Appendix for

Understanding Cultural Persistence and Change

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A1. Introduction

This appendix accompanies the article "Understanding Cultural Persistence and Change" by Paola Giuliano and Nathan Nunn and published in the *Review of Economic Studies* in 2021. Section A2 provides a note on the dynamics of the model. Section A3 provides the details of the data used in the paper, as well as their sources. Section A4 discusses the relationship between education and cultural persistence and change. Sections A5 and A6 report additional figures and tables that were referenced in the body of the paper, but not reported there.

A2. Further information on the dynamics of the model

The model developed in the paper focuses on the steady state equilibrium proportion of traditionalists x^* in the society. Here, we provide a brief description of a plausible micro-founded

*This version of the appendix for "Understanding cultural persistence and change" updates and supersedes the version dated July 8, 2020. This version provides additional detail on the data (including variable numbers), provides further detail on the definition of an English speaking ancestral group, and reports on an update to variable codes and descriptions that may be unknown to researchers, but were made by IPUMS since the paper was published. We thank Simone Bertoli, Melchior Clerc, Jordan Loper, and Eric Roca Fernandez for pointing these out.

setting that leads to the standard replicator dynamic, which can be used to assess convergence and stability of the equilibria of the model. The discussion draws from Gintis (1997).

Assume that in each generation with some probability $\alpha \in (0,1]$, each player (both traditionalists and non-traditionalists) learns the payoff and type of another randomly-chosen individual. This information arrives at no cost. We assume that players switch to the other type with positive probability if the other type has a higher payoff than their own. The larger the difference in the payoffs, the more likely it is that a switch is made. Specifically, it is assumed that the probability of a traditionalist switching to become a non-traditionalist is given by:

$$\Pr(T \to NT) = \begin{cases} \gamma \left[\Pi^{NT}(x_t) - \Pi^{T}(x_t) \right] & \text{if} \quad \Pi^{NT}(x_t) > \Pi^{T}(x_t) \\ 0 & \text{if} \quad \Pi^{NT}(x_t) \leq \Pi^{T}(x_t), \end{cases} \tag{1}$$

where $\gamma > 0$. Analogously, the probability of a non-traditionalist switching to become a traditionalist is given by:

$$\Pr(NT \to T) = \begin{cases} \gamma \left[\Pi^{T}(x_t) - \Pi^{NT}(x_t) \right] & \text{if} \quad \Pi^{T}(x_t) > \Pi^{NT}(x_t) \\ 0 & \text{if} \quad \Pi^{T}(x_t) \leq \Pi^{NT}(x_t). \end{cases} \tag{2}$$

Using equations (1) and (2), we can characeterize the proportion of traditionalists in the economy in period $t+1$. If the payoff to non-traditionalists is higher than traditionalists, $\Pi^{NT}(x_t) > \Pi^{T}(x_t)$, then the proportion of traditionalists in the population can only decrease. The proportion of traditionalists in period $t+1$ is equal to x_t minus the fraction of the population that is traditionalist x_t, multiplied by the probability of learning about another's payoff α, times the probability that the other person is a non-traditionalist $1 - x_t$, times the expected probability of switching, which is given by (1).

Analogously, if the payoff to traditionalists is higher than non-traditionalists, $\Pi^{NT}(x_t) < \Pi^{T}(x_t)$, then the proportion of traditionalists in period $t+1$ will be x_t plus the fraction of the population that is non-traditionalist $1 - x_t$, multiplied by the probability of their learning about another's payoff α, times the probability that the other person is a traditionalist x_t, times the expected probability of their switching, which is given by (2).

Thus, the share of traditionalists in period $t+1$ is given by:

$$x_{t+1} = \begin{cases} x_t - \alpha\gamma(1 - x_t) \left[\Pi^{NT}(x_t) - \Pi^{T}(x_t) \right] x_t & \text{if} \quad \Pi^{NT}(x_t) > \Pi^{T}(x_t) \\ x_t + \alpha\gamma x_t \left[\Pi^{T}(x_t) - \Pi^{NT}(x_t) \right] (1 - x_t) & \text{if} \quad \Pi^{NT}(x_t) \leq \Pi^{T}(x_t). \end{cases}$$

Rearranging terms gives:

$$\frac{x_{t+1}-x_t}{x_t} = \begin{cases} \alpha\gamma\left\{\Pi^T(x_t) - [x_t\Pi^T(x_t) + (1-x_t)\Pi^{NT}(x_t)]\right\} & \text{if} \quad \Pi^{NT}(x_t) > \Pi^T(x_t) \\ \alpha\gamma\left\{\Pi^T(x_t) - [x_t\Pi^T(x_t) + (1-x_t)\Pi^{NT}(x_t)]\right\} & \text{if} \quad \Pi^{NT}(x_t) \leq \Pi^T(x_t) \end{cases}$$

which then gives the expression for the replicator dynamic:

$$\frac{x_{t+1}-x_t}{x_t} = \alpha\gamma\left\{\Pi^T(x_t) - \overline{\Pi}(x_t)\right\}, \tag{3}$$

where $\overline{\Pi}(x_t) \equiv x_t\Pi^T(x_t) + (1-x_t)\Pi^{NT}(x_t)$ is the average payoff for the whole population.

Thus, a setting where players imperfectly observe the payoffs of other players, which is used when choosing their types, delivers a version of the standard replicator dynamic. Equation (3) tells us that if the payoffs of traditionalists is higher than the average payoff in the population, then the proportion of traditionalists in the population will increase. Conversely, if the payoffs of traditionalists is less than the average payoff in the population, then their proportion will decrease. The speed at which these changes occur is increasing in α, which is the probability that information is revealed to a player in their lifetime, and γ which is the likelihood of switching given the difference in payoffs that is observed.

Using the dynamics of equation (3), it is straightforward to confirm that the equilibria shown in Figure 1 of the paper are stable. Consider the equilibrium x^*. If $x_t > x^*$ then $\Pi^T(x_t) < \Pi^{NT}(x_t)$ and $\frac{x_{t+1}-x_t}{x_t} < 0$. Thus, the proportion of traditionalists will decrease until $x_t = x^*$. Conversely, If $x_t < x^*$ then $\Pi^T(x_t) > \Pi^{NT}(x_t)$ and $\frac{x_{t+1}-x_t}{x_t} > 0$. Thus, the proportion of traditionalists will increase until $x_t = x^*$. Thus, x^* is a stable equilibrium.

For completeness, consider an equilibrium where $x^* = 0$. This occurs if the payoff to traditionalists is lower than non-traditionalists for all values of x. In this case, if $x_t > x^*$ then $\Pi^T(x_t) < \Pi^{NT}(x_t)$ and $\frac{x_{t+1}-x_t}{x_t} < 0$. Thus, the proportion of traditionalists will decrease until $x_t = x^* = 0$. Thus, the $x^* = 0$ equilibrium is also stable.

A3. Data and their sources

A. *Dependent variables*

The individual-level data on respect for tradition are taken from the most recent two waves of the *World Values Survey* (WVS), which is a compilation of national surveys on values and norms on a wide variety of topics. The surveys contain information on different types of attitudes, religions

and preferences, as well as information on standard demographic characteristics, such as sex, age, education, labor market status, and income. We use data from a question [variable A198] that asks about the respondent's view on the importance of maintaining traditions and family customs. For the question, respondents are given the description of a person and then they are asked to report how similar they are to the person. For this measure, the following description was used: "Tradition is important to this person; to follow the family customs handed down by one's religion or family." Respondents then choose the response that best described how similar this person/description was to them: (1) very much like me; (2) like me; (3) somewhat like me; (4) a little like me; (5) not like me; and (6) not at all like me. We recoded the question, so that it is increasing in the value placed on tradition (and ranges from 1 to 6). There have been six waves of the WVS: 1981–1984, 1989–1993, 1994–1998, 1999–2004, 2005–2009 and 2010–2014. Since our variable of interest has been added to the questionnaire only recently, we use only the last two waves.

For the within-country estimates that use the WVS tradition measure as the dependent variable, to match an individual to and ethnicity from the *Ethnographic Atlas* and thus an ancestral climatic instability measure, we use each respondent's mother tongue, as measured by the World Values Survey question asking about the language spoken at home [variable G016].

Measures of female labor force participation, when measured at the country level, is from the World Bank's *World Development Indicators*. The variable is defined in the standard manner: the percentage of women aged 15–64 that are in the labor force. Thus, the measures range from 0–100. Although the data are available annually, our analysis uses measures from 1970 and from 2012.

For the within-country analysis, the measure of female labor force participation is taken from national Censuses, which are obtained from *IPUMS International*. We select all countries that report individual information about ethnicity and for which there is subnational variation in ethnicity. Each of the ethnicities from the Censuses are mapped to an ethnicity in the *Ethnographic Atlas*. For the case of Cambodia and the Philippines, there was no information about ethnicity and the mapping was done using information on the individual's mother tongue. The time periods available vary by country and are as follows: Belarus, 1999, Cambodia: 1998, 2008; Malaysia: 1970, 1980, 1991 and 2000; Nepal, 2001; Philippines, 1990; Sierra Leone, 2004; Uganda, 1991, 2002; Vietnam, 1989, 1999 and 2009.

We measure the prevalence of polygamy today using data from the *OECD Gender, Institutions*

and Development Database. The variable is a country-level indicator that equals one if having more than one spouse is accepted or legal.

We measure the modern prevalence of consanguineous marriage using data taken from Schulz (2017). The variable is the proportion of all marriages in a country that are consanguineous; it ranges from 0 to 100.

Information on marriage among second generation U.S. immigrants is taken from the March Supplement of the *Current Population Survey* (CPS). This source is the only data source for the United States in which individuals are asked (starting from 1994) about their parents' country of birth. We pool data from eighteen years (1994–2014) to obtain the largest possible sample size. Inter-marriage is defined as an indicator variable that equals one if an individual's spouse has the same origin country. The spouse is coded as one if he/she was born in the origin country, or if either the mother or father were born in the origin country.

Information about the language spoken at home is available from the 2000 Census. This Census does not report the country of origin of the parents. Instead, it records individuals' self-reported "ancestry". Our sample includes all individuals who were born in the United States and report a foreign ancestry. Thus, the sample only includes individuals who are second-generation immigrants or later. We define an indicator variable that equals one if a foreign language (i.e. a language other than English) is the primary language spoken at home.

To focus on cases where English might not be spoken at home, we exclude ancestries for which English is an official language and the language of instruction in higher education. This criterion follows the commonly-used definition of whether or not English is an "official language" used by Universities when deciding whether foreign students are required to take English language proficiency exams.[2] We, thus, omit the following ancestral groups from our sample: British, British Isles, English, Irish-various subheads, Celtic, Maltese, Scotch Irish, Scottish, Welsh, Bahamian, Barbadian, Belizean, Trinidadian, Antigua (1990-2000, ACS, PRCS), St. Vincent Islander (1990); Vincent-Grenadine Islander (2000 Census, 2005 ACS, 2005 PRCS), Grenadian, St Lucia Islander, Guyanese/British Guiana, Ghanian, Kenyan, Liberian, Nigerian, Sierra Leonean, South African,

[2]See for example `https://international.globallearning.cornell.edu/host-departments/j-1-language-requirement`; `https://grad.ncsu.edu/students/rules-and-regulations/handbook/english-as-official-language/`; or `https://biology.fau.edu/academics/graduate/countries_w_english_as_official_language.php`.

Australian, New Zealander, Tongan, Fijian, Anglo (1990-2000, ACS, PRCS), and Canadian.[3]

Our analysis of whether Native American ethnic groups speak English or their aboriginal language uses data from all U.S. Census years for the necessary data are available (1930, 1990, and 2000). The Censuses record the name of the tribe with which the person is connected, and asks the following question about language: "Does the person speak a language other than English at home?". Using this information, we calculate the fraction of Native Americans belonging to each ethnic group and living in a particular location that do not speak English at home. At the time of publication of our article, the variable was called [LANGUAGE] in IPUMS.

In September 15, 2021, IPUMS changed the name of the variable from [LANGUAGE] to [MTONGUE] for 1920 and 1930. For full details, see the revision history note for 9/15/21, which can be found at: `https://usa.ipums.org/usa-action/revisions#revision_02_09_2021`. In the process of transitioning the data from the variable LANGUAGE to MTONGUE, IPUMS automatically substituted the value of "n/a" for the LANGUAGE/MTONGUE variable anytime the person was not foreign-born even if this information was recorded by the census enumerator. Thus, speakers of native American languages born in the U.S. are now always recoded as "n/a" for the MTONGUE variable. IPUMS offers the original string response to this question in the restricted use data. The variable is [MTONGSTR].[4] While the unrestricted data do not make this information available (through the MTONGUE variable), the restricted data could be used. The data in our replication code reflects what was publicly available at the time, which was before the adjustments were made by IPUMS.

For the analysis of Native Canadian populations, we use the 2001, 2006, and 2011 rounds of the *Census Aboriginal Population Profiles*, which are available from Statistics Canada. The data include all Indigenous populations that are living on a reserve or a legal land base. Statistics Canada collects information on the proportion of the population who: (*i*) have an Indigenous language as their mother tongue, (*ii*) have an Indigenous language spoken at home; and (*iii*) can conduct a conversation in at least one Indigenous language. Unlike the U.S. Census data, these data are not publicly available at the individual level.

[3]Of note is the fact that while "Canadians" (ancestr1d= 9310) are omitted, French speaking Canadians are not, e.g., "French Canadians" (ancestr1d= 9350) are kept in the sample. This follows directly the definition based on the criterion applied by U.S. Universities: "Canada (except for Quebec)" is deemed as having English as an official language (and language of instruction in higher education).

[4]For details, see https://usa.ipums.org/usa-action/variables/MTONGSTR#description_section.

B. *Historical control variables*

Historical economic development: the measure comes from variable $v30$ of the *Ethnographic Atlas*. Each ethnic group is categorized into one of the following categories describing their pattern of settlement: (1) nomadic or fully migratory, (2) semi-nomadic, (3) semi-sedentary, (4) compact but temporary settlements, (5) neighborhoods of dispersed family homes, (6) separated hamlets forming a single community, (7) compact and relatively permanent, (8) complex settlements. The variable takes on the listed values of 1 to 8, with 1 indicating fully nomadic groups and 8 groups with complex settlement.

Political hierarchies: we use the number of jurisdictional hierarchies beyond the local community to quantify the pre-industrial political sophistication of an ethnic group. The original measure, taken from variable $v33$ of the Ethnographic Atlas, takes on the values of 1 to 5, with 1 indicating no levels of hierarchy beyond the local community and 5 indicating four levels. Since the local community represents one level of authority, we interpret the variable as measuring the total number of jurisdictional hierarchies in the society.

Year in which the ethnicity was sampled: we construct a measure indicating the average date of observation of ancestors in the Ethnographic Atlas in a country. This information is taken using the variable $v102$ of the *Ethnographic Atlas*. This variable indicates the year in which the ethnicity was sampled.

Historical latitude: we construct a measure indicating the average historical distance from the equator of ancestors in a given country. This information is taken using the variable $v104$ of the Ethnographic Atlas, which reports the latitude of the centroid of each ethnic group. We use the absolute value of the measure, which is the distance from the equator measured in decimal degrees.

C. *Historical cultural characteristics*

Historical female participation in agriculture: we measure traditional female participation during the pre-industrial period using variable $v54$ from the *Ethnographic Atlas*. Ethnicities are categorized into one of the following five categories that measure the extent of female participation in pre-industrial agriculture: (1) males only, (2) males appreciably more, (3) equal participation, (4) female appreciably more, and (5) female only. The original classification in the *Ethnographic*

Atlas distinguishes "differentiated but equal participation" from "equal participation". Since this distinction is not relevant for our purposes, we combine the two categories into a single category of "equal participation". For 232 ethnic groups, agriculture was not practiced and therefore there is no measure of female participation in agriculture. For an additional 315 ethnic groups, information for the variable is missing. These ethnic groups (547 in total) are omitted when constructing the country-level measure. To make the historical FLFP variable (which ranges from 1 to 5) comparable with the contemporary measure of FLFP, we normalize it so that the range of possible values is from 0–100.

Historical polygamy: we measure the traditional presence of polygamy using variable *v*9 from the Ethnographic Atlas. The original coding in the *Ethnographic Atlas* uses the following classification for marital practices: (1) independent nuclear monogamous, (2) polygyny, (3) preferential sororal living in the same dwelling, (4) preferential sororal living in a separate dwelling, (5) non-sororal living in separate dwelling, (6) non-sororal living in the same dwelling, (7) polyandry. Using this information, we create an indicator variable that equals one if an ethnic group is coded as belonging to category 2 or 7.

Historical consanguineous marriage: we measure the traditional presence of polygamy using variable *v*25 from the Ethnographic Atlas. The original coding in the *Ethnographic Atlas* has 14 categories for different types of cousin marriage preference when cousin marriages are preferred to non-cousin marriage. The fifteenth category is for "No preferred cousin marriages". From variable *v*25, we create an indicator variable that equals zero if the ethnicity has "No preferred cousin marriages" and one if it has a preferred cousin marriage of any type.

D. *Contemporary control variables*

Natural log of real per capita GDP: the measure of the log of the per-capita GDP is taken from the World Bank's *World Development Indicators* and is measured in 2012.

Educational attainment: we measure educational attainment as the average years of schooling in a country among the population aged 15–64. The data are taken from Barro and Lee (2013). To fill in missing observations, we use data from Cohen and Soto (2007) if they are available.

E. ***Additional dependent variables (for robustness checks)***

We obtain the seven cultural value orientations from Schwartz (2010). For further details also see Schwartz (1994) and Schwartz (2006).

The several cultural value orientations are: Intellectual Autonomy (being independent), Affective Autonomy (pursuing positive affective experiences), Mastery (encouraging self-assertion), Hierarchy (unequal distribution of power), Embeddedness (being part of a collective), Harmony (being at ease with the world), Egalitarianism (being concerned for others).

We obtained the Hofstede measures from Hofstede (1991) and Hofstede, Hofstede and Minkov (2010). The measures are:

Power Distance index (PDI): The power distance index is defined as the "extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally."

Individualism vs. collectivism (IDV): This index explores the "degree to which people in a society are integrated into groups." Individualistic societies have loose ties that often only relate an individual to his/her immediate family. They emphasize the "I" versus the "We." Its counterpart, collectivism, describes a society in which tightly-integrated relationships tie extended families and others into in-groups.

Uncertainty avoidance (UAI): the uncertainty avoidance index is defined as "a society's tolerance for ambiguity," in which people embrace or avert an event of something unexpected, unknown, or away from the status quo.

Masculinity vs. femininity (MAS): In this dimension, masculinity is defined as "a preference in society for achievement, heroism, assertiveness and material rewards for success." Its counterpart represents "a preference for cooperation, modesty, caring for the weak and quality of life."

Long-term orientation vs. short-term orientation (LTO): This dimensions refers to the cultural value that "stands for the fostering of virtues oriented toward future rewards, perseverance, and thrift."

Indulgence vs. restraint (IND): Indulgence is defined as "a society that allows relatively free gratification of basic and natural human desires related to enjoying life and having fun." Its counterpart is defined as "a society that controls gratification of needs and regulates it by means of strict social norms."

F. ***Additional country-level covariates (for robustness checks)***

Ruggedness: Terrain ruggedness is measured using the terrain ruggedness index from Nunn and Puga (2012).

Distance from the coast: The distance from the centroid of each country to the nearest ice-free coastline is taken from Nunn and Puga (2012).

Ethic fractionalization: The ethnic diversity measure is taken from Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg (2003).

Genetic diversity: Genetic diversity is taken from Ashraf and Galor (2013).

Trust: Data on generalized trust are taken from the *World Values Survey* [variable A165]. The measure is based on the following survey questions: "Generally speaking, would you say that most people can be trust or that you can't be too careful in dealing with people?" Respondents chose on the following answers: "most people can be trusted" or "cannot be too careful." We use this information to code and indicator variable that equals 1 if the respondent answers that "most people can be trusted" and 0 if he/she answers "cannot be too careful."

A4. Summary of the Education Estimates

In the individual-level regressions, we always control for an individual's level of educational attainment. The estimates show that higher levels of education tend to be associated with lower persistence of tradition. Since we did not report the estimates for the covariates of the regressions in the tables of the paper, we provide a summary of the estimated relationship between education and tradition here.

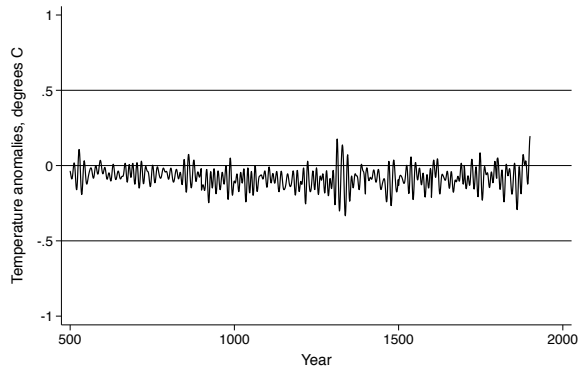
The estimates are summarized in Table A34. Since the various tests of the paper uses different data sources and each has its own education categories, in reporting the estimates here, we aggregate the education fixed effects into two categories that are the same across all specification: (1) high school completed, (2) some college or more. The excluded category is for individuals with less than high school.[5]

From the estimates, it is clear that educational attainment is found to be negatively correlated

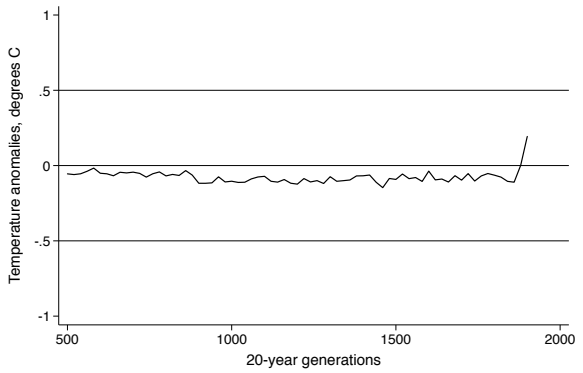
[5]For the estimates reported in column 7, the sample only includes the 1990 and 2000 Censuses since the only education question in the 1930 Census is a yes/no question about literacy. The estimates reported in the paper includes all three Census years and controls for a literacy indicator. If we instead restrict our sample to 1990 and 2000 and control for the finer education category fixed effects, our results of interest (i.e., the correlation between ancestral climatic instability and speaking an Indigenous language at home) are nearly identical. The coefficient for ancestral climatic instability is -1.091*** rather than -1.097*** and the standard error is 0.350 rather than 0.358.

with the importance placed on tradition and cultural persistence. While there are many interpretations for this relationship, they are consistent with the model's prediction about the effects of κ in the model if one assumes that education is associated with a lower κ.

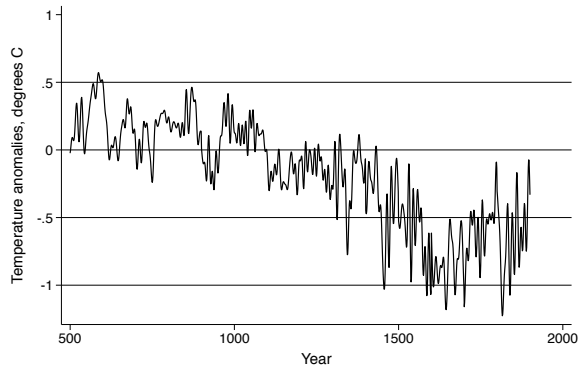
A5. Appendix Figures



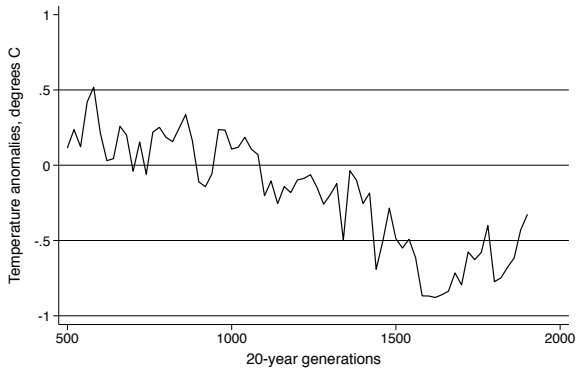
(a) Central Africa: Annual temperature anomaly



(b) Central Africa: Generational average temperature anomaly

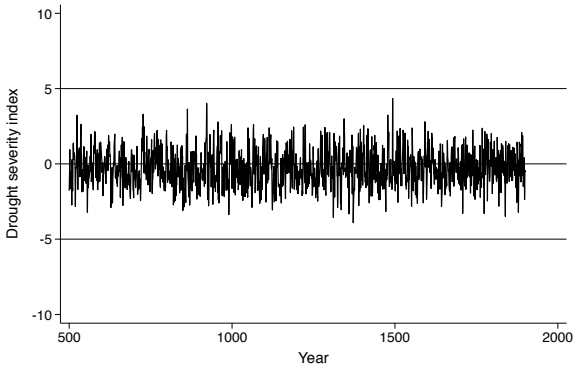


(c) Southern Sweden: Annual temperature anomaly

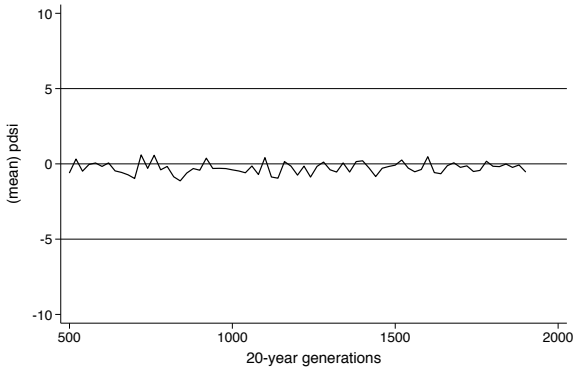


(d) Southern Sweden: Generational average temperature anomaly

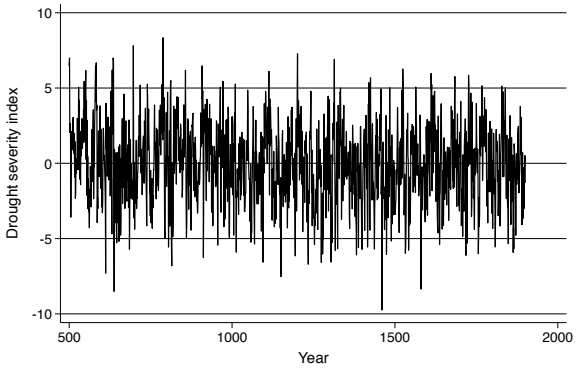
Figure A1: Mann et al. temperature anomaly for Central Africa and Southern Sweden



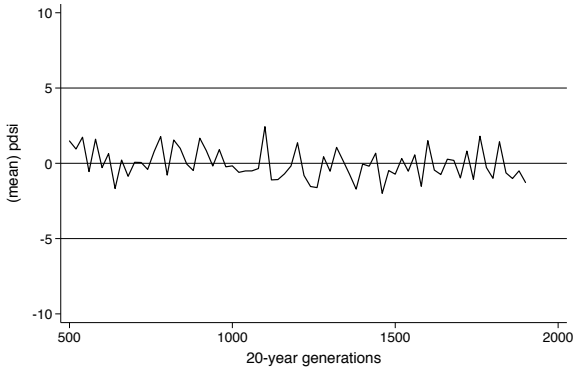
(a) Cherokee: Annual PDSI



(b) Cherokee: Generational average PDSI



(c) Crow: Annual PDSI



(d) Crow: Generational average PDSI

Figure A2: Cook et al. drought severity index for the Cherokee and Crow

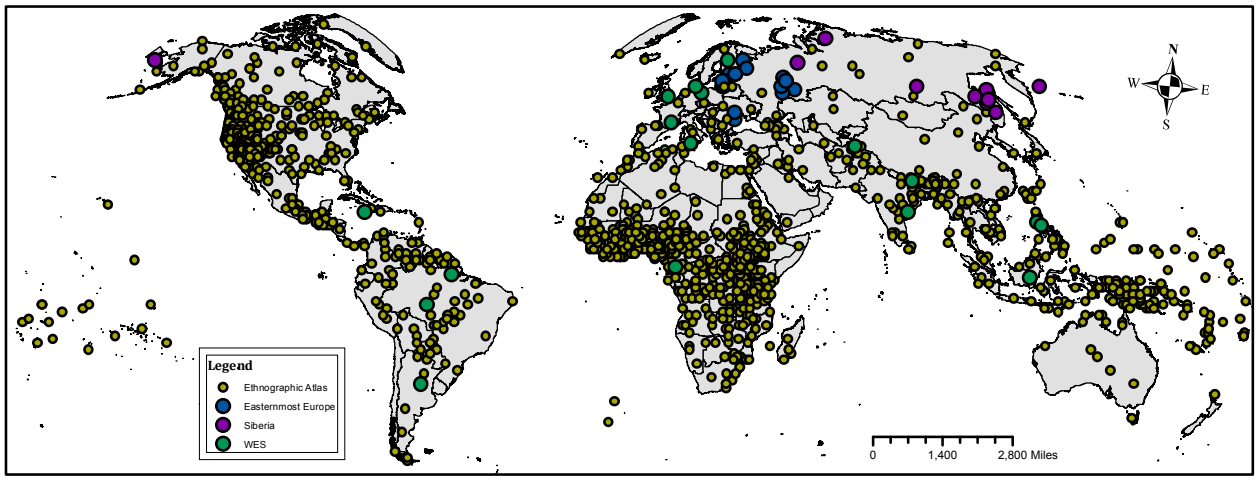


Figure A3: Locations of the centroids of ethnic groups in the *Ethnographic Atlas*, *Peoples of Easternmost Europe*, *Peoples of Siberia*, and *World Ethnographic Sample (WES)*.

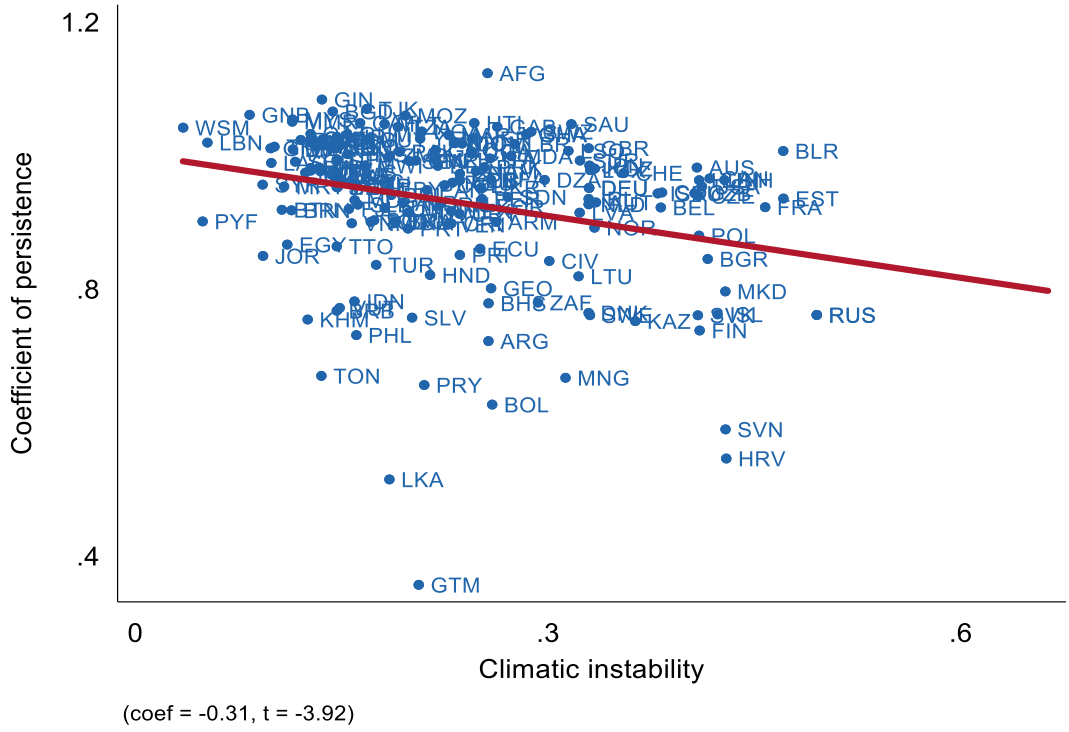


Figure A4: Bivariate plot: Annual persistence of FLFP from 1960-2018 and ancestral climatic instability

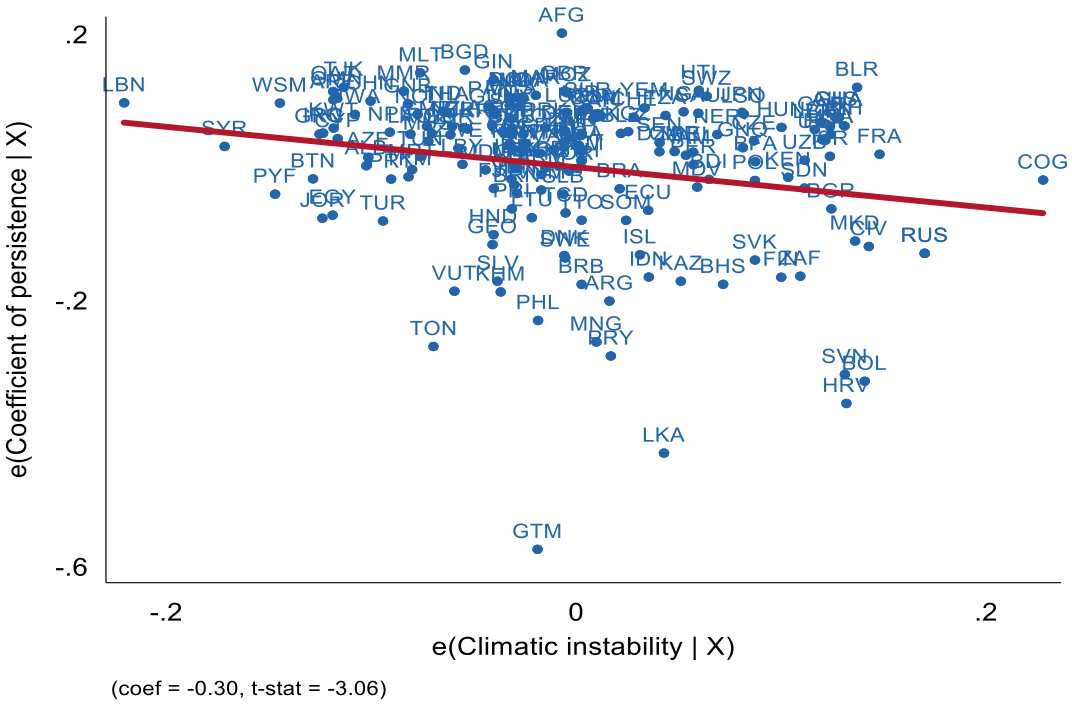


Figure A5: Partial correlation plot: Annual persistence of FLFP from 1960-2018 and ancestral climatic instability from column 3 of Table A16

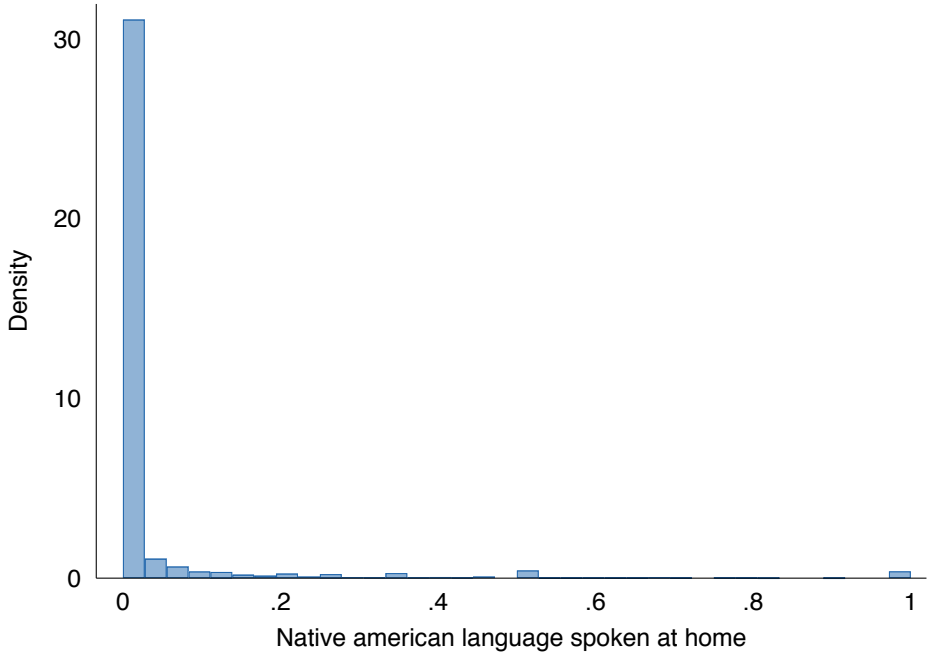


Figure A6: Native language spoken at home. U.S. Indigenous populations

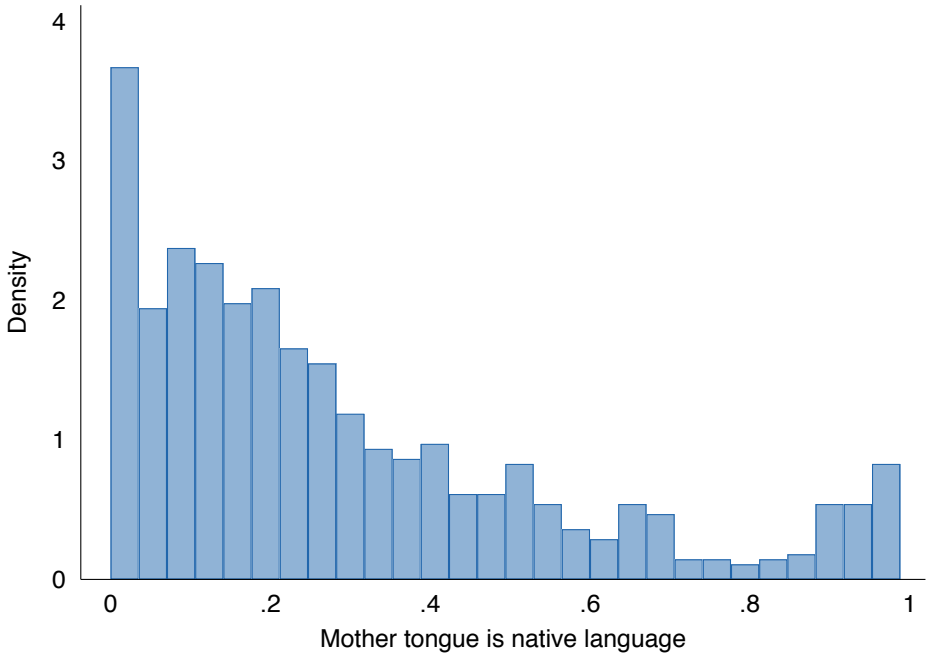


Figure A7: Mother tongue is an Indigenous language. Canadian Indigenous populations

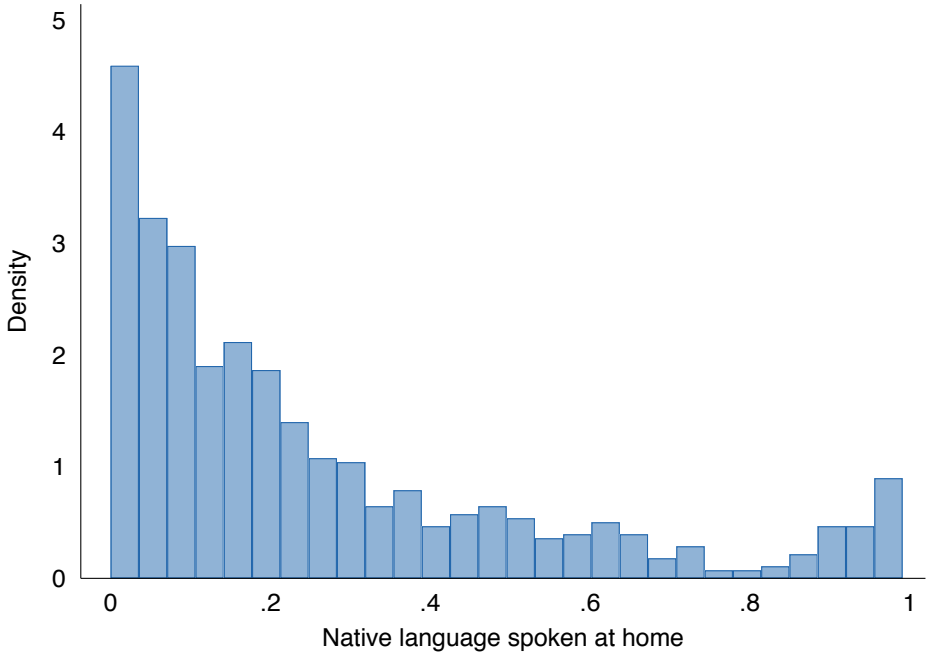


Figure A8: Indigenous language spoken at home. Canadian Indigenous populations

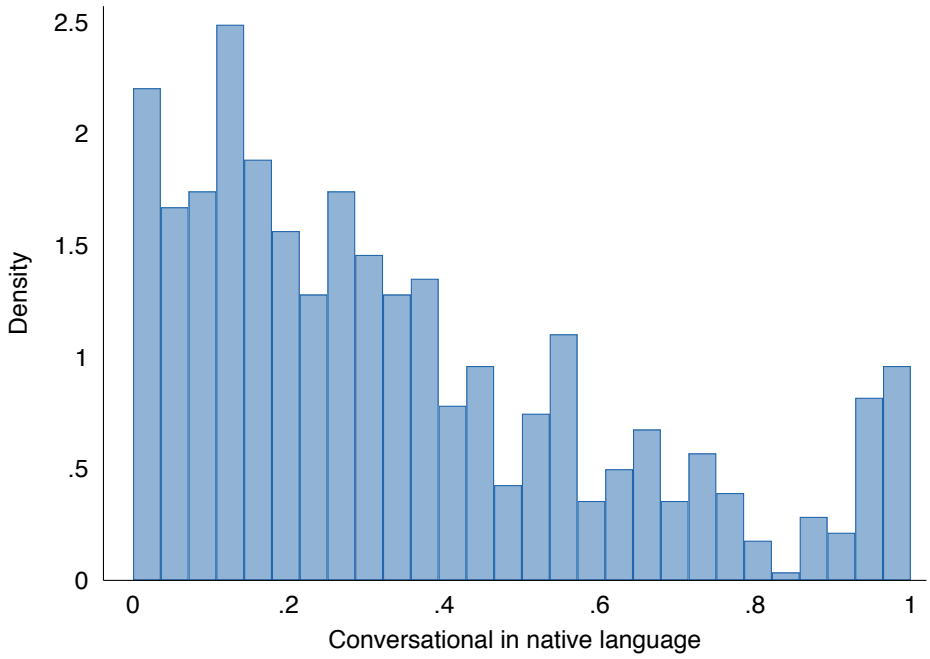


Figure A9: Conversational in Indigenous language. Canadian Indigenous populations

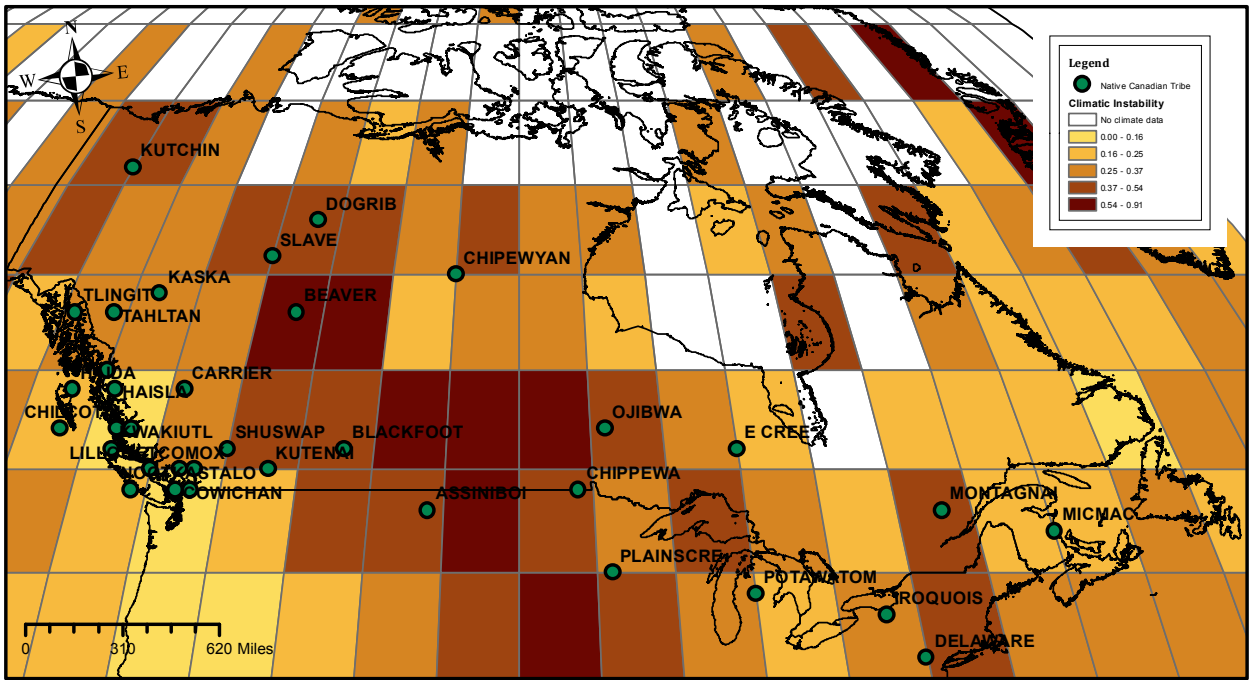


Figure A10: Ancestral climatic instability (using Mann et al. (2009)) and the location of Native Canadian populations in the *Ethnographic Atlas* and in the *Canadian Aboriginal Census*.

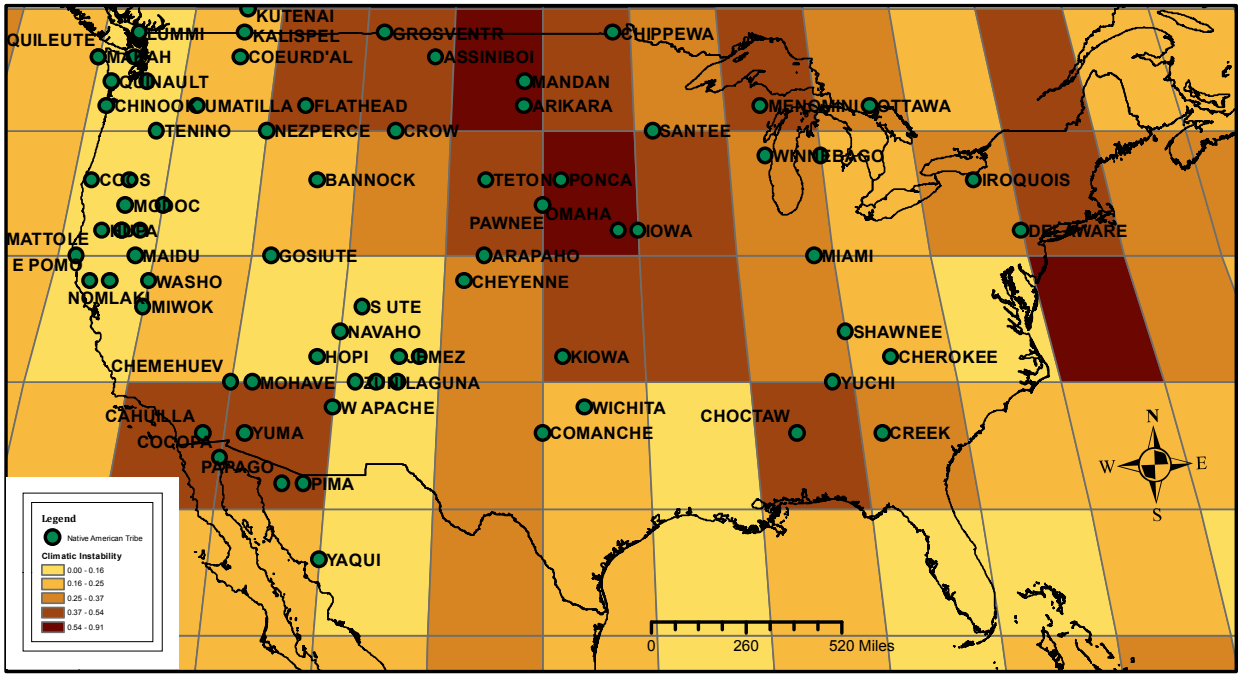


Figure A11: Ancestral climatic instability (using Mann et al. (2009)) and the location of Native American populations in the *Ethnographic Atlas* and in the U.S. Census

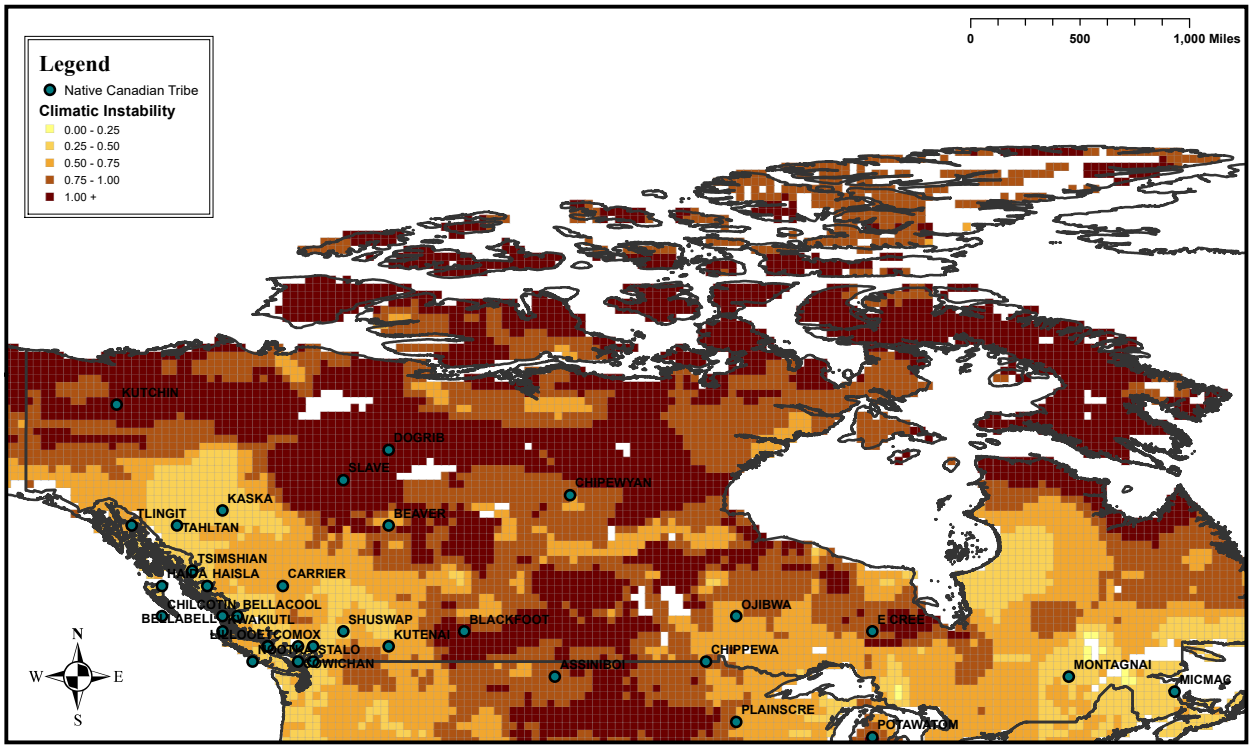


Figure A12: Ancestral climatic instability (using Cook et al. (2010) / PDSI) and the location of Native Canadian populations in the *Ethnographic Atlas* and in the *Canadian Aboriginal Census*.

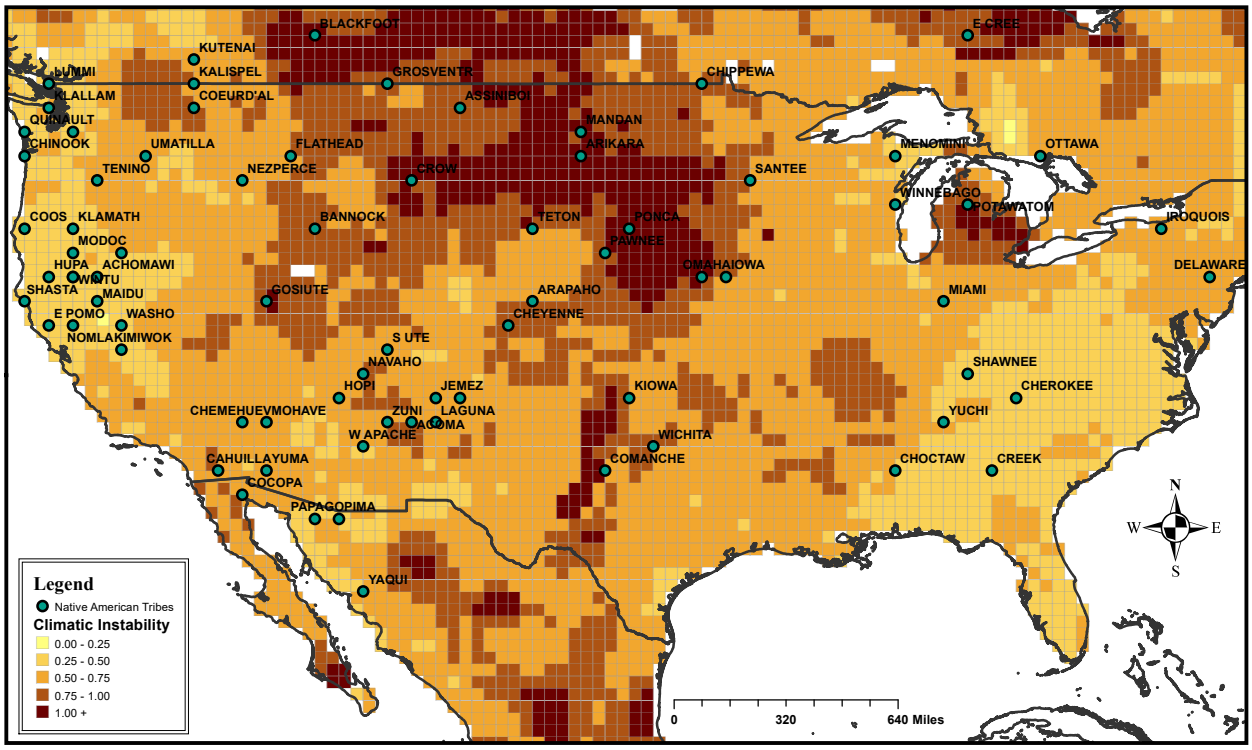


Figure A13: Ancestral climatic instability (using Cook et al. (2010) / PDSI) and the location of Native American populations in the *Ethnographic Atlas* and in the U.S. Census

A6. Appendix Tables

Table A1: Descriptive statistics, part 1

Variable	Obs.	Mean	St. Dev.
World Values Survey, Country level sample			
Importance of tradition, 1-6	75	4.521	0.549
Original EA sample			
Climatic instability	75	0.252	0.108
Log change in temp., 1901-2000	`	0.239	0.116
Distance from equator	74	32.814	14.309
Economic complexity	74	6.496	1.353
Political hierarchies	74	3.844	0.650
With Eastern Europe and Siberia extension			
Climatic instability	75	0.252	0.110
Log change in temperature, 1901-2000	75	0.239	0.116
Climatic instability 700-1900	74	0.232	0.098
Climatic instability 900-1900	74	0.198	0.086
Climatic instability 1100-1900	74	0.161	0.066
Climatic instability 1300-1900	74	0.159	0.062
Climatic instability 1500-1900	74	0.113	0.042
Climatic instability 1700-1900	74	0.114	0.042
Distance from equator	74	33.017	14.579
Economic complexity	74	6.471	1.363
Political hierarchies	74	3.872	0.678
Ruggedness	74	1.102	0.840
Distance from the coast	74	0.329	0.344
Ethnici fractionalization	73	0.411	0.238
Genetic diversity	73	0.709	0.052
Trust	74	0.268	0.146
Also with the World Ethnographic Sample extension			
Climatic instability	75	0.253	0.113
Log change in temp., 1901-2000	75	0.239	0.116
Distance from equator	74	33.383	14.957
Economic complexity	74	6.478	1.417
Political hierarchies	74	3.900	0.628
Ln(per capita GDP)	74	8.499	1.492
World Values Survey, individual level sample			
Importance of tradition, 1-6	112,179	4.470	1.408
Baseline			
Climatic instability	112,179	0.274	0.119
Distance from equator	112,179	36.152	13.984
Economic complexity	112,179	6.673	1.384
Political hierarchies	112,179	4.042	0.768
With Eastern Europe and Siberia extension			
Climatic instability	112,174	0.268	0.120
Distance from equator	112,174	36.187	14.028
Economic complexity	112,174	6.659	1.387
Political hierarchies	112,174	4.052	0.774

Variable	Obs.	Mean	St. Dev.
World Values Survey, Individual level sample			
Also with the World Ethnographic Sample extension			
Climatic instability	111,242	0.267	0.120
Distance from equator	111,242	36.199	14.101
Economic complexity	111,242	6.658	1.442
Political hierarchies	111,242	4.073	0.748
Cross-country, interactions regressions			
FLFP 2012	165	53.158	15.388
Traditional female partic. in agriculture	165	33.524	20.231
Climatic instability	165	0.236	0.103
Log(per capita GDP)	165	9.167	1.218
Distance from the equator	165	27.437	16.851
Economic complexity	165	6.430	1.332
Political hierarchies	165	3.489	0.907
Year ethnicity sampled	165	1.775	0.677
Polygamy	109	0.440	0.407
Traditional polygamy	109	0.702	0.409
Consanguineous marriage	60	12.775	16.396
Traditional consanguineous marriage	60	31.204	43.151
FLFP 1970	77	32.614	17.683
Within-countries, interactions regressions			
FLFP	211	0.548	0.224
Traditional female partic. in agriculture	211	0.392	0.238
Climatic instability	211	0.191	0.101
Distance from the equator	211	19.834	15.139
Economic complexity	211	6.351	1.509
Political hierarchies	211	3.199	1.447
Year ethnicity sampled	211	1.921	0.190
Women marrying men from the same country, CPS 1994-2014			
Father's side			
Same country marriage	36,082	0.328	0.469
Climatic instability	36,082	0.287	0.089
Distance from the equator	36,082	40.163	10.268
Economic complexity	36,082	7.142	0.462
Political hierarchies	36,082	3.927	0.507
Ln (per capita GDP)	36,082	9.940	0.660
Genetic distance from the US	36,082	0.476	0.577
Fraction of 1st and 2nd gen. immigrants from same country of origin	36,082	0.034	0.058

Table A2: Descriptive statistics, part 2

Variable	Obs.	Mean	St. Dev.
Women marrying men from the same country, CPS 1994-2014			
Mother's side			
Same country marriage	34,045	0.317	0.465
Climatic instability	34,045	0.291	0.088
Distance from the equator	34,045	40.433	10.249
Economic complexity	34,045	7.147	0.423
Political hierarchies	34,045	3.927	0.498
Ln (per capita GDP)	34,045	9.968	0.652
Genetic distance from the US	34,045	0.472	0.578
Fraction of first and second gen. immigrants from same country of origin	34,045	0.032	0.056
Men marrying women from the same country, CPS 1994-2014			
Father's side			
Same country marriage	38,419	0.281	0.449
Climatic instability	38,419	0.294	0.090
Distance from the equator	38,419	41.113	10.124
Economic complexity	38,419	7.170	0.460
Political hierarchies	38,419	3.947	0.500
Ln (per capita GDP)	38,419	9.985	0.649
Genetic distance from the US	38,419	0.430	0.563
Fraction of first and second gen. immigrants from same country of origin	38,419	0.031	0.056
Mother's side			
Same country marriage	35,639	0.287	0.452
Climatic instability	35,639	0.298	0.089
Distance from the equator	35,639	41.348	10.037
Economic complexity	35,639	7.175	0.433
Political hierarchies	35,639	3.947	0.484
Ln (per capita GDP)	35,639	10.015	0.636
Genetic distance from the US	35,639	0.423	0.563
Fraction of first and second gen. immigrants from same country of origin	35,639	0.029	0.054
Speaking a foreign language at home, 2000 Census			
Same country marriage	3,343,097	0.124	0.330
Climatic instability	3,343,097	0.324	0.072
Distance from the equator	3,343,097	47.485	7.426
Economic complexity	3,343,097	7.142	0.394
Political hierarchies	3,343,097	3.995	0.261
Ln (per capita GDP)	3,343,097	10.014	0.837
Linguistic distance from the US	3,343,097	2.244	2.236
Fraction of first and second gen. immigrants from same country of origin	3,343,097	0.089	0.094
Father speaking a foreign language	330,226	0.264	0.441
Mother speaking a foreign language	400,062	0.276	0.447
Persistence of education and occupation, birth cohort			
Sons' education	468	6.451	1.216
Fathers' education	468	5.056	1.780
Sons' occupation score	439	49.805	8.232
Fathers' occupation score	439	44.652	8.875
Climatic instability	468	0.245	0.103
Distance from the equator	468	31.714	15.591
Economic complexity	468	6.843	0.666
Political hierarchies	468	3.790	0.663

Variable	Obs.	Mean	St. Dev.
Persistence of education and occupation, birth cohort and state			
Sons' education	2,704	6.255	1.763
Fathers' education	2,704	4.846	2.532
Sons' occupation score	2,421	48.820	11.765
Fathers' occupation score	2,421	44.584	12.855
Climatic instability	2,704	0.252	0.097
Distance from the equator	2,704	35.049	13.419
Economic complexity	2,704	6.971	0.444
Political hierarchies	2,704	3.871	0.637
Traditional language spoken by Indigenous population in the United States			
Indigenous language spoken at home	128,005	0.182	0.386
Climatic instability	128,005	0.270	0.108
Climatic instability (PDSI)	127,986	0.584	0.206
Annual standard deviation (PDSI)	127,986	1.891	0.534
Climatic instability of annual SD (PDSI)	127,986	0.346	0.117
Distance from the equator	128,005	38.666	6.158
Economic complexity	128,005	4.683	2.188
Political hierarchies	128,005	1.904	0.930
Father speaks an indigenous language at home	25,794	0.365	0.482
Mother speaks an indigenous language at home	35,403	0.344	0.475
Trad. lang. spoken by Indigenous pop. in the US, Canada, and pooled regressions			
United States			
Indigenous language spoken at home	3,564	0.039	0.144
Climatic instability	3,564	0.296	0.106
Climatic instability (PDSI)	3,420	0.663	0.258
Annual standard deviation (PDSI)	3,420	1.992	0.487
Climatic instability of annual SD (PDSI)	3,420	0.386	0.123
Distance from the equator	3,564	40.086	7.429
Economic complexity	3,564	4.295	2.385
Political hierarchies	3,564	1.803	0.869
Canada			
Indigenous language is mother tongue	546	0.288	0.252
Indigenous language spoken at home	546	0.253	0.256
Conversational in Indigenous language	546	0.340	0.261
Climatic instability	546	0.357	0.121
Climatic instability (PDSI)	411	0.662	0.205
Annual standard deviation (PDSI)	411	1.903	0.359
Climatic instability of annual SD (PDSI)	411	0.393	0.091
Distance from the equator	546	51.172	4.953
Economic complexity	546	2.132	1.030
Political hierarchies	546	1.484	0.504
United States and Canada			
Indigenous language spoken at home	4,110	0.067	0.178
Climatic instability	4,110	0.304	0.110
Climatic instability (PDSI)	3,831	0.663	0.253
Annual standard deviation (PDSI)	3,831	1.983	0.475
Climatic instability of annual SD (PDSI)	3,831	0.386	0.12
Distance from the equator	4,110	41.559	8.079
Economic complexity	4,110	4.008	2.367
Political hierarchies	4,110	1.760	0.837

Table A3: Importance of tradition using the World Values Survey and robustness to using different climate windows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Importance of tradition, 1-6						
	Initial year of the time range for which climatic instability is calculated (final year is 1900):						
	500 (baseline)	700	900	1100	1300	1500	1700
Climatic instability	**-1.824****	**-1.864****	**-1.576***	**-2.639****	**-3.147*****	**-2.699**	**-2.713****
	(0.696)	**(0.789)**	**(0.857)**	**(1.138)**	**(1.165)**	**(1.673)**	**(1.334)**
Historical controls:							
Distance from equator	0.005	0.004	0.001	0.003	0.004	0.001	0.000
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Economic complexity	-0.069*	-0.061	-0.058	-0.063*	-0.075**	-0.061	-0.063*
	(0.035)	(0.037)	(0.039)	(0.037)	(0.035)	(0.039)	(0.036)
Political hierarchies	0.025	0.003	0.000	-0.006	-0.006	0.007	0.013
	(0.099)	(0.098)	(0.098)	(0.092)	(0.087)	(0.092)	(0.090)
Contemporary controls:							
Ln (per-capita GDP)	-0.164***	-0.165***	-0.165***	-0.168***	-0.172***	-0.169***	-0.162***
	(0.048)	(0.049)	(0.049)	(0.047)	(0.046)	(0.050)	(0.052)
Mean (st. dev.) of dep var	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)
Observations	74	74	74	74	74	74	74
R-squared	0.388	0.377	0.359	0.383	0.402	0.343	0.346

Notes : The unit of observation is a country. The dependent variable is the country-level average of the self-reported importance of tradition. The mean (and standard deviation) of Climatic instability is 0.25 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A4: Importance of tradition using the World Values Survey and robustness to using 20th-century climate data

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Importance of tradition, 1-6					
	Ancestral characteristics measures					
	Original EA		With Eastern Europe & Siberia extensions		Also with the World Ethnographic Sample extension	
Climatic Instability:	**-1.614*** **	**-1.446*** **	**-1.609*** **	**-1.415*** **	**-1.770*** **	**-1.555*** **
Log change in temp, 1901-2000	**(0.544)**	**(0.495)**	**(0.548)**	**(0.504)**	**(0.546)**	**(0.522)**
Historical controls:						
Distance from equator		-0.001		-0.001		-0.001
		(0.004)		(0.004)		(0.004)
Economic complexity		-0.102***		-0.095***		-0.097***
		(0.032)		(0.033)		(0.032)
Political hierarchies		0.047		0.030		0.044
		(0.089)		(0.088)		(0.101)
Contemporary controls:						
Ln (per-capita GDP)		-0.127**		-0.128**		-0.117**
		(0.052)		(0.052)		(0.055)
Mean (st. dev.) of dep var	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)
Standardized `beta coeff'	-0.343	-0.307	-0.341	-0.299	-0.374	-0.329
Observations	76	75	76	75	76	75
R-squared	0.118	0.365	0.116	0.358	0.140	0.367

Notes : The unit of observation is a country. The dependent variable is the country-level average of the self-reported importance of tradition. The Climatic instability measure used is the natural log of temperature in 2000 minus the natural log of temperature in 1901 (multiplied by 100), with temperatures measured in degrees Celsius. The mean (and standard deviation) of the variable is 0.24 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A5: Importance of tradition using the World Values Survey and robustness to using 20th-century climate data

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Importance of tradition, 1-6					
	Ancestral characteristics measures					
	Original EA		With Eastern Europe & Siberia extensions		Also with the World Ethnographic Sample extension	
Climatic Instability:	**-0.543*** **	**-0.485*** **	**-0.540*** **	**-0.474*** **	**-0.598*** **	**-0.521*** **
Change in temperature, 1901-2000	**(0.194)**	**(0.174)**	**(0.195)**	**(0.177)**	**(0.195)**	**(0.183)**
Historical controls:						
Distance from equator		-0.002		-0.002		-0.001
		(0.004)		(0.004)		(0.004)
Economic complexity		-0.100***		-0.093***		-0.096***
		(0.033)		(0.033)		(0.032)
Political hierarchies		0.047		0.029		0.043
		(0.089)		(0.088)		(0.101)
Contemporary controls:						
Ln (per-capita GDP)		-0.128**		-0.129**		-0.119**
		(0.052)		(0.053)		(0.055)
Mean (st. dev.) of dep var	4.51 (0.55)	4.51 (0.55)	4.51 (0.55)	4.51 (0.55)	4.51 (0.55)	4.51 (0.55)
Observations	76	75	76	75	76	75
R-squared	0.108	0.359	0.106	0.352	0.129	0.361

Notes : The unit of observation is a country. The dependent variable is the country-level average of the self-reported importance of tradition. The Climatic instability measure used is the change in average temperature between 2000 and 1901 i.e., temperature in 2000 minus temperature in 1901, measured in degrees Celsius. The mean (and standard deviation) of the variable is 0.69 (0.33). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A6: Importance of tradition using the World Values Survey and excluding North and South America, Australia, New Zealand, and South Africa

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable: Importance of Tradition, 1-6					
	Ancestral Characteristics Measures					
	Original EA		With Eastern Europe & Siberia Extension		Also with the World Ethnographic Sample Extension	
Climatic instability	**-1.836*** **	**-2.035** **	**-1.819*** **	**-2.074** **	**-1.733*** **	**-1.983** **
	(0.582)	**(0.790)**	**(0.562)**	**(0.783)**	**(0.524)**	**(0.750)**
Historical controls:						
Distance from equator		0.008		0.008		0.008
		(0.006)		(0.006)		(0.006)
Economic complexity		-0.065*		-0.061		-0.059*
		(0.037)		(0.037)		(0.035)
Political hierarchies		-0.031		-0.040		-0.046
		(0.109)		(0.106)		(0.121)
Contemporary controls:						
Ln (per capita GDP)		-0.162***		-0.164***		-0.164***
		(0.051)		(0.051)		(0.053)
Mean (st. dev.) of dep var	4.56 (0.57)	4.56 (0.57)	4.56 (0.57)	4.56 (0.57)	4.56 (0.57)	4.56 (0.57)
Observations	63	62	63	62	63	62
R-squared	0.132	0.369	0.134	0.369	0.130	0.363

Notes: The unit of observation is a country. The dependent variable is the average at the country level of a measure of the self-reported importance of tradition. The mean and st. dev. of Climatic instability is 0.25 (0.11) *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A7: Importance of tradition using the World Values Survey, dropping countries with more than 25 percent nomadic population

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable: Importance of Tradition, 1-6					
	Ancestral Characteristics Measures					
	Original EA		With Eastern Europe & Siberia Extension		Also with the World Ethnographic Sample Extension	
Climatic instability	**-1.927*** **	**-1.827** **	**-1.899*** **	**-1.866** **	**-1.812*** **	**-1.790** **
	(0.546)	**(0.715)**	**(0.527)**	**(0.715)**	**(0.497)**	**(0.687)**
Historical controls:						
Distance from equator		0.005		0.006		0.006
		(0.005)		(0.005)		(0.005)
Economic complexity		-0.062		-0.056		-0.055
		(0.048)		(0.047)		-0.043
Political hierarchies		0.021		0.009		0.010
		(0.101)		(0.099)		(0.112)
Contemporary controls:						
Ln (per capita GDP)		-0.166***		-0.168***		-0.167***
		(0.048)		(0.049)		(0.051)
Mean (st. dev.) of dep var	4.50 (0.55)	4.50 (0.55)	4.50 (0.55)	4.50 (0.55)	4.50 (0.55)	4.50 (0.55)
Observations	73	72	73	72	73	72
R-squared	0.146	0.371	0.147	0.370	0.142	0.366

Notes : The unit of observation is a country. The dependent variable is the average at the country level of a measure of the self-reported importance of tradition. The mean and st. dev. of Climatic Instability is 0.26 (0.11). The countries whose nomadic population is higher or equal to 25% are Algeria and Azerbaijan. *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A8: Importance of tradition using the World Values Survey, dropping countries with more than 25 percent nomadic or semi-nomadic population

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable: Importance of Tradition, 1-6					
	Ancestral Characteristics Measures					
	Original EA		With Eastern Europe & Siberia Extension		Also with the World Ethnographic Sample Extension	
Climatic instability	**-1.989*** **	**-1.788** **	**-1.956*** **	**-1.824** **	**-1.851*** **	**-1.708** **
	(0.537)	**(0.757)**	**(0.518)**	**(0.744)**	**(0.490)**	**(0.711)**
Historical controls:						
Distance from equator		0.006		0.006		0.006
		(0.005)		(0.006)		(0.005)
Economic complexity		-0.006		0.011		-0.019
		(0.138)		(0.106)		(0.092)
Political hierarchies		0.031		0.020		0.017
		(0.099)		(0.098)		(0.112)
Contemporary controls:						
Ln (per capita GDP)		-0.176***		-0.178***		-0.174***
		(0.050)		(0.050)		(0.053)
Mean (st. dev.) of dep var	4.47 (0.54)	4.47 (0.54)	4.47 (0.54)	4.47 (0.54)	4.47 (0.54)	4.47 (0.54)
Observations	68	67	68	67	67	66
R-squared	0.161	0.350	0.161	0.351	0.153	0.345

Notes : The unit of observation is a country. The dependent variable is the average at the country level of a measure of the self-reported importance of tradition. The mean and st. dev. of Climatic Instability is 0.25 (0.11). The countries was nomadic or seminomadic population is equal or higher than 25% are Algeria, Azerbaijan, Egypt, Kazakhstan, Kyrgyzstan, Libya and Uzbekistan. *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A9: Alternative cultural and psychological traits as outcomes: Hofstede measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Depedent variable:						
	Tradition	Long-term Orientation	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Indulgence / restraint
Climatic instability	**-1.824** **	**0.368**	**24.172**	**40.822**	**5.167**	**8.469**	**7.179**
	(0.696)	**(0.248)**	**(39.266)**	**(32.155)**	**(32.632)**	**(48.971)**	**(24.533)**
Historical controls:							
Distance from equator	0.005	0.003	-0.442	0.633***	-0.032	0.313	-0.553***
	(0.005)	(0.003)	(0.283)	(0.203)	(0.261)	(0.378)	(0.205)
Economic complexity	-0.065*	-0.008	0.328	0.046	9.106**	5.469	2.241
	(0.035)	(0.018)	(3.830)	(4.101)	(4.377)	(3.614)	(1.441)
Political hierarchies	0.013	0.114***	-0.726	-3.336	-2.831	3.494	-5.947**
	(0.097)	(0.039)	(4.059)	(3.660)	(3.507)	(3.531)	(2.601)
Contemporary controls:							
Ln (per capita GDP)	-0.165***	-0.003	-7.451***	4.911**	-1.352	-1.951	8.470***
	(0.049)	(0.020)	(1.940)	(1.873)	(2.319)	(2.907)	(1.802)
Mean (st. dev.) of dep variable	4.52 (0.55)	0.46 (0.24)	57.5 (21.1)	46 (23.4)	48.6 (20.2)	66.6 (22.8)	46.3 (22.6)
Standardized `beta' coefficients	-0.364	0.162	0.123	0.187	0.027	0.040	0.034
Observations	74	89	63	63	63	63	87
R-squared	0.388	0.260	0.389	0.558	0.067	0.069	0.333

Notes : The unit of observation is a country. The dependent variable is the country-level average of the cultural/psychological traits reported at the top of each column. The mean and st. dev. of Climatic Instability is 0.25 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A10: Alternative cultural and psychological traits as outcomes: Schwartz measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable:							
	Tradition	Harmony	Embeddedness	Hierarchy	Mastery	Affective autonomy	Intellectual autonomy	Egalitarianism
Climatic instability	**-1.824****	**-0.183**	**-0.089**	**-0.060**	**-0.555****	**-0.143**	**0.458**	**-0.256**
	(0.696)	**(0.388)**	**(0.398)**	**(0.519)**	**(0.256)**	**(0.493)**	**(0.426)**	**(0.317)**
Historical controls:								
Distance from equator	0.005	0.008***	-0.008***	-0.012***	0.001	0.011***	0.006*	0.003
	(0.005)	(0.003)	(0.003)	(0.004)	(0.002)	(0.004)	(0.003)	(0.003)
Economic complexity	-0.065*	-0.030	-0.017	0.009	0.039	0.067	0.031	0.049*
	(0.035)	(0.044)	(0.034)	(0.068)	(0.035)	(0.057)	(0.042)	(0.027)
Political hierarchies	0.013	0.031	-0.005	0.117*	0.034	0.014	0.021	-0.104**
	(0.097)	(0.043)	(0.043)	(0.066)	(0.033)	(0.067)	(0.038)	(0.046)
Contemporary controls:								
Ln (per capita GDP)	-0.165***	0.012	-0.153***	-0.094**	-0.006	0.175***	0.128***	0.084***
	(0.049)	(0.024)	(0.022)	(0.037)	(0.016)	(0.030)	(0.027)	(0.025)
Mean (st. dev.) of dep variable	4.52 (0.55)	4.03 (0.29)	3.81 (0.40)	2.35 (0.43)	3.93 (0.16)	3.43 (0.52)	4.30 (0.38)	4.68 (0.27)
Standardized `beta' coefficients	-0.364	-0.069	-0.024	-0.015	-0.378	-0.029	0.129	-0.103
Observations	74	74	74	74	74	74	74	74
R-squared	0.388	0.226	0.699	0.392	0.122	0.631	0.638	0.324

Notes : The unit of observation is a country. The dependent variable is the country-level average of the cultural/psychological traits reported at the top of each column. The mean and st. dev. of Climatic Instability is 0.25 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A11: Robustness of estimates to controlling for additional observables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent Variable: Importance of Tradition, 1-6						
Climatic instability	**-1.732****	**-1.871****	**-2.131*****	**-1.663****	**-1.827****	**-1.891****	**-2.011****
	(0.769)	**(0.848)**	**(0.689)**	**(0.661)**	**(0.693)**	**(0.796)**	**(0.788)**
Historical controls:							
Distance from equator	0.005	0.006	0.013**	0.002	0.008	0.007	0.013*
	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)
Economic complexity	-0.066*	-0.061	-0.044	-0.059*	-0.054*	-0.058*	-0.013
	(0.035)	(0.038)	(0.038)	(0.033)	(0.030)	(0.033)	(0.042)
Political hierarchies	0.010	0.011	-0.026	0.035	0.039	0.031	0.043
	(0.097)	(0.098)	(0.098)	(0.102)	(0.088)	(0.102)	(0.101)
Contemporary controls:							
Ln (per capita GDP)	-0.158***	-0.162***	-0.153***	-0.145***	-0.145***	-0.094*	-0.057
	(0.045)	(0.055)	(0.046)	(0.053)	(0.048)	(0.055)	(0.053)
Additional controls:							
Ruggedness	0.042						-0.003
	(0.061)						(0.056)
Distance from the coast		0.037					-0.118
		(0.227)					(0.191)
Ethnic fractionalization			0.658**				0.630*
			(0.313)				(0.319)
Genetic Diversity				1.555			1.632**
				(0.941)			(0.790)
Trust					-1.007**		-1.164***
					(0.389)		(0.423)
Ln (human capital)						-0.305***	-0.230**
						(0.101)	(0.108)
Mean (st. dev.) of the dep var	4.52 (0.55)	4.52 (0.55)	4.51 (0.55)	4.51 (0.55)	4.52 (0.55)	4.50 (0.55)	4.49 (0.55)
Observations	74	74	73	73	74	68	66
R-squared	0.391	0.388	0.440	0.404	0.442	0.414	0.555

Notes : The unit of observation is a country. The dependent variable is the average at the country level of a measure of the self-reported importance of tradition. The mean and st. dev. of Climatic instability is 0.25 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A12: Importance of tradition, World Values Survey, robustness to the exclusion of potentially-endogenous covariates

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable: Importance of Tradition, 1-6					
	Ancestral Characteristics Measures					
	Original EA		With Eastern Europe & Siberia Extension		Also with the World Ethnographic Sample Extension	
Climatic instability	**-1.626****	**-1.842****	**-1.657****	**-1.828****	**-1.600****	**-1.704****
	(0.703)	**(0.733)**	**(0.703)**	**(0.732)**	**(0.679)**	**(0.717)**
Historical controls:						
Distance from equator	-0.003	-0.001	-0.003	-0.001	-0.003	-0.001
	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)
Economic complexity	-0.134***		-0.131***		-0.128***	
	(0.035)		(0.035)		(0.032)	
Political hierarchies	0.044		0.047		0.056	
	(0.115)		(0.112)		(0.123)	
Mean (st. dev.) of dep var	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)	4.52 (0.55)
Observations	75	75	75	75	75	75
R-squared	0.253	0.148	0.250	0.148	0.251	0.144

Notes : The unit of observation is a country. The dependent variable is the average at the country level of a measure of the self-reported importance of tradition. The mean and st. dev. of Climatic instability is 0.25 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A13: List of ethnicities from the Word Values Survey from the individual-level regressions that use the Ethnographic Atlas only sample

Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.
ABKHAZ	2	DARASA	6	JAVANESE	1,310	NANKANSE	5	SUMBAWANE	18
ADANGME	48	DIULA	86	JORDANIAN	2,055	NDEMBU	8	SWAZI	72
AFAR	5	DJUKA	95	KABRE	1	NEAPOLITA	19	SYRIANS	1
AMHARA	558	DOGON	21	KALMYK	4	NEGRISEMB	7	TAGBANUA	516
AMI	1	DORSE	80	KAONDE	43	NEWENGLAN	2,871	TAMIL	343
ANFILLO	1	DUSUN	12	KAREN	2	NUPE	16	TAWI-TAWI	22
ANNAMESE	931	DUTCH	17,283	KARIERA	1	ORAON	26	TAZARAWA	67
ARMENIANS	1,077	EDO	1	KASENA	1	PAEZ	1	TELUGU	102
ASHANTI	1,632	EFIK	19	KASHMIRI	2	PAHARI	3	THONGA	142
ASSINI	15	EGYPTIANS	3,167	KASONKE	14	PAIWAN	1	TIGRINYA	128
ATAYAL	142	EWE	303	KAZAK	1,836	PATHAN	222	TIV	8
AZJER	77	FRENCHCAN	445	KERALA	211	PEDI	467	TORADJA	11
BABYLONIA	2,887	GA	165	KHASI	160	PL TONGA	189	TSAMAI	4
BAKHTIARI	97	GBARI	3	KONKOMBA	3	PUNJABI	545	TSWANA	530
BAMBARA	397	GEORGIANS	1,391	KONSO	2	QASHGAI	1,314	TUMBUKA	21
BASA	2	GHEG	13	KOREANS	3	RIFFIANS	1	TUNISIANS	876
BASARI	37	GREEKS	975	KUBU	2	ROMANS	771	TURKMEN	12
BATAK	10	GUJARATI	330	KUNDA	23	RUSSIANS	7,863	TURKS	3,495
BAULE	13	GURAGE	54	KURD	298	RWALA	921	UKRAINIAN	1,159
BEMBA	407	HADIMU	11	KUSASI	4	SANUSI	1,783	UTTARPRAD	884
BENGALI	293	HAMYAN	35	LEBANESE	1,080	SENOI	55	VENDA	99
BHIL	258	HAZARA	115	LIPTAKO	27	SERBS	2,921	WALLOONS	1,100
BISA	3	HUNGARIAN	3,086	LOVEDU	231	SHAKO	1	XHOSA	896
BOERS	933	IBAN	63	LUIMBE	5	SHANTUNG	1,690	YAMI	11
BOKI	2	IBIBIO	6	MALAYS	2,069	SHONA	1,223	YORUBA	352
BONTOK	8	IBO	331	MAMPRUSI	11	SIAMESE	2,316	ZAZZAGAWA	471
BUILSA	24	IDOMA	6	MANOBO	1	SIDAMO	154	ZULU	1,431
BULGARIAN	809	IFUGAO	44	MAORI	1	SINDHI	92		
BYELORUSS	94	IGBIRA	4	MARGI	1	SINHALESE	2	*Total*	*112,179*
CAMBODIAN	121	IJAW	7	MARRI	59	SOMALI	2		
CHEKIANG	6	INCA	107	MINCHINES	3,689	SONGHAI	18		
CHEWA	200	IRANIANS	1,755	MINIANKA	1	SONINKE	7		
CHOCO	2	ISALA	1	MOBA	3	SOTHO	560		
CZECHS	1,822	ISOKO	2	MOROCCANS	827	SPAN BASQ	10		
DAGARI	7	IWA	13	MOSSI	313	SPANIARDS	13,309		
DAGOMBA	129	JAPANESE	2,576	MZAB	2	SUBANUN	59		

Table A14: List of ethnicities from the Word Value Survey individual-level regressions that use the Ethnographic Atlas and the Eastern Europe and Siberian extension sample

Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.
ABKHAZ	2	DARASA	6	ISOKO	2	MOLDOVANS	12	SPAN BASQ	10
ADANGME	48	DIULA	86	IWA	13	MOROCCANS	827	SPANIARDS	13,309
AFAR	5	DJUKA	95	JAPANESE	2,576	MOSSI	313	SUBANUN	59
AMHARA	558	DOGON	21	JAVANESE	1,310	MZAB	2	SUMBAWANE	18
AMI	1	DORSE	80	JORDANIAN	2,055	NANKANSE	5	SWAZI	72
ANFILLO	1	DUSUN	12	KABRE	1	NDEMBU	8	SYRIANS	1
ANNAMESE	931	DUTCH	4,918	KALMYK	4	NEAPOLITA	19	TAGBANUA	516
ARMENIANS	1,077	EDO	1	KAONDE	43	NEGRISEMB	7	TAMIL	343
ASHANTI	1,632	EFIK	19	KAREN	2	NEWENGLAN	2,871	TAWI-TAWI	22
ASSINI	15	EGYPTIANS	3,167	KARIERA	1	NUPE	16	TAZARAWA	67
ATAYAL	142	ENGLISH	8,894	KASENA	1	ORAON	26	TELUGU	102
AZJER	77	ESTONIANS	1,003	KASHMIRI	2	PAEZ	1	THONGA	142
BABYLONIA	2,887	EWE	303	KASONKE	14	PAHARI	3	TIGRINYA	128
BAKHTIARI	97	FRENCHCAN	445	KAZAK	1,754	PAIWAN	1	TIV	8
BAMBARA	397	GA	165	KAZAN TATAR	80	PATHAN	222	TORADJA	11
BASA	2	GAGAUZ	20	KERALA	211	PEDI	467	TSAMAI	4
BASARI	37	GBARI	3	KHASI	160	PL TONGA	189	TSWANA	530
BATAK	10	GEORGIANS	1,391	KONKOMBA	3	PUNJABI	545	TUMBUKA	21
BAULE	13	GERMANS (PRUSSIA)	3,482	KONSO	2	QASHGAI	1,314	TUNISIANS	876
BEMBA	407	GHEG	13	KOREANS	3	RIFFIANS	1	TURKMEN	12
BENGALI	293	GREEKS	975	KUBU	2	ROMANS	759	TURKS	3,475
BHIL	258	GUJARATI	330	KUNDA	23	RUSSIANS	7,863	UKRAINIAN	1,150
BISA	3	GURAGE	54	KURD	298	RWALA	921	UTTARPRAD	884
BOERS	933	HADIMU	11	KUSASI	4	SANUSI	1,783	VENDA	99
BOKI	2	HAMYAN	35	LEBANESE	1,080	SENOI	55	WALLOONS	1,100
BONTOK	8	HAZARA	115	LIPTAKO	27	SERBS	2,921	XHOSA	896
BUILSA	24	HUNGARIAN	2,083	LOVEDU	231	SHAKO	1	YAMI	11
BULGARIAN	809	IBAN	63	LUIMBE	5	SHANTUNG	1,690	YORUBA	352
BYELORUSS	94	IBIBIO	6	MALAYS	2,069	SHONA	1,223	ZAZZAGAWA	471
CAMBODIAN	121	IBO	331	MAMPRUSI	11	SIAMESE	2,316	ZULU	1,431
CHEKIANG	6	IDOMA	6	MANOBO	1	SIDAMO	154		
CHEWA	200	IFUGAO	44	MAORI	1	SINDHI	92	*Total*	*112,174*
CHOCO	2	IGBIRA	4	MARGI	1	SINHALESE	2		
CHUVASH	2	IJAW	7	MARRI	59	SOMALI	2		
CZECHS	1,815	INCA	107	MINCHINES	3,689	SONGHAI	18		
DAGARI	7	IRANIANS	1,755	MINIANKA	1	SONINKE	7		
DAGOMBA	129	ISALA	1	MOBA	3	SOTHO	560		

Table A15: List of ethnicities from the Word Value Survey individual-level regressions that use the Ethnographic Atlas, Eastern Europe and Siberian extensions, and World Ethnographic Sample

Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.	Ethnicity	Obs.
ABKHAZ	2	DANES (LOLLAND)	2,788	ISOKO	2	MOLDOVANS	771	SPANIARDS	13,309
ADANGME	48	DARASA	6	IWA	13	MOROCCANS	827	SUBANUN	59
AFAR	5	DIULA	86	JAPANESE	2,576	MOSSI	313	SUMBAWANE	18
AMHARA	558	DJUKA	95	JAVANESE	1,310	MZAB	2	SWAZI	72
AMI	1	DOGON	21	JORDANIAN	2,055	NANKANSE	5	SYRIANS	1
ANFILLO	1	DORSE	80	KABRE	1	NDEMBU	8	TAGALOG	516
ANNAMESE	931	DUSUN	12	KALMYK	4	NEAPOLITA	19	TAJIK (MOUNTAIN)	115
ARMENIANS	1,077	DUTCH	2,073	KAONDE	43	NEGRISEMB	7	TAMIL	343
ASHANTI	1,632	EDO	1	KAREN	2	NEWENGLAN	2,871	TAWI-TAWI	22
ASSINI	15	EFIK	19	KARIERA	1	NUPE	16	TAZARAWA	67
ATAYAL	142	EGYPTIANS	3,167	KASENA	1	ORAON	26	TELUGU	102
AZJER	77	ENGLISH	8,907	KASHMIRI	2	PAEZ	1	THONGA	142
BABYLONIA	2,887	ESTONIANS	1,003	KASONKE	14	PAHARI	3	TIGRINYA	128
BAKHTIARI	97	EWE	303	KAZAK	1,754	PAIWAN	1	TIV	8
BAMBARA	397	FRENCHCAN	445	KAZAN TATAR	80	PATHAN	222	TORADJA	11
BASA	2	GA	165	KERALA	211	PEDI	467	TSAMAI	4
BASARI	37	GAGAUZ	20	KHASI	160	PL TONGA	189	TSWANA	530
BATAK	10	GBARI	3	KONKOMBA	3	PUNJABI	545	TUMBUKA	21
BAULE	13	GEORGIANS	1,391	KONSO	2	QASHGAI	1,314	TUNISIANS	876
BEMBA	407	GERMANS (PRUSSIA)	3,484	KOREANS	3	RIFFIANS	1	TURKMEN	12
BENGALI	293	GHEG	13	KUBU	2	RUSSIANS	7,863	TURKS	3,475
BHIL	258	GREEKS	975	KUNDA	23	RWALA	921	UKRAINIAN	1,159
BISA	3	GUJARATI	330	KURD	298	SANUSI	1,783	UTTARPRAD	884
BOERS	933	GURAGE	54	KUSASI	4	SENOI	55	VENDA	99
BOKI	2	HADIMU	11	LEBANESE	1,080	SERBS	2,921	WALLOONS	1,100
BONTOK	8	HAMYAN	35	LIPTAKO	27	SHAKO	1	XHOSA	896
BUILSA	24	HUNGARIAN	1,177	LOVEDU	231	SHANTUNG	1,690	YAMI	11
BULGARIAN	809	IBAN	63	LUIMBE	5	SHONA	1,223	YORUBA	352
BYELORUSS	94	IBIBIO	6	MALAYS	2,069	SIAMESE	2,316	ZAZZAGAWA	471
CAMBODIAN	121	IBO	331	MAMPRUSI	11	SIDAMO	154	ZULU	1,431
CHEKIANG	6	IDOMA	6	MANOBO	1	SINDHI	92		
CHEWA	200	IFUGAO	44	MAORI	1	SINHALESE	2	*Total*	*111,242*
CHOCO	2	IGBIRA	4	MARGI	1	SOMALI	2		
CHUVASH	2	IJAW	7	MARRI	59	SONGHAI	18		
CZECHS	1,822	INCA	107	MINCHINES	3,689	SONINKE	7		
DAGARI	7	IRANIANS	1,755	MINIANKA	1	SOTHO	560		
DAGOMBA	129	ISALA	1	MOBA	3	SPAN BASQ	10		

Table A16: Differential annual persistence of FLFP from 1960-2018 using a two-step procedure

	(1)	(2)	(3)	(4)
	Dependent variable: Estimated persistence coeffient in FLFP, 1960-2010			
Climatic instability	**-0.309*** **	**-0.235** **	**-0.303*** **	**-0.310*** **
	(0.079)	**(0.094)**	**(0.099)**	**(0.107)**
Historical controls:				
Distance from equator			0.000	0.002
			(0.001)	(0.001)
Economic complexity			-0.005	0.004
			(0.006)	(0.006)
Political hierarchies			-0.011	-0.001
			(0.011)	(0.012)
Mean (st. dev.) of dep variable	0.93 (0.11)	0.93 (0.11)	0.93 (0.11)	0.93 (0.11)
Continent fixed effects	no	yes	no	yes
Observations	180	180	180	180
R-squared	0.076	0.151	0.086	0.168

Notes : The unit of observation is a country. The dependent variable is the estimated country-specific coefficient for the lagged female labor force participation variable obtained from an annual regression of female labor force participation on its lagged value over the 1960-2010 period. The mean and standard deviation Climatic instability is 0.23 (0.10). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A17: Differential persistence of FLFP, 1970 and 2012

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Female labor-force participation (FLFP) 2012						
FLFP 1970	0.330***	0.717***	0.704***	0.393	0.613**	-0.239	-0.768
	(0.079)	(0.161)	(0.161)	(0.590)	(0.267)	(0.879)	(1.100)
FLFP 1970 * Climatic instability		**-1.660****	**-1.813***	**-1.671****	**-1.667****	**-1.648****	**-1.088**
		(0.683)	**(0.933)**	**(0.698)**	**(0.689)**	**(0.698)**	**(1.206)**
Country-level controls:							
Climatic Instability		44.701	50.462	41.065	45.943	41.109	18.455
		(36.845)	(42.064)	(38.870)	(37.349)	(38.945)	(53.998)
Distance from equator	-0.174	-0.135	-0.201	-0.119	-0.137	-0.164	0.063
	(0.115)	(0.145)	(0.220)	(0.140)	(0.147)	(0.142)	(0.290)
Economic complexity	1.931	2.663*	2.682*	2.096	2.628*	2.193	1.781
	(1.253)	(1.546)	(1.570)	(1.839)	(1.553)	(1.591)	(1.886)
Political hierarchies	-1.606	-1.878	-1.948	-2.164	-3.119	-1.708	-2.101
	(1.567)	(1.397)	(1.479)	(1.335)	(2.980)	(1.301)	(3.419)
Ln (per-capita GDP)	-71.614***	-67.906***	-67.966***	-66.913***	-67.867***	-83.558***	-90.795**
	(24.480)	(23.724)	(23.815)	(24.111)	(23.911)	(30.525)	(35.195)
Ln (per-capita GDP) squared	3.822***	3.649***	3.652***	3.587***	3.648***	4.308***	4.608***
	(1.255)	(1.212)	(1.216)	(1.232)	(1.221)	(1.469)	(1.666)
FLFP 1970 * Distance from equat			0.002				-0.007
			(0.006)				(0.009)
FLFP 1970 * Economic complexit				0.049			0.008
				(0.082)			(0.089)
FLFP 1970 * Political hierarchies					0.029		0.016
					(0.061)		(0.079)
FLFP 1970 * Ln (per capita GDP)						0.104	0.155
						(0.089)	(0.124)
Continent fixed effects	yes	yes	yes	yes	yes	yes	yes
Mean (st. dev.) of dep. var.	50.7 (13.7)	50.7 (13.7)	50.7 (13.7)	50.7 (13.7)	50.7 (13.7)	50.7 (13.7)	50.7 (13.7)
Observations	77	77	77	77	77	77	77
R-squared	0.599	0.633	0.634	0.635	0.634	0.645	0.649
		Effect of "FLFP 1970" for mean values of controls and "Climatic instability" = 0					
		0.717	0.758	0.724	0.717	0.760	0.631
		(0.161)	(0.236)	(0.162)	(0.163)	(0.166)	(0.295)

Notes: OLS estimates are reported with robust standard errors in parentheses. The unit of observation is a country. The female labor-force participation variables (from 1970 and 2012) are measured as the percentage of women aged 15-64 in the labor force. Historical controls are defined in the appendix. Climatic instability ranges from 0.034 to 0.457 in the sample. Its mean (and standard deviation) is: 0.24 (0.09). *, ** and *** indicate significance at the 10, 5, and 1% levels.

Table A18: Differential persistence of FLFP, traditionally and today

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: Female labor-force participation 2012							
Traditional female participation in agriculture	0.248***	0.642***	0.654***	0.696**	0.697***	1.013*	0.833**	1.409*
	(0.072)	(0.168)	(0.168)	(0.307)	(0.222)	(0.577)	(0.360)	(0.771)
Trad female part in agric * Climatic instabil		**-1.703*** **	**-1.626** **	**-1.686*** **	**-1.667** **	**-1.582** **	**-1.671*** **	**-1.528** **
		(0.598)	**(0.735)**	**(0.616)**	**(0.645)**	**(0.651)**	**(0.605)**	**(0.769)**
Country-level controls:								
Climatic instability		69.112***	65.861**	67.967***	67.474***	63.248**	66.664***	58.842*
		(21.545)	(27.709)	(22.740)	(23.583)	(24.715)	(22.818)	(31.004)
Distance from equator	-0.059	-0.150	-0.105	-0.150	-0.145	-0.154	-0.155	-0.186
	(0.110)	(0.116)	(0.234)	(0.116)	(0.119)	(0.117)	(0.115)	(0.272)
Economic complexity	0.964	0.717	0.724	0.986	0.683	0.754	0.786	1.067
	(1.196)	(1.259)	(1.261)	(2.023)	(1.216)	(1.257)	(1.310)	(1.986)
Political hierarchies	-0.985	-0.633	-0.546	-0.735	0.132	-0.778	-0.559	-0.285
	(1.844)	(1.883)	(1.908)	(1.841)	(3.252)	(1.945)	(1.882)	(3.683)
Ln (per-capita GDP)	-70.613***	-58.820***	-58.612***	-58.533***	-58.947***	-51.566***	-59.999***	-52.354***
	(14.214)	(14.349)	(14.515)	(14.593)	(14.432)	(18.705)	(14.519)	(19.166)
Ln (per-capita GDP) squared	3.777***	3.102***	3.087***	3.088***	3.107***	2.791***	3.173***	2.857***
	(0.772)	(0.779)	(0.790)	(0.791)	(0.783)	(0.929)	(0.791)	(0.945)
Year ethnicity sampled	2.631	0.292	0.399	0.415	0.401	1.015	0.638	1.717
	(1.592)	(1.858)	(1.941)	(1.879)	(1.907)	(2.261)	(1.919)	(2.394)
Female part in agric * Distance from equator			-0.001					0.001
			(0.005)					(0.007)
Female part in agric * Economic complexity				-0.010				-0.009
				(0.047)				(0.047)
Female part in agric * Political hierarchies					-0.019			-0.014
					(0.065)			(0.083)
Female part in agric * Ln (per-capita GDP)						-0.045		-0.050
						(0.068)		(0.076)
Female part in agric * Year ethnicity sampled							-0.105	-0.150
							(0.172)	(0.187)
Continent fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Mean (st. dev.) of dep. var.	53.2 (15.4)	53.2 (15.4)	53.2 (15.4)	53.2 (15.4)	53.2 (15.4)	53.2 (15.4)	53.2 (15.4)	53.2 (15.4)
Observations	165	165	165	165	165	165	165	165
R-squared	0.342	0.379	0.379	0.379	0.379	0.382	0.379	0.384
		Effect of "Trad female part in agriculture" for mean values of controls & "Climatic instability"=0						
		0.642	0.620	0.632	0.629	0.601	0.647	0.598
		(0.168)	(0.204)	(0.177)	(0.182)	(0.182)	(0.169)	(0.209)

Notes: OLS estimates are reported with robust standard errors in parentheses. The unit of observation is a country. Female labor-force participation is the percentage of women in the labor force, measured in 2012 and from the *Ethnographic Atlas* . Historical controls are defined in the appendix. Climatic instability ranges from 0.034 to 0.495 in the sample. Its mean (and standard deviation) is: 0.24 (0.10). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A19: Differential persistence of polygamy, traditionally and today

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: Indicator variable for the practice of polygamy today, 0/1							
Traditional polygamy, 0-1	0.324***	0.845***	1.182***	0.612**	1.786***	1.862***	3.159*	2.708*
	(0.122)	(0.212)	(0.220)	(0.290)	(0.368)	(0.666)	(1.683)	(1.599)
Traditional polygamy * Climatic instability		**-2.177****	**-1.173**	**-2.153****	**-2.071*****	**-1.805***	**-2.171****	**-1.205**
		(0.878)	**(0.747)**	**(0.864)**	**(0.765)**	**(0.914)**	**(0.877)**	**(0.753)**
Country-level controls:								
Climatic instability		2.363***	1.457***	2.399***	2.184***	1.975***	2.383***	1.429***
		(0.667)	(0.476)	(0.659)	(0.511)	(0.681)	(0.666)	(0.453)
Distance from equator	-0.004	-0.006*	0.008**	-0.006*	-0.005	-0.006**	-0.006*	0.004*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Economic complexity	-0.010	-0.013	-0.019	-0.042	-0.014	-0.014	-0.013	-0.033*
	(0.020)	(0.021)	(0.019)	(0.025)	(0.021)	(0.020)	(0.020)	(0.020)
Political hierarchies	-0.033	-0.033	-0.020	-0.034	0.186***	-0.030	-0.030	0.143***
	(0.039)	(0.036)	(0.033)	(0.036)	(0.059)	(0.035)	(0.036)	(0.053)
Ln (per capita GDP)	-0.034	-0.043	-0.043	-0.043	-0.042	0.065	-0.045	0.010
	(0.031)	(0.031)	(0.030)	(0.031)	(0.030)	(0.064)	(0.032)	(0.066)
Year ethnicity sampled	-0.104**	-0.109**	-0.122***	-0.109**	-0.108**	-0.118**	1.091	0.152
	(0.044)	(0.045)	(0.045)	(0.045)	(0.045)	(0.046)	(0.855)	(0.950)
Traditional polygamy * Distance from equator			-0.018***					-0.013***
			(0.005)					(0.005)
Traditional polygamy * Economic complexity				0.038				0.018
				(0.034)				(0.030)
Traditional polygamy * Political hierarchies					-0.262***			-0.197***
					(0.077)			(0.074)
Traditional polygamy * Log (per-capita GDP)						-0.122*		-0.060
						(0.072)		(0.073)
Traditional polygamy * Year sampled							-1.203	-0.274
							(0.867)	(0.956)
Continent fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Mean (st. dev.) of dep. var.	0.44 (0.41)	0.44 (0.41)	0.44 (0.41)	0.44 (0.41)	0.44 (0.41)	0.44 (0.41)	0.44 (0.41)	0.44 (0.41)
Observations	109	109	109	109	109	109	109	109
R-squared	0.539	0.574	0.602	0.576	0.597	0.581	0.577	0.616
		Effect of "Traditional polygamy" for mean values of controls and "Climatic instability" = 0						
		0.845	0.760	0.846	0.903	0.795	1.049	0.851
		(0.212)	(0.188)	(0.212)	(0.199)	(0.215)	(0.262)	(0.232)

Notes: OLS estimates are reported with robust standard errores in brackets. The unit of observation is a country. Polygamy is an indicator variable that equals one if having more than one spouse is an accepted or legal practice in the country. Climatic instability ranges from 0.052 to 0.495 in the sample. Its mean (and standard deviation) is: 0.21 (0.09). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A20: Differential persistence of consanguineous marriage, traditionally and today

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: Percent of marriages that are consanguineous today, 0-100							
Traditional consanguineous marriage, 0-100	0.178***	0.401***	0.402***	0.179	0.388	0.210	0.390***	-0.104
	(0.066)	(0.086)	(0.115)	(0.438)	(0.262)	(0.516)	(0.080)	(0.884)
Trad consanguineous marriage * Climatic instability		**-1.310****	**-1.308****	**-1.323****	**-1.322****	**-1.221****	**-1.327****	**-1.196****
		(0.556)	**(0.566)**	**(0.572)**	**(0.648)**	**(0.491)**	**(0.550)**	**(0.585)**
Country-level controls:								
Climatic instability		34.223	34.105	40.472	34.771	34.960	37.643	47.573
		(22.269)	(24.022)	(33.221)	(27.336)	(23.636)	(22.524)	(39.334)
Distance from equator	0.112	0.052	0.053	0.045	0.054	0.075	0.036	0.009
	(0.146)	(0.155)	(0.161)	(0.166)	(0.159)	(0.138)	(0.155)	(0.187)
Economic complexity	0.319	-2.984*	-2.987	-5.847	-3.034	-2.443	-3.170*	-6.558
	(1.833)	(1.755)	(1.782)	(6.574)	(1.944)	(1.639)	(1.740)	(6.538)
Political hierarchies	-1.904	-0.492	-0.489	-0.272	-0.639	-0.833	-0.221	0.813
	(2.683)	(2.598)	(2.671)	(2.663)	(4.291)	(3.127)	(2.656)	(4.784)
Ln (per-capita GDP)	-3.139	-4.805*	-4.803*	-4.427*	-4.824	-5.432	-5.120*	-5.318
	(2.761)	(2.699)	(2.763)	(2.204)	(2.940)	(3.630)	(2.737)	(3.413)
Years between current and historical periods	0.001	0.001	0.001	0.000	0.001	0.000	-0.031	-0.045
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.042)	(0.045)
Trad consanguineous * Distance from equator			-0.000					0.001
			(0.003)					(0.003)
Trad consanguineous * Economic complexity				0.034				0.051
				(0.068)				(0.079)
Trad consanguineous * Political hierarchies					0.004			-0.027
					(0.073)			(0.078)
Trad consanguineous * Log (per-capita GDP)						0.019		0.023
						(0.053)		(0.055)
Trad consanguineous * Years between							0.000	0.000
							(0.000)	(0.000)
Continent fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Mean (st. dev.) of dep. var.	12.8 (16.4)	12.8 (16.4)	12.8 (16.4)	12.8 (16.4)	12.8 (16.4)	12.8 (16.4)	12.8 (16.4)	12.8 (16.4)
Observations	60	60	60	60	60	60	60	60
R-squared	0.662	0.702	0.702	0.705	0.702	0.703	0.704	0.711
		Effect of "Traditional consanguineous marriage" for mean values of controls & "Climatic instability" = 0						
		0.401	0.400	0.402	0.403	0.393	0.455	0.469
		(0.086)	(0.087)	(0.089)	(0.092)	(0.085)	(0.126)	(0.150)

Notes: OLS estimates are reported with robust standard errores in brackets. The unit of observation is a country. The dependent variable is the proportion of total marriages that are consanguineous. The measure is taken from Schulz (2017). Climatic instability ranges from 0.052 to 0.457 in the sample. Its mean (and standard deviation) is: 0.25 (0.10). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A21: Differential persistence of cultural traits: FLFP, polygamy, and cousin marriage, controlling for education

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Modern characteristic (dependent variable):							
	FLFP, 2012				**Polygamy, 0/1**		**Cousin Marriage, 0-100**	
	Historical characteristic (independent variable):							
	FLFP, 1970		**Traditional Female Participation in Agriculture**		**Traditional Practice of Polygamy, 0/1**		**Traditional Practice of Cousin Marriage, 0-100**	
Traditional characteristic	**0.313*** (0.076)**	**0.605*** (0.142)**	**0.259*** (0.072)**	**0.733*** (0.167)**	**0.192 (0.151)**	**0.728*** (0.262)**	**0.148** (0.065)**	**0.424*** (0.138)**
Traditional char * Climatic instability		**-1.139** (0.562)**		**-1.894*** (0.626)**		**-1.956* (0.993)**		**-1.487** (0.694)**
Country-level controls:								
Climatic Instability		14.120		66.655***		2.888***		57.560**
		(28.396)		(21.855)		(0.657)		(28.105)
Distance from equator	-0.262**	-0.167	-0.082	-0.144	-0.005	-0.007*	0.166	0.044
	(0.103)	(0.128)	(0.129)	(0.123)	(0.003)	(0.003)	(0.132)	(0.164)
Economic complexity	2.131	2.496*	2.121**	1.702	-0.025	-0.016	-0.809	-3.064**
	(1.305)	(1.471)	(1.035)	(1.097)	(0.023)	(0.024)	(1.526)	(1.447)
Political hierarchies	-0.948	-1.151	1.850	2.657	-0.036	-0.028	-2.326	-1.566
	(1.342)	(1.275)	(1.650)	(1.707)	(0.041)	(0.037)	(3.172)	(2.507)
Ln (per-capita GDP)	-39.315**	-43.072**	-84.249***	-69.133***	0.027	0.017	-0.873	0.187
	(16.421)	(16.314)	(15.817)	(16.499)	(0.037)	(0.038)	(2.437)	(2.984)
Ln (per-capita GDP) squared	2.204**	2.379***	4.346***	3.511***				
	(0.837)	(0.831)	(0.833)	(0.877)				
Ln (human capital)	-36.282***	-34.487***	1.064	1.465	-0.248***	-0.256***	-12.512*	-17.804*
	(7.316)	(7.076)	(9.361)	(8.630)	(0.064)	(0.067)	(7.073)	(10.031)
Ln (human capital) squared	9.143***	9.709***	2.739	2.096				
	(2.336)	(2.250)	(3.043)	(2.927)				
Year ethnicity sampled			1.377	-1.441	-0.126**	-0.140***	0.001	0.001
			(1.650)	(2.066)	(0.051)	(0.052)	(0.003)	(0.003)
Continent fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Mean (st. dev.) of dep. var.	51.18 (13.3)	51.18 (13.3)	53.09 (15.1)	53.09 (15.1)	0.43 (0.41)	0.43 (0.41)	12.35 (16.5)	12.35 (16.5)
Observations	73	73	137	137	91	91	56	56
R-squared	0.697	0.723	0.440	0.480	0.547	0.609	0.751	0.789

Notes : OLS estimates are reported with robust standard errors in parentheses. The unit of observation is a country. The female labor force participation variables (1970 and 2012) are measured as the percentage of women aged 15-64 in the labor force. Polygamy is an indicator variable that equals one if having more than one spouse is an accepted or legal practice in the country. Cousin marriage in the modern period is the proportion of total marriages that are consanguineous. The measure is taken from Schulz (2017). Historical controls are described in the appendix. Climatic instability ranges from approximately 0.05 to 0.45, although this varies slightly depending on the sample. Its mean (and standard deviation) is approximately: 0.24 (0.09). *, ** and *** indicate significance at the 10, 5, and 1% levels.

Table A22: Ethnicity-level estimates of the differential persistence of FLFP, traditionally and today

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Average female labor-force participation rate today						
Traditional female participation in agriculture	0.157*	0.400**	0.406**	0.685***	0.372*	3.225	4.280*
	(0.082)	(0.153)	(0.189)	(0.254)	(0.217)	(2.273)	(2.501)
Trad female part in agric * Climatic instability		**-1.268***	**-1.256***	**-1.059**	**-1.268***	**-1.362***	**-1.042**
		(0.722)	**(0.678)**	**(0.688)**	**(0.724)**	**(0.742)**	**(0.653)**
Ethnicity-level controls:							
Climatic instability		55.165	54.202	41.809	55.406	60.687*	42.052
		(34.924)	(33.472)	(33.328)	(34.965)	(36.381)	(32.735)
Distance from equator	0.045	-0.067	-0.050	-0.053	-0.068	-0.068	-0.028
	(0.131)	(0.148)	(0.224)	(0.147)	(0.147)	(0.147)	(0.248)
Economic complexity	0.935	0.824	0.831	3.469*	0.828	0.633	4.690**
	(1.000)	(0.918)	(0.921)	(2.041)	(0.925)	(0.954)	(2.240)
Political hierarchies	-0.608	-0.250	-0.253	-0.662	-0.582	-0.129	-3.283
	(1.194)	(1.206)	(1.216)	(1.219)	(2.236)	(1.223)	(2.858)
Year ethnicity sampled	-3.437	0.011	-0.006	0.119	0.127	0.820	2.088
	(2.492)	(3.387)	(3.330)	(3.486)	(3.443)	(3.365)	(3.616)
Female part agric * Distance from equator			-0.000				-0.001
			(0.005)				(0.006)
Female part agric * Economic complexity				-0.052*			-0.080**
				(0.031)			(0.037)
Female part agric * Political hierarchies					0.008		0.059
					(0.034)		(0.046)
Female part agric * Year ethnicity sampled						-1.452	-1.873
						(1.131)	(1.222)
Country-survey-year fixed effects	yes	yes	yes	yes	yes	yes	yes
Mean (st. dev.) of dep. var.	54.8 (22.37)	54.8 (22.37)	54.8 (22.37)	54.8 (22.37)	54.8 (22.37)	54.8 (22.37)	54.8 (22.37)
Number of ethnicities	109	109	109	109	109	109	109
Observations	211	211	211	211	211	211	211
R-squared	0.478	0.492	0.492	0.499	0.492	0.496	0.509
		Effect of "Trad female part in agric" for mean values of controls & "Climatic instability"=0					
		0.400	0.398	0.354	0.396	0.436	0.350
		(0.151)	(0.148)	(0.141)	(0.155)	(0.165)	(0.155)

Notes: OLS estimates are reported with standard errors clustered at the ethnicity level in parentheses. The unit of observation is an ethnicity in a given country/year. Female labor-force participation is the percentage of women in the labor force. The countries (and survey years) included in the sample are Belarus (1999), Cambodia 1998, 2008), Malaysia (1970, 1980, 1991, 2000), Nepal (2001), Philippines (1990), Sierra Leone (2004), Uganda (1991, 2002), and Vietnam (1989, 1999, 2009). Climatic instability ranges from 0.034 to 0.516 in the sample. Its mean (and standard deviation) is: 0.19 (0.10). *, ** and *** indicate significance 10, 5 and 1% levels.

Table A23: Differential persistence of education and occupation. OLS estimates with equal weights for each group

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Groups and observations defined by:							
	Origin country, birth cohort				Origin country, birth cohort, state			
	Average characteristic of sons (dep var) and fathers (indep var):							
	Education		Occupation score		Education		Occupation score	
Fathers' characteristic	**0.266*** **	**0.500*** **	**0.221*** **	**0.277** **	**0.157*** **	**0.223*** **	**0.130*** **	**0.273*** **
	(0.047)	**(0.089)**	**(0.050)**	**(0.126)**	**(0.030)**	**(0.069)**	**(0.033)**	**(0.076)**
Fathers' characteristic * Climatic instabilit		**-0.998*** **		**-0.250**		**-0.264**		**-0.575** **
		(0.313)		**(0.500)**		**(0.213)**		**(0.233)**
Country-level controls:								
Climatic instability	0.831	5.949***	-0.887	10.690	-0.273	1.045	0.846	27.357**
	(0.952)	(1.846)	(5.598)	(24.490)	(1.084)	(1.573)	(7.189)	(12.140)
Distance from equator	0.002	0.003	0.038	0.038	0.004	0.005	0.005	0.006
	(0.005)	(0.005)	(0.033)	(0.033)	(0.006)	(0.006)	(0.045)	(0.043)
Economic complexity	0.117	0.097	-0.410	-0.398	-0.233**	-0.227**	-2.377***	-2.296***
	(0.153)	(0.146)	(0.525)	(0.527)	(0.106)	(0.103)	(0.692)	(0.671)
Political hierarchies	-0.181	-0.188*	-0.041	-0.060	0.153	0.160	1.702	1.773
	(0.115)	(0.113)	(0.715)	(0.722)	(0.146)	(0.144)	(1.211)	(1.193)
State fixed effects	no	no	no	no	yes	yes	yes	yes
Number of countries of origin	116	116	109	109	91	91	88	88
Mean (st. dev.) of the dep. variable	6.45 (1.22)	6.45 (1.22)	49.8 (8.23)	49.8 (8.23)	6.26 (1.57)	6.26 (1.57)	49.1 (10.1)	49.1 (10.1)
Observations	468	468	439	439	2,704	2,704	2,421	2,421
R-squared	0.174	0.194	0.069	0.070	0.111	0.112	0.094	0.097

Notes: OLS estimates are reported with standard errors clustered at the level of the country. In columns 1-4, the unit of observation is a group that is defined by the father's country of birth and the son's birth cohort (1961-1965, 1966-1970, 1971-1975, 1975-1980, 1981-1985). In columns 5-8, the groups are defined by the father's country of birth the son's birth cohort, and the state of residence of the father and son. Equal weights are given to each group regardless of size. Education measured as a variable that ranges from from 0 (8th grade or less) to 9 (more than college). The occupational prestige score, which range from 10-90, is taken from Davis et al (2006). The mean (and standard deviation) of Climatic instability is 0.25 (0.10). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A24: Emigration in 2015 and climatic instability in the country of origin

	(1)	(2)	(3)	(4)
	Dependent variable:			
	Log (Number of emigrants)	Number of emigrants / Origin country population	Log (Number of emigrants to US)	Number of emigrants to US / Origin country population
Origin country characteristics:				
Climatic instability	**0.205**	**-1.350**	**-1.063**	**0.003**
	(0.818)	**(10.047)**	**(3.944)**	**(0.024)**
Distance from equator	0.016**	-0.054	0.024	-0.001***
	(0.007)	(0.098)	(0.025)	(0.000)
Economic complexity	0.096*	0.814	0.534**	0.002**
	(0.056)	(0.609)	(0.208)	(0.001)
Political hierarchies	0.322***	5.265***	1.255***	0.014***
	(0.118)	(1.347)	(0.379)	(0.004)
Log (per-capita GDP)	-0.167**	-0.773	0.655*	0.005*
	(0.072)	(0.799)	(0.375)	(0.003)
Log (population)	0.632***	-4.406***	0.733***	-0.008***
	(0.032)	(0.609)	(0.143)	(0.002)
Mean (st. dev.) of dep var	12.88 (1.76)	12.05 (15.31)	7.99 (4.62)	0.02 (0.04)
Observations	176	176	176	176
R-squared	0.744	0.413	0.354	0.243

Notes: The unit of observation is an origin country. The dependent variable in column 1 is the log of the number of emigrants leaving a country of origin; in column 2, it is the number of emigrants leaving an origin country divided by the origin country's total population; in column 3, it is the number of emigrants from the origin country to the United States; and in column 4, it is the number of emigrants from an origin country to the United States divided by the origin country's total population, each measured in the year 2015. The mean (and standard deviation) of Climatic instability is 0.23 (0.10). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A25: Whether an Indigenous language is spoken at home. Using the 1930 Census only

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep variable: Indicator for speaking an Indigenous language at home					Dep var: Fraction speaking an Indigenous language at home
			Living with parents			
	All individuals	Not living with parents	All ages	18 or younger	Over 18	
Climatic instability	**-1.010***	**-0.862***	**-1.113***	**-1.129***	**-0.906***	**-4.955****
	(0.513)	**(0.448)**	**(0.561)**	**(0.567)**	**(0.531)**	**(2.119)**
Ethnicity-level controls:						
Distance from equator	-0.013*	-0.012*	-0.014*	-0.015*	-0.009	-0.029
	(0.007)	(0.007)	(0.008)	(0.008)	(0.007)	(0.074)
Economic complexity	-0.027*	-0.022	-0.031**	-0.033**	-0.020	0.165
	(0.014)	(0.013)	(0.015)	(0.015)	(0.016)	(0.128)
Political hierarchies	-0.143*	-0.124*	-0.153*	-0.153*	-0.142*	-0.819
	(0.079)	(0.071)	(0.083)	(0.083)	(0.082)	(0.626)
Individual controls	yes	yes	yes	yes	yes	-
Number of ethnic groups	82	82	78	77	66	82
Number of clusters (grid cells)	39	39	39	39	39	39
Mean (st. dev.) of dependent variable	0.17 (0.38)	0.17 (0.38)	0.17 (0.38)	0.17 (0.38)	0.15 (0.36)	0.02 (0.13)
Observations	11,468	5,757	5,711	4,850	861	137
R-squared	0.450	0.474	0.450	0.461	0.435	

Notes: In columns 1-5, OLS estimates are reported with standard errors clustered at the level of the climatic grid cell in parentheses. The unit of observation is a person who identifies him/herself as a Native American and the dependent variable is an indicator that equals one if the person speaks an Indigenous (i.e., Native American) language at home. In column 6, Poisson estimates are reported with standard errors clustered at the grid cell level. The unit of observation is an Indigenous ethnic group living in a given location and the dependent variable is the fraction of poeple speaking an Indigenous language at home. The specifications reported in columns 1-5 include the following covariates: a quadratic in age, a gender indicator, employment status fixed effects, an indicator for being married, metropolitan area fixed effects, an indicator for whether the individual has any education. The mean (and standard deviation) of Climatic instability is 0.27 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A26: Whether Indigenous populations of the United States speak their traditional language at home. Individual-level estimates, dropping nomadic tribes

	(1)	(2)	(3)	(4)	(5)
	Dep variable: Indicator for speaking an Indigenous language at home				
		Not living with	Living with parents		
	All individuals	parents	All ages	18 or younger	Over 18
Climatic instability	**-1.122*** **	**-1.228*** **	**-0.963*** **	**-0.874*** **	**-1.334*** **
	(0.342)	**(0.386)**	**(0.283)**	**(0.273)**	**(0.328)**
Ethnicity-level controls:					
Distance from equator	-0.009**	-0.010**	-0.007**	-0.006*	-0.011***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)
Economic complexity	-0.040***	-0.043**	-0.034***	-0.031***	-0.046***
	(0.013)	(0.016)	(0.010)	(0.009)	(0.014)
Political hierarchies	-0.095**	-0.107**	-0.076**	-0.068*	-0.111***
	(0.039)	(0.042)	(0.035)	(0.036)	(0.036)
Individual controls	yes	yes	yes	yes	yes
Number of ethnic groups	78	78	74	73	63
Number of clusters (grid cells)	38	38	38	38	38
Mean (st. dev.) of dependent variable	0.189 (0.391)	0.206 (0.405)	0.161 (0.367)	0.138 (0.345)	0.257 (0.109)
Observations	121,501	75,026	46,475	37,900	8,575
R-squared	0.353	0.396	0.303	0.262	0.446

Notes: OLS estimates are reported with standard errors clustered at the level of the climatic grid cell in parentheses. The unit of observation is a person who identifies him/herself as a Native American. The dependent variable is an indicator that equals one if the person speaks an Indigenous (Native American) language at home. All specification include the following covariates: a quadratic in age, a gender indicator, employment-status fixed effects, an indicator for being married, metropolitan-area fixed effects, and an indicator for whether the individual has any education. The nomadic ethnicities excluded from the sample are Assiniboin, Blackfoot, Cheyenne, Comanche, and Gros Ventre. The mean (and standard deviation) of Climatic instability is 0.27 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A27: Whether Indigenous populations of the United States speak their traditional language at home. Individual-level estimates, dropping nomadic or semi-nomadic tribes

	(1)	(2)	(3)	(4)	(5)
	Dep variable: Indicator for speaking an Indigenous language at home				
		Not living with	Living with parents		
	All individuals	parents	All ages	18 or younger	Over 18
Climatic instability	**-0.939*** **	**-1.013** **	**-0.833*** **	**-0.752** **	**-1.155*** **
	(0.329)	**(0.366)**	**(0.286)**	**(0.276)**	**(0.325)**
Ethnicity-level controls:					
Distance from equator	-0.004	-0.004	-0.004	-0.003	-0.006
	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)
Economic complexity	-0.062***	-0.068**	-0.053***	-0.049***	-0.069***
	(0.020)	(0.025)	(0.013)	(0.012)	(0.018)
Political hierarchies	-0.070*	-0.079*	-0.054*	-0.048	-0.085**
	(0.038)	(0.045)	(0.031)	(0.032)	(0.036)
Individual controls	yes	yes	yes	yes	yes
Number of ethnic groups	51	51	47	47	41
Number of clusters (grid cells)	27	27	27	27	27
Mean (st. dev.) of dependent variable	0.207 (0.405)	0.225 (0.417)	0.179 (0.384)	0.154 (0.361)	0.288 (0.453)
Observations	105,891	65,574	40,317	32,753	7,564
R-squared	0.378	0.428	0.320	0.279	0.460

Notes: OLS estimates are reported with standard errors clustered at the level of the climatic grid cell in parentheses. The unit of observation is a person who identifies him/herself as a Native American. The dependent variable is an indicator that equals one if the person speaks an Indigenous (Native American) language at home. All specification include the following covariates: a quadratic in age, a gender indicator, employment-status fixed effects, an indicator for being married, metropolitan-area fixed effects, and an indicator for whether the individual has any education. The nomadic and semi-nomadic ethnicities excluded from the sample are Achomawi, Arapaho, Assiniboin, Bannock, Blackfoot, Cahuilla, Chemehuev, Cheyenne, Chippewa, Coeur D'Alene, Comanche, Crow, E Cree, Flathead, Gosiute, Gros Ventre, Kalispel, Kidutokad, Kiowa, Klallam, Klamath, Kutenai, Lummi, Modoc, Nezperce, Quinault, South Ute, Santee, Teton, Umatilla, Washo, and Wintu. The mean (and standard deviation) of Climatic instability is 0.27 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A28: Whether Indigenous populations of Canada and the United States speak their traditional language. Ethnicity-level estimates, dropping nomadic tribes

	(1)	(2)	(3)	(4)	(5)
	United States	**Canada**			**U.S. & Canada**
	Indigenous language is spoken at home	Indigenous language is mother tongue	Indigenous language is spoken at home	Conversational in Indigenous language	Indigenous language is spoken at home
Climatic instability	**-4.458*** **	**-2.510*** **	**-2.563*** **	**-1.918*** **	**-4.227*** **
	(1.580)	**(0.829)**	**(0.962)**	**(0.738)**	**(1.446)**
Ethnicity-level controls:					
Distance from the equator	-0.001	0.061**	0.079*	0.028	-0.002
	(0.018)	(0.031)	(0.041)	(0.028)	(0.017)
Economic complexity	-0.351***	-0.216***	-0.261***	-0.172***	-0.350***
	(0.082)	(0.058)	(0.052)	(0.036)	(0.077)
Political hierarchies	0.104	0.284	0.222	0.143	0.098
	(0.216)	(0.178)	(0.205)	(0.146)	(0.197)
Location FE	yes	yes	yes	yes	yes
Survey-year FE	yes	yes	yes	yes	yes
Number of ethnic groups	78	32	32	32	101
Number of clusters (grid cells)	38	21	21	21	50
Mean (st. dev.) of dependent variable	0.041 (0.142)	0.260 (0.238)	0.225 (0.240)	0.309 (0.251)	0.065 (0.173)
Observations (ethnicity-year-location)	2,986	444	444	444	3,430

Notes: Poisson estimates are reported with standard errors clustered at the grid-cell level in parentheses. The unit of observation is an Indigenous ethnic group (from the U.S. and/or Canada), in a location, and observed in a census survey. The dependent variables are different measures of the fraction of people who can speak their traditional language. The American sample includes data from the 1930, 1990, and 2000 Censuses. The Canadian sample includes data from the 2001, 2006, and 2011 Censuses. The nomadic ethnicities excluded from the sample are Assiniboin, Blackfoot, Cheyenne, Comanche, Gros Ventre, and Plains Cree. The mean (and standard deviation) of Climatic instability is: 0.30 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A29: Whether Indigenous populations of Canada and the United States speak their traditional language. Ethnicity-level estimates, dropping nomadic or semi-nomadic tribes

	(1)	(2)	(3)	(4)	(5)
	United States	**Canada**			**U.S. & Canada**
	Indigenous language is spoken at home	Indigenous language is mother tongue	Indigenous language is spoken at home	Conversational in Indigenous language	Indigenous language is spoken at home
Climatic instability	**-3.331****	**-9.380*****	**-13.400*****	**-6.364*****	**-3.340****
	(1.507)	**(2.680)**	**(1.757)**	**(1.203)**	**(1.505)**
Ethnicity-level controls:					
Distance from the equator	0.005	0.561***	1.074***	0.518***	0.005
	(0.018)	(0.107)	(0.091)	(0.049)	(0.018)
Economic complexity	-0.400***	-0.335***	-0.432***	-0.236***	-0.398***
	(0.107)	(0.101)	(0.057)	(0.036)	(0.102)
Political hierarchies	0.052	0.487**	0.022	-0.013	0.052
	(0.240)	(0.233)	(0.174)	(0.111)	(0.229)
Location FE	yes	yes	yes	yes	yes
Survey-year FE	yes	yes	yes	yes	yes
Number of ethnic groups	51	17	17	17	62
Number of clusters (grid cells)	49	17	17	17	60
Mean (st. dev.) of dependent variable	0.042 (0.149)	0.116 (0.096)	0.085 (0.085)	0.151 (0.112)	0.044(0.147)
Observations (ethnicity-year-location)	2,560	110	110	110	2,670

Notes: Poisson estimates are reported with standard errors clustered at the grid-cell level in parentheses. The unit of observation is an Indigenous ethnic group (from the U.S. and/or Canada), in a location, and observed in a census survey. The dependent variables are different measures of the fraction of people who can speak their traditional language. The American sample includes data from the 1930, 1990, and 2000 Censuses. The Canadian sample includes data from the 2001, 2006, and 2011 Censuses. The nomadic and semi-nomadic ethnicities excluded from the sample are: Achomawi, Arapaho, Assiniboi, Bannock, Blackfoot, Cahuilla, Chemehuev, Cheyenne, Chilcotin, Chippewa, Coeur D'Alene, Comanche, Crow, Flathead, Gosiute, Gros Ventre, Kalispel, Kaska, Kidutokad, Kiowa, Klallam, Klamath, Kutenai, Lillooet, Lummi, Modoc, Nezperce, Ojbwa, Plains Cree, Quinault, South Ute, Santee, Shuswap, Teton, Thompson, Umatilla, Washo, and Wintu. The mean (and standard deviation) of Climatic instability is: 0.30 (0.11). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A30: Whether Indigenous populations of the United States speak their traditional language at home. Individual-level estimates, PDSI-based climate measures, dropping nomadic tribes

	(1)	(2)	(3)	(4)	(5)
	Dep variable: Indicator for speaking an Indigenous language at home				
		Not living with	Living with parents		
	All individuals	parents	All ages	18 or younger	Over 18
	Panel A. Ancestral instability of the first moment of PDSI				
Climatic instability (PDSI)	**-0.696****	**-0.770****	**-0.594****	**-0.545****	**-0.811****
	(0.326)	**(0.374)**	**(0.263)**	**(0.241)**	**(0.355)**
Annual standard deviation (PDSI)	0.570**	0.616**	0.502**	0.475**	0.618**
	(0.236)	(0.263)	(0.199)	(0.188)	(0.242)
R-squared	0.337	0.378	0.292	0.255	0.421
	Panel B. Ancestral instability of the second moment of PDSI				
Climatic instability of annual standard deviation (PDSI)	**-2.164****	**-2.306****	**-1.952****	**-1.791****	**-2.673*****
	(0.960)	**(1.029)**	**(0.865)**	**(0.808)**	**(0.988)**
Annual standard deviation (PDSI)	0.809***	0.868***	0.720***	0.673***	0.921***
	(0.274)	(0.301)	(0.235)	(0.222)	(0.267)
R-squared	0.348	0.388	0.303	0.265	0.434
	Both Panels				
Ethnicity-level controls	yes	yes	yes	yes	yes
Individual controls	yes	yes	yes	yes	yes
Number of ethnic groups	77	77	73	72	62
Number of clusters (grid cells)	75	75	71	70	62
Mean (st. dev.) of dependent variable	0.189 (0.392)	0.206 (0.405)	0.161 (0.367)	0.138 (0.345)	0.262 (0.440)
Observations	121,482	75,015	46,467	37,895	8,572

Notes: OLS estimates are reported with standard errors clustered at the level of the climatic grid cell in parentheses. The unit of observation is a person who identifies him/herself as a Native American. The dependent variable is an indicator that equals one if the person speaks an Indigenous (Native American) language at home. All specification include the following covariates: a quadratic in age, a gender indicator, employment-status fixed effects, an indicator for being married, metropolitan-area fixed effects, and an indicator for whether the individual has any education. The nomadic ethnicities excluded from the sample are Assiniboin, Blackfoot, Cheyenne, Comanche, and Gros Ventre. In Panel A, the mean (and standard deviation) of Climatic instability is 0.58 (0.20). In Panel B, the mean (and standard deviation) of the Climatic instability of the annual standard deviation is 0.35 (0.12). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A31: Whether Indigenous populations of the United States speak their traditional language at home: Individual-level estimates, PDSI-based climate measures, dropping nomadic or semi-nomadic tribes

	(1)	(2)	(3)	(4)	(5)
	Dep variable: Indicator for speaking an Indigenous language at home				
		Not living with	Living with parents		
	All individuals	parents	All ages	18 or younger	Over 18
	Panel A. Ancestral instability of the first moment of PDSI				
Climatic instability (PDSI)	**-0.748****	**-0.871****	**-0.586****	**-0.544****	**-0.761***
	(0.335)	**(0.382)**	**(0.274)**	**(0.252)**	**(0.391)**
Annual standard deviation (PDSI)	0.577***	0.630***	0.503***	0.480***	0.599***
	(0.184)	(0.203)	(0.160)	(0.151)	(0.198)
R-squared	0.393	0.444	0.334	0.297	0.463
	Panel B. Ancestral instability of the second moment of PDSI				
Climatic instability of annual standard deviation (PDSI)	**-2.730*****	**-3.048*****	**-2.297*****	**-2.145*****	**-2.979*****
	(0.602)	**(0.641)**	**(0.557)**	**(0.514)**	**(0.685)**
Annual standard deviation (PDSI)	0.933***	1.025***	0.807***	0.765***	0.992***
	(0.172)	(0.181)	(0.158)	(0.150)	(0.183)
R-squared	0.416	0.469	0.354	0.316	0.484
	Both Panels				
Ethnicity-level controls	yes	yes	yes	yes	yes
Individual controls	yes	yes	yes	yes	yes
Number of ethnic groups	50	50	46	46	40
Number of clusters (grid cells)	49	49	45	45	40
Mean (st. dev.) of dependent variable	0.207 (0.405)	0.225 (0.417)	0.179 (0.384)	0.154 (0.361)	0.289 (0.453)
Observations	105,872	65,563	40,309	32,748	7,561

Notes: OLS estimates are reported with standard errors clustered at the level of the climatic grid cell in parentheses. The unit of observation is a person who identifies him/herself as a Native American. The dependent variable is an indicator that equals one if the person speaks an Indigenous (Native American) language at home. All specification include the following covariates: a quadratic in age, a gender indicator, employment-status fixed effects, an indicator for being married, metropolitan-area fixed effects, and an indicator for whether the individual has any education. The nomadic and semi-nomadic ethnicities excluded from the sample are Achomawi, Arapaho, Assiniboi, Bannock, Blackfoot, Cahuilla, Chemehuev, Cheyenne, Chippewa, Coeur D'Alene, Comanche, Crow, East Cree, Flathead, Gosiute, Gros Ventre, Kalispel, Kidutokad, Kiowa, Klallam, Klamath, Kutenai, Lummi, Modoc, Nezperce, Quinault, South Ute, Santee, Teton, Umatilla, Washo, and Wintu. In Panel A, the mean (and standard deviation) of Climatic instability is 0.58 (0.20). In Panel B, the mean (and standard deviation) of the Climatic instability of the annual standard deviation is: 0.35 (0.12). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A32: Whether Indigenous populations of Canada and the United States speak their traditional language. Ethnicity-level estimates, PDSI-based climate measures, dropping nomadic tribes

	(1)	(2)	(3)	(4)	(5)
	United States	**Canada**			**U.S. & Canada**
	Indigenous language is spoken at home	Indigenous language is mother tongue	Indigenous language is spoken at home	Conversational in Indigenous language	Indigenous language is spoken at home
	Panel A. Ancestral instability of the first moment of PDSI				
Climatic instability (PDSI)	**-3.271****	**-1.936**	**-3.164****	**-1.453**	**-3.254*****
	(1.342)	**(1.443)**	**(1.604)**	**(1.104)**	**(1.220)**
Annual standard deviation (PDSI)	3.134***	0.692*	0.815*	0.629***	3.071***
	(0.855)	(0.418)	(0.464)	(0.187)	(0.842)
	Panel B. Ancestral instability of the second moment of PDSI				
Climatic instability of annual standard deviation (PDSI)	**-8.425****	**-8.606*****	**-9.525*****	**-5.535*****	**-8.522****
	(4.173)	**(1.402)**	**(2.485)**	**(1.320)**	**(4.014)**
Annual standard deviation (PDSI)	3.689***	2.464***	2.471***	1.671***	3.660***
	(1.005)	(0.328)	(0.717)	(0.252)	(0.995)
	Both Panels				
Ethnicity-level controls	yes	yes	yes	yes	yes
Location FE	yes	yes	yes	yes	yes
Survey-year FE	yes	yes	yes	yes	yes
Number of ethnic groups	75	26	26	26	93
Number of clusters (grid cells)	73	25	25	25	89
Mean (st. dev.) of dependent variable	0.043 (0.150)	0.202 (0.202)	0.168 (0.197)	0.247 (0.209)	0.055 (0.160)
Observations (ethnicity-year-location)	2,842	309	309	309	3,151

Notes: Poisson estimates are reported with standard errors clustered at the grid-cell level in parentheses. The unit of observation is an Indigenous ethnic group (from the U.S. and/or Canada), in a location, and observed in a census survey. The dependent variables are different measures of the fraction of people who can speak their traditional language. The American sample includes data from the 1930, 1990, and 2000 Censuses. The Canadian sample includes data from the 2001, 2006, and 2011 Censuses. The nomadic ethnicities excluded from the sample are Assiniboin, Blackfoot, Cheyenne, Comanche, Gros Ventre, and Plains Cree. In Panel A, the mean (and standard deviation) of Climatic instability is: 0.66 (0.21). In Panel B, the mean (and standard deviation) of the Climatic instability of the annual standard deviation is: 0.36 (0.12). *, ** and *** indicate significance at the 10, 5 and 1% levels.

Table A33: Whether Indigenous populations of Canada and the United States speak their traditional language. Ethnicity-level estimates, PDSI-based climate measures, dropping nomadic or semi-nomadic tribes

	(1)	(2)	(3)	(4)	(5)
	United States	**Canada**			**U.S. & Canada**
	Indigenous language is spoken at home	Indigenous language is mother tongue	Indigenous language is spoken at home	Conversational in Indigenous language	Indigenous language is spoken at home
	Panel A. Ancestral instability of the first moment of PDSI				
Climatic instability (PDSI)	**-4.433*** **	**-3.586*** **	**-1.804*** **	**-1.326*** **	**-4.263*** **
	(1.240)	**(0.007)**	**(0.012)**	**(0.007)**	**(1.083)**
Annual standard deviation (PDSI)	3.219***	-0.413***	-2.500***	-1.027***	3.154***
	(0.524)	(0.078)	(0.141)	(0.080)	(0.503)
	Panel B. Ancestral instability of the second moment of PDSI				
Climatic instability of annual standard deviation (PDSI)	**-12.492*** **	**-9.593*** **	**-4.827*** **	**-3.547*** **	**-11.823*** **
	(2.152)	**(0.018)**	**(0.033)**	**(0.018)**	**(1.761)**
Annual standard deviation (PDSI)	4.266***	2.079***	-1.246***	-0.106	4.131***
	(0.402)	(0.083)	(0.149)	(0.084)	(0.347)
	Both Panels				
Ethnicity-level controls	yes	yes	yes	yes	yes
Location FE	yes	yes	yes	yes	yes
Survey-year FE	yes	yes	yes	yes	yes
Number of ethnic groups	49	17	17	17	60
Number of clusters (grid cells)	48	17	17	17	59
Mean (st. dev.) of dependent variable	0.044 (0.152)	0.116 (0.096)	0.085 (0.085)	0.151 (0.112)	0.046 (0.150)
Observations (ethnicity-year-location)	2,417	110	110	110	2,527

Notes: Poisson estimates are reported with standard errors clustered at the grid-cell level in parentheses. The unit of observation is an Indigenous ethnic group (from the U.S. and/or Canada), in a location, and observed in a census survey. The dependent variables are different measures of the fraction of people who can speak their traditional language. The American sample includes data from the 1930, 1990, and 2000 Censuses. The Canadian sample includes data from the 2001, 2006, and 2011 Censuses. The nomadic and semi-nomadic ethnicities excluded from the sample are Achomawi, Arapaho, Assiniboin, Bannock, Blackfoot, Cahuilla, Chemehuev, Cheyenne, Chippewa, Coeur D'Alene, Comanche, Crow, E Cree, Flathead, Gosiute, Gros Ventre, Kalispel, Kidutokad, Kiowa, Klallam, Klamath, Kutenai, Lummi, Modoc, Nezperce, Quinault, South Ute, Santee, Teton, Umatilla, Washo, and Wintu. In Panel A, the mean (and standard deviation) of Climatic instability is: 0.66 (0.21). In Panel B, the mean (and standard deviation) of the Climatic instability of the annual standard deviation is: 0.36 (0.12). *, ** and *** indicate significance at the 10, 5, and 1% levels.

Table A34: Education and the importance of tradition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Importance of tradition	In-group marriage of women		In-group marriage of men		Speaking foreign language at home	Speaking an Indigenous language
		Father's country	Mother's country	Father's country	Mother's country		
High school indicator	-0.033**	-0.087***	-0.101***	-0.062*	-0.072**	-0.058***	-0.051***
	(0.016)	(0.027)	(0.025)	(0.034)	(0.029)	(0.017)	(0.012)
Some college or more indicator	-0.103***	-0.162***	-0.178***	-0.104***	-0.126***	-0.063**	-0.071**
	(0.028)	(0.039)	(0.041)	(0.039)	(0.037)	(0.025)	(0.022)

Notes: The table reports coefficient estimates for education indicator variables. The specifications reported are (in order): column 4 of Table 2, columns 1-4 of Table 5, column 1 of Table 6, and column 1 of Table 8. For this last specification, we restrict our sample to the 1990 and 2000 Censuses because the 1930 Census only contains a yes/no question on literacy. *, ** and *** indicate significance at the 10, 5, and 1% levels.

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