pressures, leading to striking parallels across the Eurasian landmass (Lieberman 2003, 2009). This, in turn, means that politics in Eurasia were comparable to each other – more comparable, in any case, than politics on other continents.

Finally, the influence of European colonialism in Eurasia during the pre-modern period was not as overwhelming as it was in the New World and – later – in sub-Saharan Africa. Asians were resistant to European disease, habitable parts of the continent were densely settled (by the standards of the time), and state forms of political organization allowed Asians to defend their territory, or to negotiate indirect forms of rule that preserved indigenous norms and practices (Hariri 2012).

Consequently, constitutional developments in Eurasia up to 1789 cannot be regarded as reflections of European hegemony. Indeed, prior to the modern era regional hegemons in each section of Eurasia were much more influential than European powers. In East Asia, the Chinese model was dominant; in Southeast Asia, Chinese and Indian models competed for attention. Central Asian states impacted political organization all across Eurasia. Arguably, Europe borrowed as much from Asia as Asia borrowed from Europe. Even after 1789, when European hegemony extended throughout Asia, its influence was not as transformative as it was in other parts of the world. Consequently, we are able to observe politics in Eurasia develop in ways that are not simply a reflection of Europe.

**The outcome**

In the contemporary era, democracy is usually understood as an election-centered system for choosing leaders in which civil liberty and political rights are extended to all permanent residents in a society. Exclusions for women, slaves, or non-property owners are viewed as blatantly undemocratic.

In the pre-modern era, these criteria were rarely, if ever, met. Elections were rare and exclusions based on ascriptive characteristics were universal. As a thought-experiment, let us imagine extending existing democracy indices – e.g., those produced by V-Dem, Freedom House, or Polity – back to the ancient civilizations of Mesopotamia and Egypt. One can suppose that these indices would register very little variation prior to 1789 – partly because of the many exclusions found in pre-modern polities and partly because of the rarity of elections. All pre-modern polities would be clustered at the autocratic end.

One might conclude from this exercise that democracy is a very recent invention. Evidently, the question of when democracy was invented hinges upon matters of definition. A restrictive definition will reveal a short history; an expansive definition will reveal a longer history.

Our objective is not to advocate for a particular way of conceptualizing democracy but rather to probe political history with an eye to understanding the evolution of contemporary institutions. To do so, we might adopt an expansive definition of democracy (at odds with current usage) or a different term entirely. To avoid confusion, we take the latter approach. This study is therefore focused on an aspect of democracy that demonstrates a great deal of variation in the pre-modern world – limited government, i.e., the degree to which political power is concentrated or diffuse.
We shall regard the history of limited government as comprising the pre-history of democracy. The logic is that wherever executives in the pre-modern era were constrained – by constitutions, by widely-held norms, or by independent veto players – the advent of democracy (involving the extension of civil and political rights to the great mass of permanent residents in a society) was facilitated. Where, by contrast, executives ruled in an absolutist manner they had the means and the motive to prevent democratization in the modern era. (This notion is put to the test in Section IV.)

To measure limited government we will code several features of each polity. This includes the existence of elections, the extent of participation in elections, the existence (and role) of an assembly, the appointment and tenure of the executive, checks on the prerogatives of the executive, demographic concentration in the capital city (a proxy for political centralization), the overall centralization of policymaking, the independence of regional governors from the center, military centralization, the status of religious institutions (incorporated or independent), and the bureaucracy (its composition and method of appointment).

It will be seen that our conception of limited government incorporates many features associated with the contemporary conception of democracy. After all, free elections and popular participation are a constraint on the exercise of executive power, so where they exist it is important to register their status. However, limited government also includes a variety of items that would not be considered relevant to an index of democracy focused on contemporary states.

Limited government should be distinguished from several other peripheral issues, e.g., the rise of civilizations, the development of state-like forms of governance, political stability, state capacity, and good governance (aka public goods). To say that power is concentrated (or decentralized) is not to say that a polity is well-governed, stable, or effective. While scholars tend to valorize limited government in the modern era it is important to bear in mind that the record of limited governments in the pre-modern era was decidedly mixed. Some, like England and the Netherlands, were paragons of good government (by the standards of the day). Others, like Poland, were incompetent and shortlived, incapable of defending their citizens, much less of providing public goods.

Geography

In Section II, we identified two geographic variables of theoretical interest: mountains and waterways (rivers and oceans). These topographic features of the world may be extracted from extant GIS datasets and measured at the grid-cell level, relying on the PRIO grid-cell database, which divides up the world into 259,200 cells, each of which is 0.5 x 0.5 decimal degrees, i.e., approximately 50x50 km at the equator (Tollefsen, Strand, Buhaug 2012).

Naturally, there are questions about how to operationalize and measure each geographic feature. We propose two approaches. The first codes each grid-cell independently. Here, mountainous (rugged) terrain is measured by the maximum altitude differential within a grid-cell. The extent of a riverine system is calculated as the length of all rivers located within a grid-cell, counting only rivers that offer ocean access along a navigable route (without cataracts). Ocean access refers simply to the existence of an ocean or sea within a grid-cell (0=no, 1=yes).

A second approach to measurement codes the distance from each of these features. This requires us to code each feature in a binary fashion, i.e., distance from the nearest large mountain, navigable river with ocean access, or ocean. Distance may be measured as a linear or logarithmic function.
These two grid-cell measures can then be aggregated up to larger grid-cells or to polities by averaging scores across grid-cells that fall into a larger polygon.

We will also test for interaction effects across these geographic factors by generating four multiplicative variables: (a) mountains*rivers, (b) rivers*oceans, (c) oceans*mountains, and (d) mountains*rivers*oceans.

This combination of possibilities generates twenty-one different variables, summarized in Table 1. Note that while the theoretical framework outlined in Section II suggests a general expectation for each of these variables it does not suggest a particular operationalization or functional form. Hence, it is incumbent upon us to test (and report!) all plausible alternatives. If the sign (positive or negative) on the coefficient estimates for these various alternatives is consistent with our hypothesis we shall consider it as strong corroborating evidence.

Of course, we shall pay close attention to the strength of these variables relative to each other and relative to different regional and temporal contexts. This part of the theoretical endeavor is frankly inductive and can only be explored after a close look at the data.

Table 1: Geographic Variables

<table>
<thead>
<tr>
<th>Feature(s)</th>
<th>Grid-cell</th>
<th>Distance from</th>
<th>Distance from (log)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountains</td>
<td>1) Altitude differential</td>
<td>4) Nearest mountain</td>
<td>7) Nearest mountain</td>
</tr>
<tr>
<td>Rivers</td>
<td>2) Length of all rivers</td>
<td>5) Nearest river</td>
<td>8) Nearest river</td>
</tr>
<tr>
<td>Oceans</td>
<td>3) Ocean access</td>
<td>6) Nearest ocean</td>
<td>9) Nearest ocean</td>
</tr>
<tr>
<td>Mountains*Rivers</td>
<td>10) 1*2</td>
<td>14) 4*5</td>
<td>18) 7*8</td>
</tr>
<tr>
<td>Rivers*Oceans</td>
<td>11) 2*3</td>
<td>15) 5*6</td>
<td>19) 8*9</td>
</tr>
<tr>
<td>Oceans*Mountains</td>
<td>12) 1*3</td>
<td>16) 4*6</td>
<td>20) 7*9</td>
</tr>
<tr>
<td>Mountains<em>Rivers</em>Oceans</td>
<td>13) 1<em>2</em>3</td>
<td>17) 4<em>5</em>6</td>
<td>21) 7<em>8</em>9</td>
</tr>
</tbody>
</table>

Implicit in all our measures is an assumption that geographic factors operate along a continuum in which “more is better.” Nowhere is this clearer than in the case of rivers. We have argued that navigable rivers with ocean access enhance mobility, not only for trade but also for people (and by extension, for ideas). However, a single river or riverine system, with only one outlet to the sea, may have little impact. Note that a fort or armed ship lying at the mouth of a river or a river junction offers a point of surveillance and control over all traffic that passes along that artery, allowing officials to exact taxes, interdict contraband, and prevent the movement of persons and goods. In a river valley, where the river is central to transport and to economic life generally and where much of the population lives along the banks of a few rivers, governments can easily project their power. Thus, where a single river system bisects an extensive territory – the Nile in Egypt, the Yellow River in Northern China, the Usumacinta in southern Mexico/Guatemala, where the Mayan civilization arose, or the Mekong in Vietnam/Cambodia – it is not surprising to see the development of polities with highly concentrated systems of power (Feinman, Marcus 1999). By contrast, the existence of multiple river systems, each with an ocean outlet – as in many parts of Europe and some parts of South Asia – was more difficult for states to control.
Units of analysis

Several units of analysis will be enlisted to test each hypothesis. By triangulating across these units of analysis, along with a direct measure of presumed diffusion, we hope to address identification problems that would be unsolvable when each is treated in isolation.

The first unit of analysis is provided by polities, which exemplify the outcome of theoretical interest (limited government). However, since state boundaries are endogenous to geography (according to our argument) we cannot treat these data containers as exogenous.

The second unit of analysis utilizes grid-cells, which can be adjusted to various sizes. By testing the same proposition across differently sized grid-cells we are able to address the modifiable areal root problem (Openshaw 1984: 3). Specifically, if a result is robust across differently-shaped units it is extremely unlikely that the arbitrary polygon boundaries that form the PRIO grid-cell dataset are driving the result.

Changing the size of grid-cells also offers some protection against SUTVA problems (Rubin 1986). In considering SUTVA, or spillover/interference, it is important to begin by acknowledging that since the world – or at least the Eurasian portion of it – is interconnected, problems of spillover affect any analysis of politics that one might conduct. The issue is not unique to the present study, though it has special bearing on our argument since we are focused on very long-term causal effects, offering more time for spillovers to occur.

The spillover problem

Evidently, the ideal research design would feature “alternate worlds” – planets entirely isolated from each other and similar in all respects except for specific geographic features of theoretical interest, e.g., the configuration of waterways and mountains. As no prospect of this nature offers itself we must work with the data that is available from a single, highly interconnected planet.

Diffusion may be regarded as a major force in democratization during the modern era, in which countries are tightly networked and a strong normative consensus seems to exist on the regime question (e.g., Brinks, Coppedge 2006; Elkins, Simmons 2005). In the pre-modern era, by contrast, regions were more isolated due to the primitive state of transport and communications. Importantly, the principle of democracy was not widely revered, and adjacent terms such as republic, representation, or consent, though less provocative, were not popular rallying cries either. Indeed, monarchy (and its cognates) retained the rhetorical edge in most settings throughout the pre-modern era (Gerring et al. 2019). “Legitimacy” meant following the lines of succession within a royal family, as law or norm in a country dictated. Deviations from this were likely to be looked at askance. That is why kings were needed, even in circumstances where they were constrained to reign but not rule. A territory without a king would be regarded as ripe for the taking. Accordingly, we can anticipate that there was considerable internal and external pressure to maintain a monarchical form of government in most parts of Eurasia. Until at least the mid- or late-nineteenth century, it took guts to do otherwise. This means that wherever republics appeared, or kings were sidelined by assemblies or informal elite groupings, there must have been a strong domestic impulse to place limits on the exercise of executive power. Likewise, we can surmise that if polities in the pre-modern era had been free from external pressures – both normative and coercive – there would have been many more experiments with limited government.
The problem of spillover remains, even if it operated rather differently in the pre-modern era – exerting a bias against democracy. One approach to the problem is to model it in an explicit fashion. This can be done, at least in a provisional fashion, if we limit ourselves to the voluntary (non-coerced) spread of ideas, i.e., diffusion. To be sure, diffusion effects are difficult to model and subject to multiple assumptions. The following strategy seems plausible, though it should not preclude us from experimenting with other options. We begin with the outcome of theoretical interest, e.g., a composite index of limited government. For each grid-cell we assign a value that is equivalent to the mean score on this index for all other grid-cells in Eurasia, weighted by expected travel-time to the grid-cell in question. Travel-time refers to the length of time it would take to travel from one grid-cell to another using extant technology, i.e., the most advanced available in Eurasia at the time (for general discussion of travel-time and some applications see Ozak 2010). The resulting score represents, for each grid-cell, the expected value on the outcome that is due to diffusion. This may be lagged in a variety of ways, depending upon assumptions about how quickly ideas diffuse.

Another approach to the spillover problem is to adopt large grid-cells as primary units of analysis. If spillover in the pre-modern era varies with distance (note that transport systems were primitive so contact was likely to be much greater among adjacent groups), larger units should be less prone to SUTVA problems. The status of one grid-cell is less likely to affect the status of another if the grid-cells are the size of sub-continents rather than PRIO grid-cells (approximately 50x50 km). Of course, the connectedness of the Eurasian continent means that no territory is entirely isolated; the small number of plausibly “pristine” incidents of state formation testifies to that. However, by comparing models replicated in datasets composed of small and large grid-cells we can get a glimpse of how much of the variation might be caused by spillover. (For further discussion see Gerring, Wig et al. 2018.)

To think through this problem in a concrete setting, let us consider the fringes of Europe as it morphs into Asia. Areas along the Baltic Sea (in the North) and the Balkans (in the South) have similar geographic conditions to areas further to the West, i.e., plentiful rivers, oceans/seas, and mountains. They also developed de-concentrated systems of rule in the Middle Ages, along with most of Europe (Fedorowicz 1982; Jedruch 1998; Kirby 2014; Scott 2012; Sedlar 1994; Stone 2014). However, to the East and South lie regions where these geographic features are absent, or less marked. The Baltics and Balkans have “good” features but inhabit “bad” neighborhoods. Accordingly, we can expect that large states with concentrated power in those neighborhoods (e.g., Russia, Mongols, Golden Horde, Ottomans, Persia) to project their power into periphery of Europe. Indeed, the historical record suggests that, if left to themselves, the Baltics and Balkans would have maintained de-concentrated systems of power. However, they have been occupied through most of their history (as states) by autocratic states, who halted and in many cases reversed what we might regard as their “natural” (autochthonous) trajectory. If grid-cells are small, predictions for areas on the fringes of different geographic areas – e.g. Eastern Europe/Russia and the Balkans/Middle East – will be incorrect, as they do not allow for spillover across adjacent territories. If grid-cells are large, predictions will take into account the variability of geography across a larger region, taking into account spillover across adjacent regions and issuing predictions for the outcome that are less subject to bias.

We conclude that there are good methodological reasons for preferring larger grid-cells over smaller grid-cells when testing the relationship between geography and the development of political institutions. There are also substantive reasons for doing so, as discussed above.
There is of course a cost to scoping out, and that is the loss of units and hence of statistical precision. However, in a choice between non-biasedness and precision we should always prefer the former. Hence, we regard large units as the primary units of analysis, and smaller units as robustness checks.

Mechanisms and background factors

Wherever possible, we plan to test the mechanisms suggested by our argument, summarized in Figure 1. The size of states is inferable from GIS maps, as discussed below. The existence of an aristocratic class may be measured by a number of factors – inheritance laws, tax exemptions, landholding patterns, and special duties or offices reserved for an aristocratic class – as laid out in the appendix. Other factors are harder to measure, and thus may not be directly testable. Each measurable factor can be tested using various units of analysis, as suggested above.

Background factors of interest include those that might serve as confounders. This includes additional geographic factors, as described in the codebook (see appendix). It also includes demographic and agricultural factors, coded at the grid-cell level in the HYDE dataset (Klein Goldewijk, Beusen, de Vos, van Drecht 2011; Klein Goldewijk, Beusen, Janssen 2010). The population of each grid-cell serves as a proxy for economic development under the assumption that populations in pre-modern societies followed a Malthusian dynamic, expanding until a society reached the carrying capacity allowed by its natural resources, technology, and level of political organization. More densely populated grid-cells may be regarded as richer and more advanced (though not necessarily healthier or more long-lived). Dates of transition from sedentary agriculture may be drawn from Putterman (2006).

Coding

The prodigious work involved in coding polities across pre-modern Eurasia will be borne primarily by a team of research assistants under the supervision of the project team. A few questions requiring deep background knowledge of a particular region or era may be coded by experts (historians, classicists, archeologists), who are asked to fill out a short survey focused on their area of expertise.

Polities with stable political structures and short tenures may be coded once, with the assumption that this coding describes a state of affairs existing throughout its tenure. Polities with longer histories and more temporal variation will need to be coded at several junctures.

To ease the burden of coding, we may code short interregnums in between stable periods of rule separately – perhaps with a simple dummy variable – as these periods tend to be quite complicated and the location of power is likely to be obscure.

For each observation, we will assign a level of certainty from 0 to 100, indicating how confident the coder feels in his/her judgment. This, in turn, is likely to rest on a number of factors including the depth of primary and secondary sources available on a particular polity and the degree of historiographic consensus about the question being coded. In this fashion, end-users will be able to differentiate between codings that are “factual” and those that are highly subjective, or even speculative. They may choose to toss out the latter, or pursue further research on those data points in order to render a more informed determination.

These procedures build upon protocols developed as part of the historical Varieties of Democracy project (Knutsen et al. 2018) and Political Leaders through Time (PLT) project (Gerring et al. 2019).
Text analysis

In addition to standard coding procedures, we will enlist automated text analysis to examine levels of power concentration as well as the role of the state and state actors in generating this discourse. Blaydes et al. (2018) make the first attempt at the use text-as-data methods to examine comparative discourse in the field of political theory through an examination of advice literature from Muslim and Christian societies during the medieval and early modern periods. London (2016) argues that text-as-data methods provide new opportunities for studying the history of ideas, venturing beyond a small (and predominantly Western) canon of political texts. In addition, text-as-data methods can provide information at a larger scale than close reading, sometimes revealing details that are unavailable even to the most discerning of readers. In order to undertake this data collection, we will identify a corpus of texts associated with political theory across Eurasia. This exhaustive collection of political theory manuscripts would then be scanned and subjected to optical character recognition (OCR) to create a dataset of words which could be analyzed using topic modeling.

Gazetteer

To facilitate data collection, we will construct a global, historical gazetteer containing all state-like polities that can be located (in some approximate fashion) on a map. Each polity will be linked to a set of GIS polygons, whose changing configuration will be mapped through time at 100-year intervals (or more frequently, if sources allow).

Sources include Truhart (1996), historical-GIS projects (EurAtlas, GeaCron, China Historical GIS, TimeMap, MapStory, Centennia, the Collaborative for Historical Information and Analysis), as well as printed historical atlases (which will need to be digitized). This part of the project builds on the Political Leaders through Time (PLT) project (Gerring et al. 2019), whose gazetteer currently encompasses 1,300 polities.

Small-N analysis

Comparisons across Eurasia over many millennia are subject to problems of extreme heterogeneity. This introduces noise, at best, and unmeasurable confounders, at worst. It would be vain, therefore, to propose a purely large-N, quantitative approach to our research question.

To mitigate problems of causal inference and to allow for a more detailed investigation of cases (extending to factors that would be impossible to code systematically across all polities), we will conduct a series of “most-similar” analyses (Gerring 2017: ch 5) focused on neighboring states sharing similar cultures and histories but differing in their political institutions during some period of the pre-modern era. Potential cases within the Roman Empire, Northwestern Europe, Spain, Eastern Europe, Southeast Asia, East Asia, and South Asia are set forth in Table 2. Within each region, two sets of polities are compared with an eye to maximizing variation in the outcome of interest (power concentration) while holding background factors constant.

Of these regions, preliminary research suggests that Eastern Europe and East Asia may be especially fruitful areas for comparison. These two regions offer extensive and detailed historical resources and also considerable institutional variation that is fairly consistent across long periods of time, and thus fits our expectation for a geographic cause. So far as we can tell, the case-comparisons within these regions bear out our theory.
Table 2: Most-similar Comparisons

<table>
<thead>
<tr>
<th>Region</th>
<th>De-concentrated</th>
<th>Concentrated</th>
<th>Period</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roman Empire</td>
<td>Rome</td>
<td>Byzantium</td>
<td>4th-6th c</td>
<td>Arnheim 1972; Banaji 2009; Jones 1964; Matthews 1975; Stasavage 2015; Williams, Friell 1999</td>
</tr>
<tr>
<td>Northwestern Europe</td>
<td>England</td>
<td>France</td>
<td>Medieval</td>
<td>Strayer 1970</td>
</tr>
<tr>
<td>Spain</td>
<td>Aragon, Catalonia</td>
<td>Castile, Leon</td>
<td>Early modern</td>
<td>Mackay, A 1977; Mackay, R 1999; Møller 2017; O’Callaghan 1989</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>Bali, Banda, Bone/Boni, Java</td>
<td>Pagan/Burma, Angkor/Khmer</td>
<td>Early modern</td>
<td>Brakel, Reid, Castles 1975; Crawford 1820; Geertz 1980; Kašťář 1976; Moertono 1963; Nordholt 2010; Reid, Castles 1975</td>
</tr>
<tr>
<td>East Asia</td>
<td>Japan, Korea</td>
<td>China</td>
<td>Medieval</td>
<td>Bielenstein 1980; Brown 1993; Butler 2002; Duncan 2015; Duus 1976; Hall 1991; Lewis 2007; Palais 1991: ch 1; Shively, McCullough 1993</td>
</tr>
<tr>
<td>South Asia</td>
<td>Republics</td>
<td>Monarchies</td>
<td>Ancient</td>
<td>Alktekar 1984; Drekmeier 1962; Singh 2003; Stein 1980, 1989</td>
</tr>
</tbody>
</table>

IV. THE IMPACT OF THE PAST ON THE PRESENT

Once our survey of limited government in pre-modern Eurasia is completed, we can investigate how well those patterns of political organization map on to modern regime types, as measured by contemporary indices of democracy such as the Polyarchy index from the V-Dem project (Coppedge et al. 2019).

This is not entirely uncharted territory. Two recent studies attempt to trace the quality of democracy in the contemporary era back to previous historical eras building on the Ethnographic Atlas (Bentzen et al. 2017; Giuliano, Nunn 2013). Both find a significant correlation. We regard these findings as plausible though subject to some important caveats, given that the Atlas provides only a very crude measure of democratic-ness, excludes most of Europe, codes only a single point in time (the “ethnographic present”), and is focused on ethnic groups rather than states.
Our question is whether limited government in the pre-modern era is correlated with democratic institutions in the modern era across the Eurasian continent – the region of the world with the longest history of state development. If there is a substantial correlation, we want to probe how far back this correlation extends. At what point do state histories become correlated with outcomes in the modern era? What point in the modern era is most strongly associated with “deep history”?

Moving beyond correlations, we want to test our causal theory, as laid out in Section II. In that framework, geographic factors provide an exogenous structure that conditions later political development, as shown in Figure 2.

Figure 2. Democracy: A Long-run Framework

<table>
<thead>
<tr>
<th>Geography</th>
<th>Pre-modern institutions</th>
<th>Modern Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountains</td>
<td>Power concentration</td>
<td>Polyarchy (V-Dem)</td>
</tr>
<tr>
<td>Waterways</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To test the exogenous impact of pre-modern institutions on modern institutions we will treat geography as a set of instruments in a two-stage analysis. This provides a much stronger basis for causal inference than is possible using studies focused on the Atlas, for which suitable instruments are lacking.\(^8\)

---

\(^8\) Our argument is quite different from Hariri (2012), which argues that the deep history of states affects regime type in the modern era by providing a defense against the incursion of European influence. Nonetheless, we will need to control for the diffusion of European influence in some fashion in order to rule out this potential confounder.
V. REFERENCES


Geography, Rulers, and Power Concentration (GeoPoC): The pre-modern roots of modern democracy

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I. Geography

A. Agricultural suitability
Geographic endowments favoring agricultural production including climate, soil, and terrain. Source: Agro-Ecological Zones system (GAEZ), developed by the Food and Agriculture Organization of the United Nations (FAO), downloaded (October 2017) from http://gaez.fao.org/Main.html#. Scale: logarithmic. suite_GAEZ_ln

B. Barren
Taken from and interpolated to cover the time-series: “gives the percentage area of the cell covered by barren area, based on ISAM-HYDE landuse data. To measure the coverage of barren areas we include the percentage barren areas in a cell extracted from the ISAM-HYDE historical landuse dataset. To compute barren_ih we aggregate using the following landuse classes: "Tundra", "Desert", "PdRI". In PRIO-GRID, this indicator is available for the years 1950, 1960, 1970, 1980, 1990, 2000, and 2010.” Source: PRIO-GRID (Tollefsen et al. 2012).

C. Crop
Taken from PRIO-GRID (Tollefsen et al., 2015) and interpolated to cover the time-series: “gives the percentage area of the cell covered by agricultural area, based on ISAM-HYDE landuse data. To measure the coverage of agricultural areas we include the percentage agricultural areas in a cell extracted from the ISAM-HYDE historical landuse dataset. To compute agri_ih we follow the land cover classification system used by ISAM-HYDE and aggregate to the category "Total cropland" (landuse classes "C3crop", "C4crop"). In PRIO-GRID, this indicator is available for the years 1950, 1960, 1970, 1980, 1990, 2000, and 2010.”

D. Desert
Share of territory classified as desert. Source: Tollefsen, Strand and Buhaug (2012). Scale: interval. desert

E. Elevation
Mean elevation. Source: Nunn, Puga (2012). Scale: interval. eleva

F. Equator distance
Kilometer distance from grid-cell centroid to equator.

G. Forest
Taken from PRIO-GRID (Tollefsen et al., 2015) and interpolated to cover the time-series: “gives the percentage area of the cell covered by forest area, based on ISAM-HYDE landuse data. To measure the coverage of forest areas we include the percentage forest areas in a cell extracted from the ISAM-HYDE historical landuse dataset. To compute forest_ih we follow the land cover classification system used by ISAM-HYDE and aggregate to the category "Total forest" (landuse classes "TrpEBF", "TrpDBF", "TmpEBF", "TmpENF", "TmpDBF", "BorENF", "BorDNF", "SecTrpEBF", "SecTrpDBF", "SecTmpEBF", "SecTmpENF", "SecTmpDBF", "SecBorENF", "SecBorDNF"). In PRIO-GRID, this indicator is available for the years 1950, 1960, 1970, 1980, 1990, 2000, and 2010.”

H. Frost days
Number of frost days per annum (mean). *Source:* authors. *Scale:* interval. *Firstdays*

**I. Grass**

Taken from PRIO-GRID (Tollefsen et al., 2015) and interpolated to cover the time-series: “gives the percentage area of the cell covered by grasslands, based on ISAM-HYDE landuse data. To measure the coverage of grasslands we include the percentage grassland areas in a cell extracted from the ISAM-HYDE historical landuse dataset. To compute grass_ih we follow the land cover classification system used by ISAM-HYDE and aggregate to the category ”Total grassland” (landuse classes "C3grass", "C4grass"). In PRIO-GRID, this indicator is available for the years 1950, 1960, 1970, 1980, 1990, 2000, and 2010.”

**J. Harbor distance**

Kilometer distance from grid-cell centroid to nearest (natural) harbor.

**K. Irrigation potential**


**L. Irrigation**

Units: grid-cells. Taken from PRIO-GRID (Tollefsen et al., 2015) and interpolated to cover the time-series: “measures the area equipped for irrigation within each cell (in hectares). The data is taken from the Historical Irrigation dataset v.1, which indicates pixelated data on areas equipped for irrigation across time. Specifically we used the AEI_EARTHSTAT_IR dataset, which reports irrigation based on subnational sources and Earthstat historical landuse data. In PRIO-GRID, this indicator is only available for the years 1950, 1960, 1970, 1980, 1985, 1990, 1995, 2000, and 2005.”

**M. Island**

Indicates whether a country is attached to a continental land mass or not. *Source:* authors. *Scale:* binary. *Island*

**N. Land area**


**O. Landlock**

Coded 1 for landlock, 0 otherwise. *Source:* authors. *Scale:* binary. *landlock*

**P. Latitude**

Distance from equator. *Source:* QoG (Teorell et al. 2016). *Scale:* logarithmic. *Latitude_In*

**Q. Mountains**

Taken from PRIO-GRID (Tollefsen et al., 2015) and interpolated to cover the time-series: “measures the proportion of mountainous terrain within the cell based on elevation, slope and local elevation range, taken from a high-resolution mountain raster developed for UNEP's Mountain Watch Report. The original pixel values are binary, capturing whether the pixel is a mountain pixel or not based on the seven different categories of mountainous terrain in the report.”

**R. Ocean distance**

Units: grid-cells. Kilometer distance from grid-cell centroid to nearest coastline.

**S. Pasture**
Taken from PRIO-GRID (Tollefsen et al., 2015) and interpolated to cover the time-series: “gives the percentage area of the cell covered by pasture area, based on ISAM-HYDE landuse data. To measure the coverage of pasture areas we include the percentage pasture areas in a cell extracted from the ISAM-HYDE historical landuse dataset. To compute pasture_ih we follow the land cover classification system used by ISAM-HYDE and aggregate to the category "Total pastureland" (landuse classes "C3past", "C4past"). In PRIO-GRID, this indicator is available for the years 1950, 1960, 1970, 1980, 1990, 2000, and 2010.”

T. Precipitation

U. Regions
A vector of dummies: Eastern Europe and Central Asia (including Mongolia), Latin America, Middle East, North Africa, Sub-Saharan Africa, Western Europe and North America, East Asia, South-East Asia, South Asia, the Pacific, and the Caribbean. Source: QoG (Teorell et al. 2013). Scale: nominal. e_regionpol

V. River distance
Distance from grid-cell centroid to nearest river. Rivers that are identified from the Aquastat database, developed by the Land and Water Division of the Food and Agriculture Organization, which includes information about rivers’ hydrological regime indicating its rank based on connectivity and hierarchy, ranging from 1 to 7, where 1 is a small stream (a leaf without children), while 7 indicates a major navigable river. We use rivers with Strahler Stream order 3 to 7. Source: FAO (2016).

W. Savanna
Area (percentage) of a grid-cell covered by grasslands, based on ISAM-HYDE landuse data. To measure the coverage of savanna we include the percentage savanna areas in a cell extracted from the ISAM-HYDE historical landuse dataset. To compute savanna_ih we follow the land cover classification system used by ISAM-HYDE and aggregate to the category "Savanna" (landuse class "Savanna"). Data available for 1950, 1960, 1970, 1980, 1990, 2000, and 2010. Missing data interpolated across the time-series, 1800-2009. Source: PRIO-GRID (Tollefsen et al. 2012).

X. Shrub
Taken from PRIO-GRID (Tollefsen et al., 2015) and interpolated to cover the time-series: “gives the percentage area of the cell covered by grasslands, based on ISAM-HYDE landuse data. To measure the coverage of grasslands we include the percentage grassland areas in a cell extracted from the ISAM-HYDE historical landuse dataset. To compute grass_ih we follow the land cover classification system used by ISAM-HYDE and aggregate to the category "Total grassland" (landuse classes "C3grass", "C4grass"). In PRIO-GRID, this indicator is available for the years 1950, 1960, 1970, 1980, 1990, 2000, and 2010.”

Y. Soil

Z. Temperature
Taken from PRIO-GRID (Tollefsen et al., 2015) and interpolated to cover the time-series: “gives the yearly mean temperature (in degrees Celsius) in the cell, based on monthly meteorological statistics from GHCN/CAMS, developed at the Climate Prediction Center, NOAA/National Weather Service. This indicator contains data for the years 1948-2014.” (Tollefsen et al., 2015).

AA. Tropical

**II. Demography/Development**

**A. Transition to sedentary agriculture**


**B. Cropland**


**C. Pasture**


**D. Population**


**III. Territories**

The units of theoretical concern in this study are polities, or states. To identify these units, we will gather data on several features of each territory in the world, as identified by maps and historical-GIS datasets.

**A. Name(s)**

What is the name, and alternate names (if any) of this territory?

[Text]

**B. Territory type**

What type of territory is this? Classify the territory into one of the following categories. Note that this field captures de facto status, a status that may change over time. Note also that the same proper noun may refer to different units. E.g., “Britain (country)” and “Britain (empire).”

1. *City/county (aka village, town, municipality)*: A small, nonsovereign territory that serves as an administrative unit, is centered on an urban area (e.g., city or county seat), and does not constitute a region. (Eventually, we may want to distinguish cities and counties. But for now, this should be sufficient.)

2. *Region (aka province, Type 1 admin unit)*: A first-order administrative unit within a country or colony.

3. *Country (aka Type 2 admin unit)*: Sovereign unit whose component units are administered in a fairly uniform fashion and are not regarded as subordinate or inferior to the metropole. Leaders are not imposed or controlled by foreign entities and the polity is free to conduct foreign policy (within the scope of freely contracted agreements).
4. **Colony (aka protectorate, dependency, aka Type 3 admin unit):** Partially sovereign and partially incorporated into a larger unit (empire) that it did not freely join and cannot freely exit. A colony is not incorporated on an equal basis with other units within a larger entity. The empire appoints leaders and controls some elements of policy, including foreign policy. Does not include tributary states since that are essentially self-governing.

5. **Empire:** Sovereign polity, some of whose components are forcibly integrated and treated as different and subordinate to the metropole. Composed of colonies and perhaps also a country (the metropole).

6. **Confederation:** Composite unit composed of multiple countries who voluntarily join, and may exit freely. E.g., Holy Roman Empire, British Commonwealth, European Union.

7. **Dynastic Conglomerate:** An aggregate unit composed of multiple countries (type 2) that coordinate and compete on the basis of shared dynastic affiliation. E.g., Kiev-Russ, Mongols, Poland, Lithuania. Often a result of partible inheritance.

8. **Stateless:** No state form of political organization exists, or no evidence of such has been found.

C. **Superordinate polity**
If this territory is a part of a larger polity, what is that larger polity?

D. **Capital**
Is there a fixed capital?

1. The capital is understood as the current location of the ruler, who moves from place to place.
2. The capital changes repeatedly, but at any given point in time there is a fixed capital.
3. The capital is fixed, or changes very rarely.

IV. **Mechanisms**

A. **Aristocracy**
Is there a recognizable landed aristocracy (aka gentry)? Definition: a group that (a) views itself, and is viewed, as having a distinguished (“noble”) lineage that sets them apart from commoners, (b) owns a large portion of the arable land in a territory, (c) claims special trappings (insignia, heralds, costumes, forms of address) signaling their distinctiveness, (d) carries a special legal status (e.g., qualifies for specific burdens or exemptions), and (e) observes class endogamy (inter-marriage among aristocrats).

1. No
2. To some extent (a few criteria are fulfilled or all criteria are partially fulfilled)
3. Yes (all criteria are fulfilled)

B. **Land inheritance for large landholders/aristocrats**
What sort of property rights apply to the landed elite (aristocrats)? We are concerned here, as elsewhere, with the typical case not with unusual cases and with practices rather than formal rules (insofar as they might diverge). (Select all that apply)

1. Property reverts to crown or state at the death of the holder
2. The state or ruler may abrogate property rights at any time, and often do so
3. Property is non-alienable (cannot be sold)
4. Property is alienable
5. Property may be inherited
6. Other [specify]
C. Tax exemptions
Which classes (if any) are exempt from taxation or subject to much lower rates? (Select all that apply)

Clarification: Exemption might be targeted on persons (those with a specific ascriptive status) or property (that which is placed in a particular category). The key issue in any case is who benefits from the exemption.

Clarification: Prior to the development of regular taxation many monarchs lived off their own domains, except in times of war when exceptional taxes were levied. The question, in this instance, is who paid the “exceptional” tax.

1. None
2. Aristocracy
3. Clergy
4. Other


D. Landholding
For each method of land tenure below, indicate how much land (as a share of all land within the territory) is under that system of control: (a) none, (b) a little, (c) some, (d) most, (e) all. In principle, these categories are mutually exclusive; a parcel of land should be classified into only one category.

1. Controlled by the state or ruler. (Although people may act as owners they do not have secure property rights and the state may dispossess them without compensation at any time.)
2. Controlled communally, i.e., by villages, chiefs, or other traditional organizations.
3. Controlled by small landholders (peasants).
4. Controlled by large landholders (aristocrats).
5. Controlled by religious organizations.

- This schema may be compared with that suggested by La Croix (2002): (1) owner cultivation of small, private lands; (2) squatting on public or private lands; (3) large estates or latifundia; (4) feudal tenures with bound and unbound labor; (5) communal tenures; and (6) smallholder leasing from private landowners. See also Powelson (1988), Tai (1974), Tuma (1965), Vanhanen (2000).

- Of potential interest is the general rule of land inheritance, recorded for pre-modern ethnic groups in Murdock (1967), as follows: (1) equal or relatively equal distribution between heirs, (2) primogeniture, (3) exclusive inheritance by the best-qualified heir, (4) ultimogeniture, or (5) absence of a fixed rule or “no knowledge” of the rule.

E. Aristocratic Politics
Does the aristocracy have special political responsibilities or powers? (Select all that apply)

1. Collect taxes
2. Provide military support (men, materiel)
3. Seats in a representative assembly

F. Inter-state conflict
Wars occurring in Europe, 1000 (?) to 1800 (Dincecco, Onorato 2018).
Battles in Europe, digitized, 1400-1900 (Iyigun, Nunn, Qian 2017).
V. Power Concentration

Prior to the modern era no state was democratic in the contemporary sense of the term, as the vast bulk of the population was excluded from political power. However, we can locate considerable variation across pre-modern states in the degree to which rulers were constrained and decision-making powers diffused, which we shall refer to as power concentration. To measure these features in a systematic fashion, we propose the following indicators, which may be examined separately or combined into higher-level indices.

Some questions pertain to elections. Although rare in the pre-modern world, it is such an important dimension that we cannot afford to overlook it.

Some questions pertain to assemblies. An assembly (aka council, legislature, parliament) is a body that sets policy, advises the executive, or selects/dismisses the executive. It need not meet regularly. Early assemblies include the Witenagemut (England), Loya Jirga (Afghanistan), Panchayati Raj (South Asia), Thing (Germanic, Icelandic). The existence of an assembly is regarded as strong evidence that leadership prerogatives were limited.

Several questions pertain to the leadership selection. Here, we anticipate significant variation across polities and through time, which we regard as critical for differentiating degrees of power concentration.

A few questions are pitched generally at the question of power concentration. Although these sorts of questions involve a more subjective style of judgment, they may be easier to code than questions that involve very specific factual information.

A. Demographic centralization

To measure political centralization, some scholars measure the size of the capital as a share of the total population (Ades, Glaeser 1995; Galiani, Kim 2011: 128; Gerring, Veenendaal 2020: ch 12; Henderson 2003). This, however, is largely a product of the overall size of the country; smaller countries will have a more centralized demography. A better measure may be the size of the capital (the place where the government bureaucracy is housed or, if there is no formal government, the ruler’s main residence), as a share of the population of the other largest city (which in some cases may be larger than the capital). However, this may not exist, or have any meaning, in a city-state. So, I would propose to measure the dispersion of population centers across a medium- or large-size grid-cell. This could be measured as “number of cities” (using some cut-point to define a city), or ratio of largest to next largest, or decay rate across top 5 or 10 cities.

B. Policy centralization

To what extent are policies pertaining to domestic policy centralized or decentralized?
1. Most policies are decided by governmental units at the periphery – the characteristic feature of a federal or confederal state or indirect rule. Expectation: a fair degree of heterogeneity in policies across regions. Regions may hold a de jure or de facto veto, or the ability to effectively resist a policy that they do not agree with.
2. Some policies are decided by governmental units at the periphery and others at the center.
3. Most policies are decided at the center – the characteristic of a unitary state or direct rule.

Expectation: a high degree of uniformity in policies across regions. Regions have no de jure or de facto means of resisting a decision they do not agree with.

C. Regional governance

Are regional governors (executives of major regions of the state) independent of the center?
1. Leaders in the major regions of the state normally gain office without interference from elites at the center, and cannot be dismissed by the latter.
2. Leaders in the major regions of the state normally gain office without interference from elites at the center, though they must be formally invested by the latter.
3. Leaders in the major regions of the state are directly appointed by the center but serve for life.
4. Leaders in the major regions of the state are directly appointed by the center and can be removed at any time. They are thus fully accountable.
D. Military centralization
   To what extent are military forces centralized or decentralized?
   1. The military is composed primarily of militias raised at local or regional levels and accountable to local leaders.
   2. The military is a mix of local militias and central army.
   3. The military is composed of troops paid by, and under the direction of, the central state.

E. Surveillance
   To what extent does the government collect information on political opponents?
   1. There is little organized surveillance, except for those suspected of (non-political) criminal activity.
   2. There is episodic surveillance of political opponents.
   3. There is organized and widespread surveillance of political opponents, including persons whose job it is to spy on citizens.

F. Religious institutions
   Does the state incorporate religious components or do religious institutions pose a countervailing power to the state?
   1. Important religious institutions are independent of the government and have a centralized structure (e.g., Catholic Church in Europe).
   2. Important religious institutions are independent of the state but do not have a centralized structure (e.g., Hinduism, Sunni Islam – except in the case of a caliphate).
   3. Important religious institutions are controlled by the state.
   4. The civil ruler is also head of the main religion. Civil and religious authority is fused.

G. Bureaucracy: Composition
   Who staffs the bureaucracy? A bureaucracy is understood here simply as “people who carry out the business of the state.” As such, any state must have some sort of bureaucracy, even if they are only members of the ruler’s household. (Choose all that apply)
   1. Members of the ruler’s family, clan, or household
   2. Co-ethnics
   3. Co-partisans (members of the ruling party)
   4. Landed elites (aristocrats)
   5. Warriors (e.g., samurai)
   6. Clerics
   7. Outgroups (slaves, eunuchs, foreigners, marginal ethnic or sectarian groups) (Smith 2018)
   8. Professionals (career civil servants, usually with special education/training)

H. Bureaucracy: Appointment
   How are bureaucrats chosen? (Choose all that apply)
   1. Inheritance (offices are passed down within a family)
   2. Venality (offices are sold, i.e., tax-farming)
   3. Patrimonial, patronage (offices are granted to family members, allies, co-partisans, perhaps in exchange for support)
   4. Merit (e.g., civil service exam)

I. Bureaucracy: Position
How are bureaucrats assigned? (Choose all that apply)
1. Generally to their home territory, i.e., where their family holdings lie
2. To a location which may or may not be in their home territory
3. Regular rotation, i.e., to different territories or different jobs

J. Assemblies: local or regional
Are there local or regional assemblies?
Sources for questions about assemblies and elections: Parliaments, Estates and Representation (journal)
1. No
2. They exist but meet irregularly
3. They meet regularly, i.e., at least once every several years
4. They meet regularly and perform important policymaking functions
5. They meet regularly and control the regional/local executive

K. Assembly membership: local or regional
If there are local or regional assemblies, how are positions on these bodies allocated? (Choose all that apply)
1. Inherited
2. Appointed
3. Elected
4. Unclear

L. Assembly
Is there an assembly representing the entire state?
1. No.
2. It exists but meets irregularly.
3. It meets regularly.
4. It meets regularly and performs important policymaking functions
5. It meets regularly and controls the executive.

M. Assembly membership
If there is a state-wide assembly, how are positions on this body allocated? (Choose all that apply)
1. Inherited
2. Appointed
3. Elected
4. Unclear

N. Elections: local/regional
How would you characterize local or regional elections?
1. There are none (Y/N)
2. They are held regularly (as established by constitution, statute, or well-established norm) (Y/N)
3. They are open to all viable candidates and parties (Y/N)
4. They choose the most important policymakers at that level (Y/N)

O. Elections: state (polity)
How would you characterize state-wide elections?
1. There are none (Y/N)
2. They are held regularly (as established by constitution, statute, or well-established norm) (Y/N)
3. They are open to all viable candidates and parties (Y/N)
4. They choose the most important policymakers at that level (Y/N)

P. Popular participation (criteria)
To the extent that permanent residents of the state are allowed to participate in politics, what are the criteria? (Choose all that apply) (We assume that there is some age criterion.)
1. Male
2. Tax payment
3. Property ownership
4. Free (non-slave)
5. Member of the dominant creed or ethnic group

Q. Popular participation (%)
What share (%) of the permanent adult population is allowed to participate in elections or popular assemblies? Insert 0 if there are no elections or assemblies.
1. [%]

R. Top leader: Appointment in practice
How did the leader reach office? If several bodies were involved in the appointment process, select the one that exerted the most critical impact on the decision. Response category 9 should only be selected if the leader was directly elected, not if he or she was appointed by the assembly after an election.
0: Through the threat of or application of force, such as a coup or rebellion.
1: Appointed by a foreign power.
2: Appointed by the ruling party (in a one-party system).
3: Appointed by a royal council (either members of the royal family or conclave of aristocrats).
4: Through hereditary succession.
5: Appointed by the military.
6: Appointed by the assembly.
7: Appointed by the head of state
8: Appointed by the head of government
9: Directly through a popular election (regardless of the extension of the suffrage).
10: Other.

S. Top leader: Selection by assembly in practice
Was approval of the assembly necessary for the appointment of the leader? By "approval" we mean both explicit approval, such as through a vote of confidence, and tacit approval, such as a practice stating that the leader has to have majority support (or should not be opposed by the majority) in the assembly even though no vote is taken on his/her appointment. We are not concerned with certification of electoral college votes (as in the US, Mexico).
0: No.
1: Yes.

T. Top leader: Exit, de jure
What determines the tenure of the top leader?
1. Rule for life (no constitutional method of removal)
2. Rule for life except in cases of extreme malfeasance
3. Rule for fixed term
4. Rule until removed by assembly or election

U. Top leader: Arbitrary rule
Can the top ruler (who wields effective executive power) take each of these actions on his own authority, i.e., without consultation or approval of other actors? This is a question about de facto power not de jure power, so the question is not whether the constitution allows or forbids such actions but whether, in the event, the ruler could perform it.

1. Hire anyone he wishes (regardless of qualifications) to serve in a top-level administrative post (Y/N)
2. Fire anyone he wishes (regardless of whether they have performed well or poorly) from a top-level administrative post (Y/N)
3. Hire anyone he wishes (regardless of qualifications) to serve in a low-level administrative post (Y/N)
4. Fire anyone he wishes (regardless of whether they have performed well or poorly) from a low-level administrative post (Y/N)
5. Fine or seize property from citizens who have not violated any law (other than lese-majeste) (Y/N)
6. Kill or jail citizens who have not violated any law (other than lese-majeste) (Y/N)
7. Create new policies, or cancel old policies. (We are not inquiring about the state’s capacity to make good on these policy changes but simply about the ability of the ruler to set those policies.) (Y/N)

V. Top leader: Depiction
How is the top ruler portrayed in the contemporary (pro-regime) literature? Our interest is in the portrayal of this person, which may be very different from their actual power (e.g., if they reign rather than rule). Importantly, we are focused on the position the leader occupies – not the individual who happens to occupy that position at a particular point in time. For example, we are interested in how pharaohs are generally portrayed, not in Pharaoh X. *(Scale: 1-5)*

1. Human – fallible, dispensable, a commoner who happens to occupy a leadership position. E.g., a prime minister in a polity with a monarch.
2.  
3.  
4.  
5. Godlike – set apart from mere mortals (commoners), above all others on earth (including foreign rulers), omniscient, omnipotent, righteous, indispensable for the legitimation of power. E.g., imperial Japan, China.

W. Pomp
How much pomp is associated with government? *(Scale: 1-5)*

Sources: Duindam Artan, Kunt (2011)

1. Very little. State officials issue laws and implement policies in a businesslike (“legal-bureaucratic”) manner, without a lot of fuss.
2.  
3.  
4.  
5. A great deal. State officials (at the very least, the top official) perform important ceremonial (perhaps religious or quasi-religious) roles. The “court” and “palace” is lavish (Elias 1983). E.g., the “theatre state” of Bali (Geertz 1980), the Chinese Empire, the court of Louis XIV.

X. Concentration - summary
Is decisionmaking at the top monopolized by a single ruler? This refers to the ability to make a decision, not the capacity to enforce it.

1. Many constraints, many veto holders, decisionmaking power is dispersed, perhaps across a judiciary, an assembly, or other independent institution.
2. Some constraints.
3. A single ruler and his clique make all important decisions without any regularized input from others.
VI. References


