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Oğuz Korkut Keleş

korkut.keles@upf.edu

Pompeu Fabra University

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Deep Roots of Support for Unconstrained Leadership: Evidence from Second-Generation Immigrants and Ancestral Pastoral Organization

Oguz Korkut Keles[1*]

Corresponding author(s). E-mail(s): korkut.keles@upf.edu;

Abstract

Why do some individuals express stronger support for unconstrained leadership? This paper argues that preferences over executive constraints may partly reflect durable cultural legacies of historical social organization. I focus on pastoral nomadic societies, where political authority often relied on mobility, bargaining, and redistributive brokerage rather than dense impersonal institutions. To study this question, I combine World Values Survey data with ethnographic and spatial measures of pre-industrial social organization and focus on second-generation immigrants, which allows comparisons among individuals exposed to the same host-country institutions but differing in ancestral origins. I map respondents' self-reported ethnic identities to Ethnographic Atlas societies, use matched locations as proxies for ancestral homelands, and construct ancestry-linked measures of nomadic exposure: an Ethnographic Atlas nomadic social-organization indicator, proximity to reconstructed Eurasian nomadic corridors, and a model-based measure of relative nomadic pastoralism suitability. The latter is constructed from the standardized difference between land suitability for nomadic pastoralism and land suitability for agriculture around ancestral homelands, and then re-standardized so that higher values indicate environments relatively more favorable to nomadic pastoralism than to sedentary agriculture. I first show in pre-industrial Ethnographic Atlas validations that the corridor and ecological proxies are positively associated with the incidence of nomadic social organization. In the contemporary analysis, all ancestry-linked measures are positively associated with support for "a strong leader who does not have to bother with parliament and elections." The results are robust to host-country and survey-year fixed effects, ancestral-region fixed effects, rich individual and ancestral controls, and appendix robustness checks using an alternative 100km ecological buffer.

Keywords: support for unconstrained leader, executive constraints, nomadic ancestry, deep roots

1 Introduction

Leaders and institutions can be understood as alternative poles of political organization: in some settings, social order is sustained primarily through impersonal rules and intermediary bodies, while in others it depends more heavily on personalized authority and elite brokerage (Wallis, 2011). The relative weight of these organizational forms varies across societies and historical contexts. In pastoral nomadic settings, leadership often served not only as a political office but also as an economic and military coordinating mechanism—mediating external relations, organizing redistribution, and, at times, constituting the core of state formation itself (Di Cosmo, 1999).[1]

Support for unconstrained executive authority is not only a feature of regimes; it is also a feature of citizens' preferences-a latent demand for rule by command rather than rule by constraint. Where that demand comes from is a foundational question in political economy. This paper develops a deep-roots perspective: preferences over executive constraints may be partly shaped by ancestral social environments that rewarded coordination, bargaining, and redistributive brokerage under conditions of mobility and insecurity. Pastoral nomadic societies provide an especially sharp case because authority was often sustained through the capacity to mobilize followers, negotiate with (or extract from) sedentary neighbors, and redistribute resources across lineages-features that can elevate the leader as a focal political institution. Nomadic ancestry also underpinned several "universal empires" that organized rule across vast territories (Di Cosmo, 2021). While prominent explanations of these empires' long-run legacies emphasize religion (Kuran, 2004, 2005, 2012), I investigate whether the underlying social organization of nomadic life itself left persistent imprints on modern preferences for unconstrained leadership.

In its broadest sense, nomadism is associated with mobility, but the causes and forms of mobility vary substantially across societies. Here, I use the term specifically to refer to *mobile pastoralism* (Khazanov, 1981). Relative to agrarian societies, wealth accumulation and surplus generation in pastoral nomadic societies were less tightly anchored to fixed land and intensive cultivation. I argue that this economic ecology could increase the political centrality of leadership through three reinforcing channels. First, nomadic polities often obtained resources through external transfers and extraction from neighboring sedentary communities-including tribute, protection arrangements, trade-mediated transfers, and, at times, coercive appropriation. Because access to these flows depended on inter-polity bargaining and credible coordination, leadership became pivotal: a strong leader could mobilize followers, coordinate collective action, and strengthen bargaining leverage vis-à-vis surrounding agrarian states. Second, redistribution was often personalized: leaders acted as brokers who allocated acquired resources across households and lineages, converting external inflows into internal cohesion and political authority. Third, because economic organization was concentrated in relatively small household-based units rather than mediated through dense impersonal institutions, the scope for intermediary organizations was narrower, which could further increase the political centrality of leadership as a coordinating and

[1]Among historically salient examples, Timur (Tamerlane) is a particularly clear case of imperial formation built around personal leadership and military coalition-building (Manz, 1983).

redistributive mechanism. Together, these features imply a leadership-centered political culture in which authority is sustained less by bureaucratic extraction and more by coordination, brokerage, and redistribution.

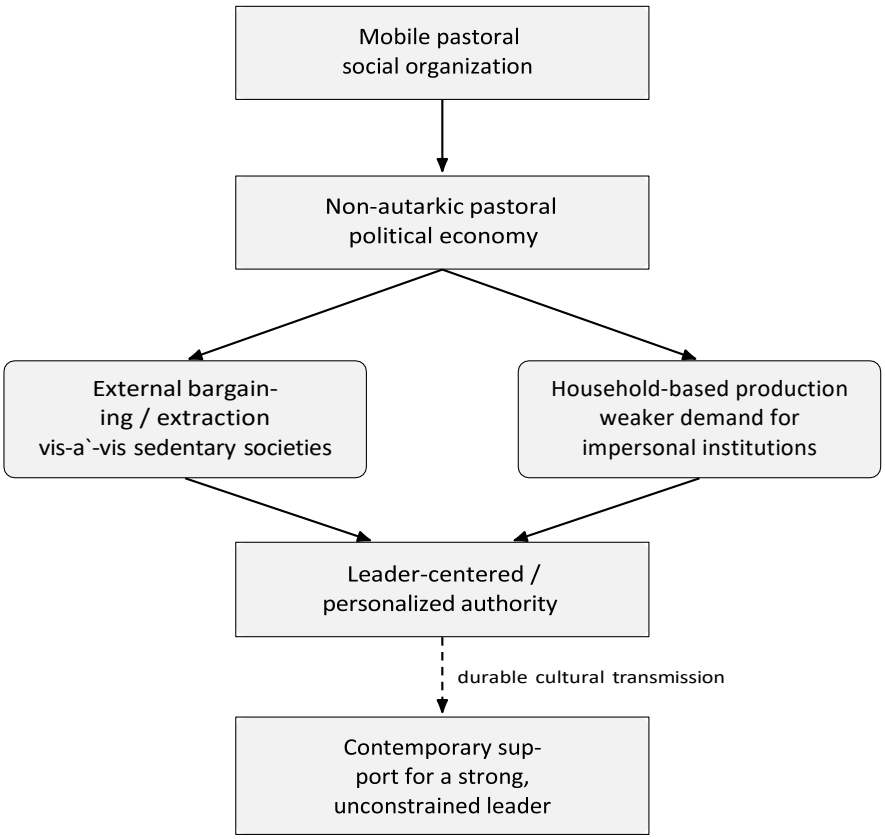


Fig. 1: Proposed mechanism: mobile pastoral social organization generated a non-autarkic political economy in which external bargaining with sedentary societies and household-based production increased the political centrality of personalized authority. These historical patterns may leave durable cultural legacies that raise contemporary support for a strong, unconstrained leader.

Throughout the paper, I use "unconstrained leadership" as the primary conceptual term, "unconstrained executive authority" when referring to the institutional logic of weakened constraints, and the "WVS strong-leader item" to denote the specific survey measure: "a strong leader who does not have to bother with parliament and elections." To test this argument, I leverage a second-generation immigrant design in the World Values Survey (WVS). I focus on respondents who are not migrants themselves but whose mother and father are both migrants. Each respondent's self-reported

ethnic identity is mapped to an Ethnographic Atlas (EA) society, which provides pre-industrial characteristics for ethnolinguistic groups. I then assign the matched EA society's location as an ancestral homeland proxy and use that location to construct ancestry-linked measures of exposure to nomadic institutions and nomadic ecology. This design enables within-host-country and within-survey-year comparisons between individuals who share the same contemporary institutional environment but differ in the historical social organization of their ancestral groups.

I use multiple ancestry-linked measures of historical nomadic exposure, but I treat them as serving different inferential roles. First, I use the Ethnographic Atlas nomadic social-organization indicator as a historical baseline for nomadic ancestry rather than as the primary exogenous measure, since it reflects realized settlement type rather than underlying ecological suitability. To capture ancestral exposure to nomadic economic environments, I use data from Beck and Sieber (2010), which provide spatial suitability surfaces for agriculture, pastoralism, and nomadic pastoralism. From these, I use only agricultural and nomadic pastoral suitability. Because these are not measures of actual land use, they have the advantage of capturing underlying ecological conditions rather than realized production patterns. The main ecological measure is *relative nomadic pastoralism suitability*. Rather than relying on pastoral suitability alone, this variable captures whether local ecological conditions were relatively more favorable to nomadic pastoralism than to agriculture. Specifically, I construct the measure as the standardized difference between land suitability for nomadic pastoralism and land suitability for agriculture within a 50km buffer, and then re-standardize the resulting difference.[2] Higher values therefore indicate ecological conditions that were comparatively more favorable to nomadic pastoralism than to sedentary agriculture. This relative measure is closer to the theoretical mechanism of interest, as the argument is not simply that pastoral conditions matter in isolation, but that environments more favorable to mobile pastoralism relative to agriculture were more likely to sustain social organization centered on kin-based production, bargaining power, and strong personal leadership. Because the ecological suitability measure directly captures ancestral exposure to nomadic environments, I use it as the main explanatory variable. [3] I also use proximity to a reconstructed network of ancient nomadic corridors from Paik and Shahi (2023), who extend the GIS-based mobility-corridor framework developed by Frachetti, Smith, Traub, and Williams (2017). The resulting corridor network captures historically persistent pastoral mobility routes across Inner and Central Asia, so corridor proximity is evaluated on ancestral homelands located in Asia. Likewise, because pre-1500 pasture—and the large livestock economies it reflects—was largely absent in the pre-Columbian Americas prior to European contact (Klein Goldewijk, Beusen, Van Drecht, & De Vos, 2011), the ecological analysis is restricted to ancestral homelands in Africa, Asia, and Europe. Before turning to the contemporary WVS analysis, I report pre-industrial validation exercises in the Ethnographic Atlas showing that the corridor and ecological proxies are positively associated with the incidence of nomadic social organization.

[2]Appendix B also reports results using a 100km buffer; the estimates remain positive and statistically significant.

[3]Appendix C reports instrumental-variables estimates as a complementary robustness check.

The results indicate that greater ancestral exposure to nomadic culture is associated with systematically stronger support for unconstrained executive authority. I first show that the ancestry-linked EA nomadic indicator is positively associated with support for the WVS strong-leader item. I then show that the same substantive pattern appears when nomadic ancestry is proxied using nomadic corridor proximity and the nomadic pastoralism suitability measure (Beck & Sieber, 2010). In the contemporary WVS analysis, nomadic ancestry is positively and statistically significantly associated with support for a *strong leader who does not have to bother with parliament and elections* (on the 1-4 scale), net of survey-year, host-country, and ancestral-region fixed effects and a rich set of individual and ancestral controls. Across specifications, these associations remain stable after conditioning on ancestral geography and ecology (including caloric suitability (Galor & Ö zak, 2015), distance to the coast (Wessel & Smith, 1996), absolute latitude, and EA year of observation), individual sociodemographic controls, town size, and additional controls for religion, income, or education.

These patterns are not reducible to any single broad ancestral-origin region, to post-Soviet parental background, or to a generic attraction to non-electoral rule. In additional analyses, the association remains when origin regions are excluded one at a time, survives the exclusion of post-Soviet parental origins, and does not extend in the same way to support for expert rule. This pattern is more consistent with a specific preference for personalized executive authority than with diffuse anti-system sentiment.

This paper makes three contributions. First, it links pastoral nomadic social organization to contemporary preferences over executive constraints, extending the deep-roots literature beyond outcomes such as gender norms or labor-market behavior to a core political attitude: demand for unconstrained leadership. Second, it introduces and combines multiple ancestry-linked proxies of nomadic exposure—an EA-based nomadic social-organization measure, a reconstructed nomadic-corridor proximity measure, and a model-based nomadic pastoral suitability measure (Beck & Sieber, 2010)—within a second-generation immigrant design that permits within-host-country and within-survey-year comparisons. Third, it offers a mechanism-based interpretation centered on coordination, bargaining, and redistributive brokerage in mobile pastoral social organization, and evaluates the robustness of the empirical pattern to demanding controls, fixed effects, alternative operationalizations of ancestral nomadic exposure, and alternative buffer choices for the ecological measures.

This paper speaks to the literature on mass political attitudes by examining support for unconstrained leadership—a preference that sits in direct tension with support for executive constraints and constitutional rule. A large body of work in political economy treats executive constraints as an institutional equilibrium sustained by citizens' beliefs and willingness to defend constitutional limits. In this view, public support is crucial for the endurance of democratic regimes, since democratic survival depends in part on citizens' political attitudes and civic engagement (Acemoglu, Johnson, Robinson, & Yared, 2009; Claassen, 2020; Lipset, 1959; Qi & Shin, 2011). These preferences can be shaped by contemporary experience- economic performance, exposure to democratic institutions, and socialization in democratic environments (Denemark,

Mattes, & Niemi, 2016; Magalhães, 2014; Mishler & Rose, 2007)-but they can also reflect deeper psychological and cultural predispositions that make some citizens more receptive to authority-centered rule (Adorno, 2019).[4]

This paper brings the study of mass preferences over executive constraints into dialogue with two literatures that are usually kept separate: research on the historical origins of democracy and executive constraint (Ahmed & Stasavage, 2020; Gerring, Apfeld, Wig, & Tollefsen, 2022), and the deep-roots literature on the long-run persistence of cultural and political orientations (Nunn, 2020). The first literature explains how geography, exchange, and early patterns of political organization shaped the emergence of more constrained and participatory forms of rule. The second shows that contemporary attitudes and behaviors often reflect inherited social environments rather than only present-day institutions. For example, contemporary trust has been linked to ancestral kinship tightness (Enke, 2018), and ancestral kinship structures have also been associated with contemporary ideological orientation (Fasching & Lelkes, 2024). Related work shows that ancestral pastoralism and agricultural technologies are connected to durable patterns in gender norms, marriage behavior, and labor-market outcomes (Alesina, Giuliano, & Nunn, 2011, 2018; Becker, 2023, 2025a, 2025b; Giuliano, 2015). Bringing these strands together, I shift attention from the historical origins of democratic institutions to the mass attitudes that can sustain or weaken them. Specifically, I ask whether pastoral nomadism, as a historically grounded mode of social organization, helps explain contemporary support for unconstrained executive authority.

The remainder of the paper proceeds as follows. Section 2 develops the conceptual framework and derives testable implications. Section 3 describes the data, the ancestry-linkage procedure, and the construction of the relative nomadic pastoralism suitability and nomadic-corridor measures. Section 4 outlines the empirical strategy, distinguishing the pre-industrial validation exercises from the contemporary political-attitudes specifications. Section 5 presents the pre-industrial validation results, showing that the corridor and ecological proxies predict nomadic social organization in the Ethnographic Atlas. Section 6 then establishes the baseline association between ancestral nomadic exposure and support for unconstrained leadership using the Ethnographic Atlas nomadic indicator, while Section 7 examines the main ecological results based on relative nomadic pastoralism suitability and probes their interpretation through additional robustness and comparison exercises. Section 8 introduces the nomadic-corridor proxy and shows that proximity to reconstructed corridors yields a substantively similar pattern. Section 9 concludes.

[4]The WVS item "a strong leader who does not have to bother with parliament and elections" is widely used as a democracy-relevant attitude measure, since greater agreement reflects lower support for executive constraints. See, for example, Acemoglu, Ajzenman, Aksoy, Fiszbein, and Molina (2024).

2 From Nomadic Social Organization to Leader-Centered Preferences

Economically, pastoral production was central to nomadic life, but not in a self-sufficient sense (Khazanov, 1981). In Khazanov's account, pastoral nomadism was generally non-autarkic: its reproduction depended on sustained relations with sedentary agricultural societies (Khazanov, 1981). This economic structure helps explain why political authority was often organized around leaders rather than dense intermediary institutions. Exchange and redistribution frequently took forms described as a gift economy (Kradin, 2002). Nomadic rulers often received tribute from settled societies—an extractive relationship commonly framed as "gift exchange." In this setting, resources circulated primarily through reciprocal giving and centralized redistribution—typically mediated by leaders—rather than through production-based taxation or impersonal markets. The ability to acquire and redistribute goods helped sustain loyalty, manage alliances, and reproduce hierarchy, making the redistributor a central political actor. When exchange was limited—due to a scarcity of tradable goods or to the breakdown of trade and marriage-based alliances that otherwise secured stable access—conflict became more likely (Di Cosmo, 1994). When revenues were not based on plunder, they typically came from taxing nearby agricultural societies, as well as from trade-related income that depended less on producing and exchanging goods than on controlling and securing routes through military power (Di Cosmo, 2021). This placed the leader at the center of pastoral nomadic life as the principal broker between nomadic and sedentary societies.

This economic organization also implies a weaker functional demand for impersonal, third-party institutions. In pastoral nomadic settings, the household was the primary unit of production and consumption, and routine exchange rarely extended beyond the family (Kradin, 2002). This matters because many institutional problems that generate demand for formal, impersonal rules arise when cooperation and exchange must be sustained among non-kin (North, 1990). When transactions take place between unrelated actors, commitment and opportunism problems become more salient, and sustaining cooperation may require enforcement mechanisms that extend beyond family discipline and kin-based reputation. A canonical illustration is Greif (1993), who shows how impersonal exchange can be supported through coalition-based enforcement and multilateral punishment strategies. By contrast, when economic life is organized largely within the household, many enforcement problems are absorbed within the kin group: monitoring is easier, sanctions are cheaper, and repeated interaction is embedded in dense social ties. The implication is not the absence of rules, but a reduced functional demand for bureaucratic institutions that support large-scale impersonal exchange, routine fiscal extraction, and stable intermediary bargaining arenas between ruler and population. Organizational capacity therefore tends to form around what remains systematically central—external bargaining, redistribution, and coordination with neighboring agrarian societies—rather than around the administration of dense commercial life. [5]

[5]At the same time, it is important to distinguish steppe social organization from later imperial formations with nomadic roots (e.g., the Seljuk and Ottoman Empires), whose institutional mix cannot be reduced to pastoral governance alone. Still, scholars emphasize the comparatively "portable" and locally anchored

Taken together, this environment provides a coherent logic for why nomadic societies may have generated stronger support for leader-centered authority and weaker demand for institutional constraints. First, a non-autarkic, redistribution-centered political economy reduces the functional demand for institutions and contracts that extend beyond kinship boundaries and, in turn, limits the scope for arenas in which power is routinely bargained over and shared. Second, the centrality of redistribution places the leader, as broker, at the core of social and economic life, reinforcing dependence on personalized authority rather than impersonal, rule-based governance. Third, when economic organization is concentrated in relatively small household-based units rather than mediated through dense impersonal institutions, the demand for formal intermediary bodies is weaker, which can further elevate personalized leadership as the main coordinating mechanism. The implication is not the absence of rules, but a political culture in which authority is more readily organized through brokerage, coordination, and personal leadership than through institutionalized checks and balances.

character of some Ottoman legal-administrative practices—for instance, the idea that the "court" could effectively be wherever the *kadi*'s household was located (Ortayli, 2018).

3 Data

I use individual-level data from the World Values Survey (WVS) and focus on second-generation immigrants, defined as respondents who are not migrants themselves but whose mother and father are both migrants. Each respondent's self-reported ethnic group in the WVS is matched to an Ethnographic Atlas (EA) society (Murdock, 1981; Murdock et al., 2025). I then assign the matched EA society's focal latitude and longitude as an ancestral location, which serves as a proxy for the group's ethnolinguistic homeland. I restrict the sample to Africa, Asia, and Europe because pre-1500 pasture—and the large livestock economies it reflects—was largely absent in the pre-Columbian Americas (e.g., horses and cattle were introduced after European contact) (Klein Goldewijk et al., 2011).

I use two datasets to construct explanatory variables intended to capture nomadic culture and nomadic ecological exposure.

First, using these ancestral homelands, I construct a measure of exposure to nomadic culture based on proximity to the nomadic corridor developed by Paik and Shahi (2023), which builds on the GIS-based simulation approach of Frachetti et al. (2017). The underlying algorithm simulates mobility corridors shaped by pastoralists' seasonal movements over long periods. I measure exposure as the shortest geodesic distance from each ancestral homeland to the corridor (or an equivalent proximity transformation), such that higher values indicate closer proximity and greater exposure.

Second, I use the nomadic pastoralism suitability raster from Beck and Sieber (2010). This is not a direct historical measure of observed pastoralism, but rather a model-based environmental suitability surface. Specifically, Beck and Sieber construct this variable using a Maxent ecological niche model that estimates the probability of occurrence of nomadic pastoralism from georeferenced presence records and environmental predictors, including climate variables and FAO soil classifications.

I construct a set of geographic and ancestral controls around EA ancestral locations. Caloric suitability is captured by the Caloric Suitability Index from Galor and Özak (2015). I also control for the Ethnographic Atlas year of observation and absolute latitude. Distance to the coast is computed as the distance to the nearest ice-free coastline using shoreline data from the National Centers for Environmental Information (Wessel & Smith, 1996). [6]

Individual-level controls are taken from the WVS and include gender, age, employment status, and marital status; in extended specifications I further control for town size, education, religion, self-reported income, and (where available) a measure of human mobility.

The main outcome is the World Values Survey item on support for a strong leader—"having a strong leader who does not have to bother with parliament and elections"—which I rescale so that higher values indicate stronger support for unconstrained executive leadership.

[6]Data available at https://www.ngdc.noaa.gov/mgg/shorelines/shorelines.html.

4 Method

The empirical strategy links ancestral nomadic social organization to contemporary political attitudes—specifically, support for unconstrained executive authority—using a second-generation immigrant design. The identifying intuition is to compare individuals who share the same host-country institutional environment and period shocks but differ in the pre-industrial social organization and ecology of their ancestral groups. I implement this strategy in two steps. First, I validate that the ancestry-linked proxies used in the contemporary analysis covary with historically nomadic social organization in the Ethnographic Atlas (EA). Second, I estimate contemporary specifications in the World Values Survey (WVS) that relate these proxies to support for a strong leader who does not have to bother with parliament and elections. In operational terms, each respondent's self-reported ethnic identity is matched to an EA society; I use the society's year of observation, latitude, and longitude as the group's ancestral homeland, compute the relevant exposure measures around that location, and assign them back to respondents.

Let i index individuals, g ancestral ethnolinguistic groups (EA societies), c host countries, and t WVS survey waves. The main outcome is support for a strong leader who does not have to bother with parliament and elections, recoded so that higher values indicate stronger support for unconstrained executive authority (denoted Y_{igct}). The baseline contemporary specification takes the form:

$$Y_{igct} = \beta\,\text{NomadExposure}_g + \underset{i}{X'}\gamma + \underset{g}{Z'}\delta + \mu_{ct} + \rho_{r(g)} + \varepsilon_{igct}, \qquad (1)$$

where NomadExposure_g is an ancestry-linked proxy of nomadic exposure assigned at the ancestral-group level, X_i is a vector of individual controls (age, gender, employment status, marital status, and town size), and Z_g captures ancestral geography and ecology: EA year of observation, absolute latitude, pre-1500 caloric suitability, and distance to the ice-free coast. I control for the Ethnographic Atlas year of observation because some ancestral societies were recorded at later historical moments than others, and this chronological heterogeneity may capture differences in the level of social or political development reflected in the ethnographic record. I also control for absolute latitude as a broad geographic proxy for long-run ecological and developmental differences. Distance to the coast is included because coastal accessibility has historically shaped trade, migration, and the diffusion of political institutions, all of which may independently affect long-run political development and political attitudes (Gerring et al., 2022). Finally, I control for caloric suitability to account for broad differences in ancestral land productivity that may independently shape long-run social and political development (Ahmed & Stasavage, 2020; Galor & Ö zak, 2015). The term μ_{ct} denotes host-country and survey-wave fixed effects, and $\rho_{r(g)}$ are ancestral-region fixed effects that absorb broad differences across origin regions. Standard errors are clustered at the ancestral-group (ethnicity) level, consistent with the level at which the ancestry-linked regressors vary.

I operationalize NomadExposure_g using two complementary proxies—corridor proximity and relative nomadic pastoralism suitability—which are introduced one at

a time in separate specifications to keep interpretation transparent. The main ecological proxy is relative nomadic pastoralism suitability, constructed as the standardized difference between land suitability for nomadic pastoralism and land suitability for agriculture around ancestral homelands, and then re-standardized. In the main specifications, I construct this variable within a 50km buffer; Appendix B reports parallel results using a broader 100km buffer to assess sensitivity to spatial scale. Extended specifications additionally add religion denomination dummies, income categories, or education categories.

4.1 Construction and Intuition of the Main Explanatory Variables

The two ancestry-linked proxies capture distinct but related dimensions of exposure to nomadic ecology and mobility networks: proximity to a simulated nomadic corridor and relative environmental suitability for nomadic pastoralism. This focus reflects a basic ecological logic of pastoral life: "There is no livestock without grass; there is no food without livestock" (Khazanov, 1981, p. 144).

First, I use the model-based environmental suitability surfaces for basic land-use strategies developed by Beck and Sieber (2010), who estimate the geographic suitability for hunting-and-gathering, agriculture, sedentary animal husbandry, and nomadic pastoralism using ecological modeling based on climate and soil conditions. Rather than relying on nomadic pastoralism suitability alone, I construct a measure of *relative nomadic pastoralism suitability* following Becker (2019). Specifically, for each ancestral homeland, I compute land suitability for nomadic pastoralism and land suitability for agriculture within a local spatial buffer, standardize both components, take their difference, and then re-standardize the resulting index. Higher values therefore indicate ecological conditions that were comparatively more favorable to nomadic pastoralism than to sedentary agriculture. This relative measure is closer to the theoretical mechanism of interest, because the argument is not simply that pastoral conditions matter in isolation, but that environments more favorable to mobile pastoralism relative to agriculture were more likely to sustain social organization centered on kin-based production, bargaining power, and strong personal leadership. In the main specifications, I use the 50km version of this measure; Appendix B reports the corresponding 100km version as a robustness check.

Corridor proximity captures exposure to historically persistent mobility networks used by pastoral populations (see Figure 3). The corridor is derived from a GIS-based simulation framework that approximates long-run pastoral movement routes shaped by terrain and ecological constraints (Frachetti et al., 2017; Paik & Shahi, 2023). For each ancestral homeland, I compute the shortest geodesic distance to the corridor and apply a monotonic proximity transformation so that larger values indicate greater exposure (i.e., closer proximity).

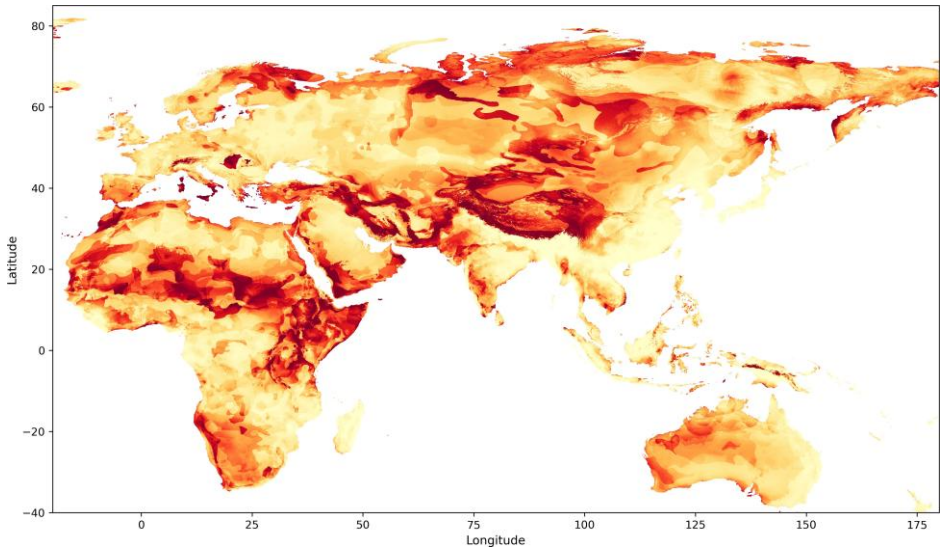


Fig. 2: Nomadic pastoralism suitability raster from Beck and Sieber (2010). Darker areas indicate higher modeled environmental suitability for nomadic pastoralism. This raster is one component used to construct the relative nomadic pastoralism suitability measure around ancestral homelands.



Fig. 3: Nomadic corridor exposure surface used to construct ancestral proximity to pastoral mobility networks. Darker areas indicate greater modeled exposure (i.e., closer proximity) to the nomadic corridor system derived from the simulation-based framework in Frachetti et al. (2017) and adapted by Paik and Shahi (2023).

4.2 Pre-Industrial Validation: Nomadic Social Organization in the Ethnographic Atlas

The pre-industrial validation exercise asks whether the ecological and corridor-based proxies used in the contemporary analysis covary with historically observed nomadic

social organization in the EA. The outcome is a binary indicator derived from the EA settlement variable (EA030). The baseline coding classifies societies as nomadic using EA030, and robustness checks consider alternative thresholds, including a stricter definition based on full nomadism and broader codings that combine semi-nomadic and fully nomadic categories. The key predictors are the ancestry-linked ecological and corridor proxies—relative nomadic pastoralism suitability and corridor proximity—which capture local ecological conditions favorable to nomadic pastoralism relative to agriculture and exposure to historically persistent mobility networks. Specifications condition on absolute latitude, caloric suitability index, distance to the ice-free coast, and EA year of observation where relevant, and include continent fixed effects. The purpose of this step is validation rather than causal identification: it establishes that the proxies used in the contemporary analysis align with historically nomadic social organization in the expected direction under demanding controls.

5 Relative Nomadic Pastoral Suitability and Nomadic Incidence in Pre-Industrial Societies

Table 1 provides a pre-industrial validation exercise showing that two ancestry-linked proxies—nomadic-corridor proximity and relative pastoral suitability—strongly predict nomadic social organization in the Ethnographic Atlas. In columns (1)-(3), ln proximity to the nomadic corridor is positively and statistically significantly associated with nomadism in the Old World nomadic-core sample, and this relationship persists in the Asia-only subsample. The estimated association remains substantively stable after adding baseline ancestry-linked geographic controls, including absolute latitude, EA focal year, distance to the coast, and caloric suitability. Columns (4)-(6) replicate the validation using a relative pastoral suitability index, defined as the standardized difference between land suitability for nomadic pastoralism and land suitability for agriculture, and then re-standardized. This ecological proxy is likewise positively and statistically significantly associated with nomadic social organization. The result remains robust both in specifications with region fixed effects and in the specification replacing region fixed effects with continent fixed effects. Overall, the evidence supports the construct validity of both proxies and indicates that they capture variation in nomadic social organization beyond broad geography, chronology, and general land productivity.

Table 1: Pre-industrial Validation: Nomadic Corridor Proximity and Relative Pastoral Suitability Predict Nomadic Social Organization

	Nomadic corridor proximity			Relative pastoral suitability		
	(1)	(2)	(3)	(4)	(5)	(6)
ln proximity to nomadic corridor	0.550**	0.607**	0.545**			
	(0.260)	(0.291)	(0.239)			
	[0.034]	[0.037]	[0.023]			
Relative pastoral suitability				1.919***	1.484***	1.403***
				(0.242)	(0.247)	(0.215)
				[0.000]	[0.000]	[0.000]
Observations	92	92	116	616	616	702
Pseudo R-sq.	0.280	0.326	0.301	0.360	0.420	0.357
Old World	Yes	Yes	Yes	Yes	Yes	Yes
Nomadic core	Yes	Yes	No	No	No	No
Asia only	No	No	Yes	No	No	No
Region fixed effects	Yes	Yes	Yes	Yes	Yes	No
Continent fixed effects	No	No	No	No	No	Yes
Absolute latitude	No	Yes	Yes	No	Yes	Yes
EA focal year	No	Yes	Yes	No	Yes	Yes
ln distance to coast	No	Yes	Yes	No	Yes	Yes
ln caloric suitability	No	Yes	Yes	No	Yes	Yes

Notes: Entries report logit coefficients, heteroskedasticity-robust standard errors in parentheses, and p-values in square brackets. The dependent variable is an indicator for nomadic social organization in the Ethnographic Atlas. Columns (1)–(3) report specifications using ln proximity to the nomadic corridor. Columns (4)–(6) report specifications using relative pastoral suitability. Columns (1)–(2) restrict the sample to Old World societies in the nomadic core, while column (3) reports the Asia-only subsample. Columns (4)–(5) use the Old World sample, and column (6) replaces region fixed effects with continent fixed effects in the full Old World sample. Significance levels: $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

6 Ancestral Nomadism and Support for Unconstrained Leader

Table 2 shows a robust positive association between nomadic ancestry—defined using a combined full- and semi-nomadic indicator—and support for a strong leader who does not have to bother with parliament and elections. The intuition is straightforward: in historically mobile pastoral environments, coordination, protection, and redistribution often relied more heavily on personalized authority and leadership capacity than on territorially fixed, impersonal institutions. If such organizational logics leave persistent cultural imprints, descendants of populations with stronger nomadic ancestry should be relatively more receptive to leader-centered political authority today.

The regression results are consistent with this mechanism. The coefficient on nomadic ancestry is positive and statistically significant across all specifications, with estimates ranging from 0.404 to 0.601. The association is already evident in the baseline specification that includes country and year fixed effects and ancestry-linked continent fixed effects (col. 1), and it remains stable after adding ancestry-linked caloric suitability and distance to the coast (col. 2) and then introducing individual-level covariates and town size (col. 3). Importantly, replacing ancestry-linked continent

fixed effects with the more granular ancestry-linked region fixed effects does not alter the substantive conclusion: the estimated association remains positive and statistically significant (col. 4). The relationship also persists when additionally conditioning on religion-denomination dummies (col. 5) and when adding potentially endogenous post-migration controls such as income (col. 6) or education (col. 7).

Taken together, these patterns support the paper's broader argument that historically rooted forms of social organization can shape contemporary political attitudes through long-run cultural transmission. At the same time, the estimates should be interpreted as conditional associations rather than definitive causal effects. The contribution of Table 2 is to document the robustness of the nomadic-ancestry gradient in support for leader-centric authority under a demanding set of fixed effects and controls, including alternative specifications of ancestry-region fixed effects and a series of sensitivity checks.

Table 2: Support for Unconstrained Leader and Nomadic Ancestry (Full + Semi-Nomadic Indicator)

	Support for unconstrained leader						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Nomadic ancestry (full + semi-nomadic)	0.478***	0.448**	0.457**	0.601***	0.450**	0.452**	0.404**
	(0.150)	(0.172)	(0.186)	(0.163)	(0.182)	(0.184)	(0.181)
	[0.002]	[0.012]	[0.017]	[0.001]	[0.016]	[0.017]	[0.029]
Observations	14600	14600	14397	14396	14070	14238	14320
# of clusters	58	58	58	57	58	58	57
Adj. R-sq.	0.166	0.167	0.170	0.170	0.172	0.171	0.175
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE (EA)	Yes	Yes	Yes	No	Yes	Yes	Yes
Region FE (EA)	No	No	No	Yes	No	No	No
Absolute latitude	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EA focal year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Caloric suitability	No	Yes	Yes	Yes	Yes	Yes	Yes
Distance to coast	No	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	No	Yes	Yes	Yes	Yes	Yes
Town size	No	No	Yes	Yes	Yes	Yes	Yes
Religion dummies	No	No	No	No	Yes	No	No
Income	No	No	No	No	No	Yes	No
Education	No	No	No	No	No	No	Yes

Notes: Entries report coefficients, standard errors in parentheses, and p-values in square brackets. Standard errors are clustered at the ethnicity-cluster level. The outcome is support for a strong leader who does not have to bother with parliament and elections. Significance levels: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

7 Relative Nomadic Pastoral Suitability and Support for Unconstrained Leader

Relative nomadic pastoralism suitability is the paper's main ecological proxy for ancestral exposure to nomadic lifeways. Unlike the Ethnographic Atlas nomadic indicator, it does not measure realized historical social organization directly, but rather whether the ancestral local ecology was relatively more favorable to nomadic pastoralism than to agriculture. I therefore treat it as the most plausibly exogenous ancestry-linked ecological measure in the paper. Specifically, I construct the variable from the spatial suitability surfaces in Beck and Sieber (2010) as the standardized difference between land suitability for nomadic pastoralism and land suitability for agriculture within a 50km buffer around each matched ancestral homeland, and then re-standardize the resulting difference.

Table 3 shows a consistently positive association between higher ancestral relative nomadic pastoralism suitability and present-day support for an unconstrained leader. The coefficient remains positive and statistically significant in every specification, ranging from 0.142 to 0.216. Columns (1)–(2) show that the association is already present when conditioning on year, host-country, and Ethnographic-Atlas continent fixed effects, together with baseline ancestral controls such as absolute latitude and EA focal year; adding caloric suitability and distance to the coast leaves the estimate substantively unchanged. Columns (3)–(4) further add individual controls and town size, and column (4) replaces continent fixed effects with ancestral-region fixed effects, showing that the relationship is not driven simply by broad differences across major origin areas. Columns (5)–(8) demonstrate that the result remains stable when additionally accounting for religion, excluding respondents with post-Soviet parental origins, and controlling separately for income and education. Taken together, the pattern suggests that the estimated relationship is not reducible to broad ancestral geography, ecological productivity, coastal accessibility, compositional differences across respondents, or a particular set of fixed effects.

The richer individual controls further tighten the comparison. Demographic controls and town size absorb observable compositional differences across respondents, while religion-denomination indicators address the possibility that the result reflects contemporary religious affiliation rather than deeper ancestral social organization. The income and education specifications likewise show that the association is not reducible to socioeconomic position or human-capital differences that may themselves correlate with authoritarian attitudes. Across these specifications, the coefficient remains substantively stable, strengthening the interpretation that the relationship is not explained away by these competing channels.

Three rival explanations are especially important at this stage. First, the association may simply reflect broad regional composition rather than a more general ancestry-linked pattern. Second, it may be driven by more recent post-Soviet political legacies rather than deeper historical social organization. Third, it may capture diffuse anti-system sentiment rather than a more specific preference for leader-centered, weakly constrained authority. The remainder of this section addresses each of these concerns in turn.

Table 3: Support for Unconstrained Leader and Relative Nomadic Pastoralism Suitability (50km)

	Support for unconstrained leader							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative nomadic pastoralism suitability	0.142*** (0.052) [0.008]	0.189*** (0.050) [0.000]	0.197*** (0.051) [0.000]	0.199*** (0.052) [0.000]	0.196*** (0.049) [0.000]	0.216*** (0.050) [0.000]	0.194*** (0.050) [0.000]	0.173*** (0.053) [0.002]
Observations	14469	14469	14266	14266	13938	11924	14110	14189
# of clusters	62	62	62	62	62	49	62	62
Adj. R^2	0.168	0.171	0.174	0.174	0.176	0.199	0.175	0.178
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE (EA)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Region FE (EA)	No	No	No	Yes	No	No	No	No
Absolute latitude	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EA focal year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Caloric suitability	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to coast	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Town size	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Religion dummies	No	No	No	No	Yes	No	No	No
Exc. post-Soviet origins	No	No	No	No	No	Yes	No	No
Income	No	No	No	No	No	No	Yes	No
Education	No	No	No	No	No	No	No	Yes

Notes: Entries report coefficients, standard errors in parentheses, and p-values in square brackets. Standard errors are clustered at the ethnicity-cluster level. The outcome is support for a strong leader who does not have to bother with parliament and elections. Relative nomadic pastoralism suitability (50km) is constructed from the standardized difference between land suitability for nomadic pastoralism and land suitability for agriculture within a 50km radius, and then re-standardized. Column (6) re-estimates the specification while excluding respondents with post-Soviet parental origins. Significance levels: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

In Model (4), I assess whether the result is driven disproportionately by any single ancestral-origin region. To do so, I re-estimate the baseline specification repeatedly while excluding one Old World origin region at a time. Figure 4 shows that the coefficient on nomadic pastoralism suitability remains positive throughout the leave-one-origin-region-out exercise and generally stays close to the full-sample estimate. This pattern indicates that the main association is not reducible to any single broad ancestral region, even if some exclusions attenuate the estimate more than others.

I next examine whether the result reflects a specific preference for leader-centered, weakly constrained authority rather than a more general attraction to non-electoral alternatives. To do so, I replicate the analysis using the WVS measure of support for expert rule. Figure 5 shows a clear contrast: ancestral nomadic pastoralism suitability is positively associated with support for an unconstrained leader, but not with support for expert rule. This comparison strengthens the interpretation that the main relationship is not simply capturing diffuse anti-system sentiment, but a more specific attitudinal preference for personalized executive authority.

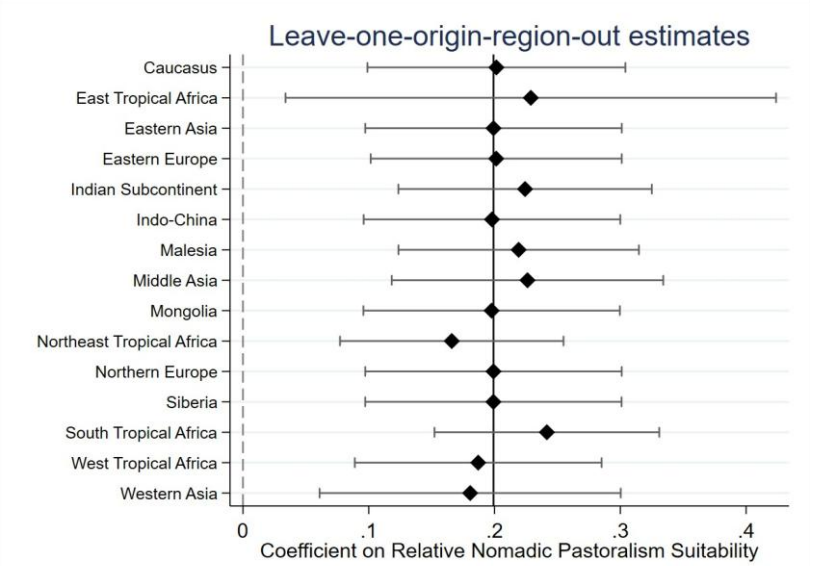


Fig. 4: Leave-one-origin-region-out estimates for nomadic pastoralism suitability. The figure plots the coefficient on relative nomadic pastoralism suitability (50km) from the main specification after excluding one Old World origin region at a time. Points denote coefficient estimates and whiskers denote 95% confidence intervals. The solid vertical line marks the baseline full-sample estimate, and the dashed vertical line marks zero.

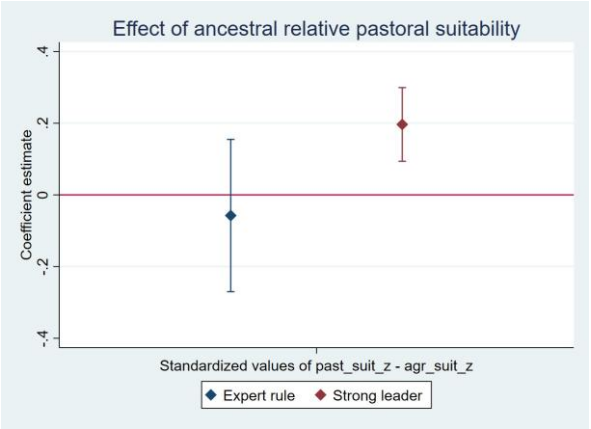


Fig. 5: Comparison of the relative nomadic pastoral suitability coefficient across political outcomes. The figure plots the estimated coefficient on ancestral relative nomadic pastoral suitability for support for an unconstrained leader and support for expert rule. Points denote coefficient estimates and whiskers denote 95% confidence intervals. Ancestral relative nomadic pastoral suitability is positively associated with support for an unconstrained leader, but not with support for expert rule.

8 Ancestral Exposure to Nomadic Corridor and Support for Unconstrained Leader

Eurasia offers an especially appropriate setting for examining the long-run cultural legacy of nomadic social organization. To capture ancestral exposure to nomadic institutions, I use proximity to the nomadic corridor developed by Paik and Shahi (2023), which builds on the GIS-based simulation framework introduced by Frachetti et al. (2017). The underlying idea is that ecological constraints on seasonal pastoral mobility generated recurrent pathways of movement and exchange across Inner Asia; over time, these routes structured broader patterns of connectivity and overlapped closely with the geography of highland Silk Road interaction. Paik and Shahi extend this framework to a wider Asian highland space and use the simulated corridor network as a proxy for ancient transportation routes rooted in pastoral mobility. I treat proximity to this corridor as an ancestry-linked indicator of historical exposure to mobile pastoral environments in which political and economic coordination relied relatively more on bargaining, redistribution, and leader-centered authority than on routinized impersonal institutions. Under this logic, individuals whose ancestral homelands lay closer to these corridors should be more likely to express support for unconstrained leadership today.

Table 4 provides evidence consistent with this prediction. In the Asia ancestral-origin sample, higher nomadic corridor proximity (measured as ln proximity) is positively and statistically significantly associated with support for a strong leader who does not have to bother with parliament and elections. The association is already present in the baseline specification (col. 1), remains when adding ancestry-linked ecological controls-caloric suitability and distance to the coast (col. 2)-and persists after introducing individual-level covariates and town-size controls (col. 3). The coefficient remains stable in additional sensitivity specifications that add religion-denomination dummies (col. 4) or include potentially endogenous post-migration controls such as income (col. 5) or education (col. 6). Taken together, the consistency of the estimates across specifications suggests that the corridor-proximity relationship is not simply an artifact of broad geography, baseline ecology, or observable respondent composition. As elsewhere in the paper, these results should be interpreted as conditional associations rather than definitive causal effects.

Table 4: Support for Unconstrained Leader and Nomadic Corridor Proximity (Asia Ancestral-Origin Sample)

	Support for unconstrained leader					
	(1)	(2)	(3)	(4)	(5)	(6)
Nomadic corridor proximity (ln)	0.263***	0.227***	0.208***	0.211***	0.207***	0.225***
	(0.085)	(0.055)	(0.049)	(0.049)	(0.047)	(0.053)
	[0.004]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	9447	9447	9422	9356	9346	9370
# of clusters	34	34	34	34	34	34
Adj. R^2	0.220	0.221	0.223	0.224	0.225	0.227
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Absolute latitude	Yes	Yes	Yes	Yes	Yes	Yes
EA focal year	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Caloric suitability	No	Yes	Yes	Yes	Yes	Yes
Distance to coast	No	Yes	Yes	Yes	Yes	Yes
Individual controls	No	No	Yes	Yes	Yes	Yes
Town size	No	No	Yes	Yes	Yes	Yes
Religion dummies	No	No	No	Yes	No	No
Income	No	No	No	No	Yes	No
Education	No	No	No	No	No	Yes

Notes: Entries report coefficients, standard errors in parentheses, and p-values in square brackets. Standard errors are clustered at the ethnicity-cluster level. The outcome is support for a strong leader who does not have to bother with parliament and elections. The sample is restricted to the Asia ancestral-origin sample (i.e., ancestry coded from societies located in Asia). Significance levels: $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

9 Conclusion

This paper examines whether historical nomadic social organization contributes to contemporary support for unconstrained executive authority. Using the WVS and focusing on second-generation immigrants, I map respondents' self-reported ethnic identities to Ethnographic Atlas societies to proxy ancestral homelands. My primary explanatory measure is relative nomadic pastoral suitability, which I treat as the most plausibly exogenous ecological proxy for historical nomadic exposure. I corroborate the main results using two additional ancestry-linked measures—pasture share in ancestral local land use and proximity to reconstructed nomadic corridors—and I use the Ethnographic Atlas nomadic indicator as a historical baseline rather than as the paper's exogenous ecological proxy. Leveraging within host-country and survey-year comparisons, I find that greater ancestral exposure to nomadic pastoral suitability is associated with systematically stronger support for a "strong leader" who does not have to contend with parliaments and elections, even after conditioning on a demanding set of individual covariates, broad ancestral-region fixed effects, and ancestry-linked geography and ecology.

I interpret this pattern through the political economy of mobile pastoral life. In contexts where fixed investments and surplus production are less central, collective outcomes rely more heavily on coordination and bargaining, including bargaining vis-à-vis

surrounding sedentary polities. Leadership therefore becomes a core political technology: a charismatic and credible leader can mobilize followers, coordinate collective action, and improve bargaining leverage. Redistribution in such settings is also more personalized, with leaders acting as brokers who allocate acquired resources across households and lineages, thereby converting external inflows into internal cohesion and political authority. Finally, when economic organization is primarily household-based rather than mediated by dense, impersonal institutions, social order is sustained less through rule-bound bureaucratic constraints and more through brokerage, loyalty, and hierarchical coordination. Together, these features generate a leadership-centered political culture in which authority is anchored in personalistic coordination and redistribution rather than in institutionalized checks and balances.

These findings speak to the broader literature on mass support for democracy by highlighting an attitudinal margin that is conceptually central to democratic governance: preferences over constraints on executive power. The results suggest that deep historical social organization can leave durable imprints on the demand for unconstrained leadership, even when individuals are embedded in contemporary institutional environments that are held constant within the empirical design. At the same time, the evidence should not be read as implying that ancestral legacies are destiny. Political attitudes are shaped by contemporary institutions, education, and socialization, and these forces can attenuate or counteract inherited predispositions. From a policy perspective, clarifying the origins of anti-constraint preferences helps identify where democratic consolidation may face greater cultural headwinds—and where investments in civic education, participatory norms, and institutional trust may be especially consequential. More generally, the analysis underscores that understanding the roots of non-democratic attitudes is a step toward identifying the conditions under which they can be mitigated.

Appendix A Variable Definitions

Support for unconstrained leader. The main dependent variable is based on the World Values Survey item asking whether "having a strong leader who does not have to bother with parliament and elections" is a good or bad way of governing. I code the variable so that higher values indicate stronger support for unconstrained leadership.

Support for expert rule. In auxiliary analyses, I use the World Values Survey item on support for expert rule as a comparison outcome. This variable is coded so that higher values indicate stronger support for government by experts rather than elected institutions.

Ethnicity-to-Ethnographic-Atlas Matching Procedure To link contemporary respondents to pre-industrial ethnographic characteristics, I match self-reported ethnicity labels in the WVS to society names in the Ethnographic Atlas. The procedure combines three steps. First, I apply a manually curated dictionary for standardized and country-specific cases where historical society names and contemporary survey labels differ systematically. Second, I implement exact matching after harmonizing whitespace, punctuation, and orthographic variation. Third, for remaining unmatched cases, I apply conservative fuzzy matching to normalized ethnicity labels using a high similarity threshold. This procedure prioritizes precision over coverage and therefore leaves many survey ethnicity labels unmatched.

Table A1 reports summary statistics for the matching process. The full ethnicity-to-Ethnographic-Atlas crosswalk is provided in the replication materials.

Table A1: Summary of Ethnicity-to-Ethnographic-Atlas Matching

Statistic	Count
Total WVS observations	661,667
Matched observations	49,192
Unmatched observations	612,475
Dictionary matches	9,932
Exact matches	21,640
Fuzzy matches	17,620
Unique non-missing ethnicity labels	922
Unique ethnicity labels matched	151
Unique-label match rate	16.38%

Nomadic social-organization indicator. As a baseline ancestry-linked measure, I use an Ethnographic Atlas indicator of nomadic social organization derived from the settlement-pattern variable. This measure captures whether the matched ancestral society was historically organized around nomadic or semi-nomadic lifeways. Because it reflects realized historical social organization rather than ecological endowments alone, I treat it as a baseline historical proxy rather than the most exogenous measure.

Relative nomadic pastoralism suitability (50km). The main explanatory variable is an ancestry-linked ecological measure capturing whether the ancestral local environment was relatively more suitable for nomadic pastoralism than for agriculture. Using the spatial suitability surfaces from (Beck & Sieber, 2010), I compute land suitability for nomadic pastoralism and land suitability for agriculture within a 50km buffer around each matched ancestral homeland, standardize both components, take their difference, and then re-standardize the resulting index. Higher values indicate that the ancestral local ecology was comparatively more favorable to nomadic pastoralism than to sedentary agriculture. In the paper, I treat this as the main ecological proxy of historical nomadic exposure.

Nomadic corridor proximity. Another complementary explanatory variable measures ancestral proximity to reconstructed Eurasian nomadic corridors. Using the corridor network reported by (Paik & Shahi, 2023), rooted in the GIS-based mobility-corridor framework of (Frachetti et al., 2017), I calculate the distance from each ancestral homeland to the nearest corridor segment and transform this into a proximity measure such that higher values indicate closer proximity and greater ancestral exposure to historically persistent nomadic mobility networks.

Nomadic incidence in the Ethnographic Atlas. In the pre-industrial validation exercises, the dependent variable is a binary indicator of nomadic social organization derived from the Ethnographic Atlas settlement variable EA030 (Murdock, 1981; Murdock et al., 2025). The baseline coding classifies societies as nomadic using the settlement categories reported in the Ethnographic Atlas, while appendix checks consider stricter and broader thresholds.

Second-generation immigrant sample. The main contemporary analysis focuses on second-generation immigrants, defined as respondents who are not migrants themselves but whose mother and father are both migrants. This design enables within-host-country and within-survey-year comparisons among individuals exposed to the same contemporary institutional environment but differing in ancestral origins.

Old World sample. Nomadic pastoral suitability is estimated for ancestral homelands in Africa, Asia, and Europe. This restriction reflects the fact that large-livestock pastoral economies were largely absent in the pre-Columbian Americas prior to European contact (Klein Goldewijk et al., 2011).

Asia ancestral sample. Corridor specifications are estimated on the relevant Eurasian ancestral sample because the nomadic corridor network is constructed for Asia (Frachetti et al., 2017; Paik & Shahi, 2023).

Individual controls. The baseline individual controls include gender, age, employment status, and marital status. In richer specifications, I additionally include town size, religion-denomination indicators, income, and education. I treat religion, income, and education as supplementary robustness controls because they may themselves be influenced by post-migration socialization and integration.

Ancestral geographic and ecological controls. All main specifications additionally condition on ancestry-linked geographic and ecological controls measured around

the matched ancestral homeland. These include absolute latitude, year of observation from Ethnographic Atlas (Murdock, 1981; Murdock et al., 2025), caloric suitability from Galor and Ö zak (2015), and distance to the coast Wessel and Smith (1996). Together, these variables absorb broad ancestral ecological and geographic differences that could otherwise confound the relationship between nomadic exposure and contemporary political attitudes.

Post-Soviet parental-origin exclusion. In a robustness exercise, I exclude respondents whose mother or father was born in a former Soviet republic. This test is intended to show that the main association is not driven by more recent post-Soviet political and institutional legacies rather than deeper historical nomadic exposure.

Appendix B Robustness to Alternative Spatial Buffer: 100km

Table B1 examines whether the main results are robust to constructing the relative nomadic pastoralism suitability measure using a broader 100km spatial buffer rather than the baseline 50km window. The results closely mirror the baseline findings. Across all specifications, relative nomadic pastoralism suitability remains positively and statistically significantly associated with support for an unconstrained leader. The magnitude of the coefficient is also highly stable, and the relationship persists after adding ancestry-linked geographic controls, individual-level controls, town size, religion indicators, and further sensitivity checks that exclude post-Soviet origins or add income and education. Overall, the 100km-buffer results indicate that the main findings are not an artifact of the particular spatial window used to construct the ecological measure, and instead reflect a robust association between ancestral exposure to nomadic pastoral environments and contemporary preferences for unconstrained leadership.

Table B1: Support for Unconstrained Leader and Relative Nomadic Pastoralism Suitability (100km)

	Support for unconstrained leader							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative nomadic pastoralism suitability (100km)	0.146**	0.204***	0.204***	0.210***	0.205***	0.219***	0.201***	0.176***
	(0.068)	(0.060)	(0.062)	(0.067)	(0.060)	(0.060)	(0.062)	(0.063)
	[0.036]	[0.001]	[0.002]	[0.002]	[0.001]	[0.001]	[0.002]	[0.006]
Observations	14469	14469	14266	14266	13938	11924	14110	14189
# of clusters	62	62	62	62	62	49	62	62
Adj. R^2	0.168	0.171	0.173	0.173	0.176	0.199	0.175	0.178
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE (EA)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Region FE (EA)	No	No	No	Yes	No	No	No	No
Absolute latitude	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EA focal year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Caloric suitability	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to coast	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Town size	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Religion dummies	No	No	No	No	Yes	No	No	No
Excluding post-Soviet origins	No	No	No	No	No	Yes	No	No
Income	No	No	No	No	No	No	Yes	No
Education	No	No	No	No	No	No	No	Yes

Notes: Entries report coefficients, standard errors in parentheses, and p-values in square brackets. Standard errors are clustered at the ethnicity-cluster level. The outcome is support for a strong leader who does not have to bother with parliament and elections. Relative nomadic pastoralism suitability (100km) is constructed from the standardized difference between land suitability for nomadic pastoralism and land suitability for agriculture within a 100km radius, and then re-standardized. Column (6) re-estimates the specification while excluding respondents with post-Soviet parental origins. Significance levels: $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

Appendix C Instrumental-Variables Estimates

Following Becker (2019), I implement an instrumental-variables specification that treats nomadic social organization as endogenous and instruments it with relative nomadic pastoralism suitability. The intuition is that the relative ecological suitability of ancestral homelands for nomadic pastoralism, compared with agriculture, predicts historically nomadic social organization while being more plausibly exogenous than realized social organization itself. Table C1 reports two specifications. Column (1) presents the baseline model with ancestral-region fixed effects, while column (2) replaces these with ancestral-continent fixed effects. Both specifications additionally control for absolute latitude, distance to the ice-free coast, Ethnographic Atlas year of observation, caloric suitability, demographic controls, town size, and host-country and survey-year fixed effects. Across both models, the coefficient on instrumented nomadic social organization remains positive and statistically significant, and the Kleibergen–Paap first-stage statistics indicate a relevant first stage.

Table C1: IV Estimates: Nomadic Social Organization and Support for Unconstrained Leader

	Support for unconstrained leader	
	(1)	(2)
Nomadic social organization	1.013**	1.196*
	(0.318)	(0.472)
	[0.002]	[0.014]
Observations	14041	14041
Kleibergen–Paap F	15.815	9.062
Year FE	Yes	Yes
Country FE	Yes	Yes
Region FE	Yes	No
Continent FE	No	Yes
Absolute latitude	Yes	Yes
EA focal year	Yes	Yes
Caloric suitability (50km)	Yes	Yes
Distance to coast	Yes	Yes
Individual controls	Yes	Yes
Town size	Yes	Yes
Religion dummies	No	No

Notes: Entries report IV coefficients, standard errors in parentheses, and p-values in square brackets. The endogenous regressor is nomadic social organization, instrumented with relative nomadic pastoralism suitability. Standard errors are clustered at the ethnicity-cluster level. The outcome is support for a strong leader who does not have to bother with parliament and elections. Column (1) includes ancestral-region fixed effects, while column (2) includes Ethnographic Atlas continent fixed effects. Significance levels: $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

Appendix D Robustness to Alternative Sample Scope: Old World Plus Oceania

Table D1 shows that the main association remains substantively unchanged when the ecological sample is expanded from the Old World to include Oceania (New Zealand and Papuasia), indicating that the results are not driven by the precise geographic scope of the baseline sample restriction.

Table D1: Support for Unconstrained Leader and Relative Nomadic Pastoralism Suitability: Old World Plus Oceania

	Support for unconstrained leader							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative nomadic pastoralism suitability	0.144*** (0.052) [0.007]	0.191*** (0.050) [0.000]	0.198*** (0.052) [0.000]	0.199*** (0.052) [0.000]	0.198*** (0.049) [0.000]	0.218*** (0.050) [0.000]	0.196*** (0.051) [0.000]	0.175*** (0.053) [0.002]
Observations	14470	14470	14267	14266	13939	11925	14111	14190
# of clusters	63	63	63	62	63	50	63	63
Adj. R^2	0.168	0.171	0.173	0.174	0.176	0.199	0.175	0.178
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE (EA)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Region FE (EA)	No	No	No	Yes	No	No	No	No
Absolute latitude	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EA focal year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Caloric suitability	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to coast	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Town size	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Religion dummies	No	No	No	No	Yes	No	No	No
Excluding post-Soviet origins	No	No	No	No	No	Yes	No	No
Income	No	No	No	No	No	No	Yes	No
Education	No	No	No	No	No	No	No	Yes

Notes: Entries report coefficients, standard errors in parentheses, and p-values in square brackets. Standard errors are clustered at the ethnicity-cluster level. The outcome is support for a strong leader who does not have to bother with parliament and elections. Relative nomadic pastoralism suitability is constructed as the standardized difference between land suitability for nomadic pastoralism and land suitability for agriculture, and then re-standardized. The sample expands the baseline Old World ecological sample to additionally include Oceania (New Zealand and Papuasia). Column (6) re-estimates the specification while excluding respondents with post-Soviet parental origins. Significance levels: $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

References

Acemoglu, D., Ajzenman, N., Aksoy, C.G., Fiszbein, M., Molina, C. (2024). (successful) democracies breed their own support. *Review of Economic Studies*, rdae051,

Acemoglu, D., Johnson, S., Robinson, J.A., Yared, P. (2009). Reevaluating the modernization hypothesis. *Journal of monetary economics*, *56* (8), 1043–1058,

Adorno, T. (2019). *The authoritarian personality*. Verso books.

Ahmed, A.T., & Stasavage, D. (2020). Origins of early democracy. *American Political Science Review*, *114* (2), 502–518,

Alesina, A., Giuliano, P., Nunn, N. (2011). Fertility and the plough. *American Economic Review*, *101* (3), 499–503,

Alesina, A., Giuliano, P., Nunn, N. (2018). Traditional agricultural practices and the sex ratio today. *PloS one*, *13* (1), e0190510,

Beck, J., & Sieber, A. (2010). Is the spatial distribution of mankind's most basic economic traits determined by climate and soil alone? *PloS one*, *5* (5), e10416,

Becker, A. (2019). *On the economic origins of restrictions on women's sexuality* (Tech. Rep.). CESifo Working Paper.

Becker, A. (2023). Age at marriage and concerns over women's chastity. *Available at SSRN 5197252* , ,

Becker, A. (2025a). Ancestral pastoralism and women's contemporary labor market outcomes.

Becker, A. (2025b). On the economic origins of concerns over women's chastity. *Review of Economic Studies*, *92* (4), 2303–2329,

Claassen, C. (2020). Does public support help democracy survive? *American Journal of Political Science*, *64* (1), 118–134,

Denemark, D., Mattes, R., Niemi, R.G. (2016). *Growing up democratic: does it make a difference?* Lynne Rienner Publishers.

Di Cosmo, N. (1994). Ancient inner asian nomads: their economic basis and its significance in chinese history. *The Journal of Asian Studies*, *53* (4), 1092–1126,

Di Cosmo, N. (1999). State formation and periodization in inner asian history. *Journal of World History*, 1–40,

Di Cosmo, N. (2021). The war economy of nomadic empires. *Rebel Economies: Warlords, Insurgents, Humanitarians*, 103–25,

Enke, B. (2018). Kinship systems, cooperation, and the evolution of culture.

Fasching, N., & Lelkes, Y. (2024). Ancestral kinship and the origins of ideology. *British Journal of Political Science*, *54* (1), 1–21,

Frachetti, M.D., Smith, C.E., Traub, C.M., Williams, T. (2017). Nomadic ecology shaped the highland geography of asia's silk roads. *nature*, *543* (7644), 193–198,

Galor, O., & Ö zak, Ö . (2015). Land productivity and economic development: Caloric suitability vs. agricultural suitability. *Agricultural Suitability (July 12, 2015)*, ,

Gerring, J., Apfeld, B., Wig, T., Tollefsen, A.F. (2022). *The deep roots of modern democracy: geography and the diffusion of political institutions*. Cambridge University Press.

Giuliano, P. (2015). The role of women in society: from preindustrial to modern times. *CESifo Economic Studies*, *61* (1), 33–52,

Greif, A. (1993). Contract enforceability and economic institutions in early trade: The maghribi traders' coalition. *The American economic review*, 525–548,

Khazanov, A.M. (1981). Myths and paradoxes of nomadism. *European Journal of Sociology/Archives Europ´eennes de Sociologie*, *22* (1), 141–153,

Klein Goldewijk, K., Beusen, A., Van Drecht, G., De Vos, M. (2011). The hyde 3.1 spatially explicit database of human-induced global land-use change over the past 12,000 years. *Global Ecology and Biogeography*, *20* (1), 73–86,

Kradin, N.N. (2002). Nomadism, evolution and world-systems: pastoral societies in theories of historical development. *journal of world-systems research*, *8* (3), 368–388,

Kuran, T. (2004). Why the middle east is economically underdeveloped: historical mechanisms of institutional stagnation. *Journal of economic perspectives*, *18* (3), 71–90,

Kuran, T. (2005). The logic of financial westernization in the middle east. *Journal of Economic Behavior & Organization*, *56* (4), 593–615,

Kuran, T. (2012). The long divergence: How islamic law held back the middle east.

Lipset, S.M. (1959). Some social requisites of democracy: Economic development and political legitimacy1. *American political science review* , *53* (1), 69–105,

Magalhães, P.C. (2014). Government effectiveness and support for democracy. *European Journal of Political Research*, *53* (1), 77–97,

Manz, B.F. (1983). The ulus chaghatay before and after temür's rise to power: The transformation from tribal confederation to army of conquest. *Central Asiatic Journal* , *27* (1/2), 79–100,

Mishler, W., & Rose, R. (2007). Generation, age, and time: The dynamics of political learning during russia's transformation. *American journal of political science*, *51* (4), 822–834,

Murdock, G.P. (1981). *Atlas of world cultures*. University of Pittsburgh Pre.

Murdock, G.P., Textor, R., Barry, I., Herbert, White, D.R., Gray, J.P., Divale, W.T. (2025). *D-place dataset derived from murdock et al. 1999 "ethnographic atlas".* Zenodo.

North, D.C. (1990). *Institutions, institutional change and economic performance*. Cambridge university press.

Nunn, N. (2020). The historical roots of economic development. *Science*, *367* (6485), eaaz9986,

Ortayli, İ. (2018). *The empire's longest century.* Kronik Books.

Paik, C., & Shahi, K. (2023). Ancient nomadic corridors and long-run development in the highlands of asia. *Explorations in Economic History*, *89* , 101482,

Qi, L., & Shin, D.C. (2011). How mass political attitudes affect democratization: Exploring the facilitating role critical democrats play in the process.

International Political Science Review, *32* (3), 245–262,

Wallis, J.J. (2011). Institutions, organizations, impersonality, and interests: The dynamics of institutions. *Journal of Economic Behavior & Organization*, *79* (1-2), 48–64,

Wessel, P., & Smith, W.H. (1996). A global, self-consistent, hierarchical, high-resolution shoreline database. *Journal of Geophysical Research: Solid Earth*, *101* (B4), 8741–8743,