Food Variability and Preferences for Redistribution: Storage, Sedentarism, and Inequality

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MOTIVATION

▶ In political economy models, voters' position in the income distribution predicts redistributive preferences (Meltzer and Richards, 1981)

▶ However, this prediction is clearly at odds with reality (Alesina and Glaeser, 2004; Shelton, 2007; Kenworthy and McCall, 2008; Dallinger, 2010)

▶ Preferences for redistribution are determined by personal characteristics (e.g. socioeconomic status), but they are also a product of history, culture, etc. (Alesina and Giuliano, 2011)

▶ Preferences traits may have formed thousands of years ago and reinforced over time (Galor and Moav, 2002)

This paper

▶ We generate a potentially exogenous measure of the spatial distribution of food which is not affected by the Neolithic Revolution

▶ From contemporaneous survey data (WVS, ESS, and GSS) we focus on questions related to preferences for redistribution

▶ Using a sample of migrants we find that countries where the spatial distribution of food is more unequal display preferences for lower levels of redistribution

▶ The effect is robust across different surveys and model specifications

▶ There is no effect on other traits - time preferences, risk aversion, welfare

▶ Crops

MECHANISM

▶ The association is the result of two self-reinforcing channels

1. **Social complexity and inequality among HFG**

   - A more unequal distribution of food among hunter-gathering (HFG) societies leads to storage, sedentarim, social complexity and therefore inequality

2. **Transition to Agriculture**

   - A more unequal spatial distribution of food causes an earlier transition to agriculture

▶ The effect of these self-reinforcing channels on inequality is confirmed when we use data from archeological sites

TOLERANCE FOR INEQUALITY

TOLERANCE

▶ Societies in areas where the spatial distribution is more unequal have a longer history of exposure to inequality

▶ This leads to an adaptation strategy and acceptance of larger differences in income

1. **Data on morality from SESHAT Databank**
   - Lower probability of religious doctrines and philosophical statements that make claims about equality in polities where storage sites are present

2. **Data on oral tradition from Michalopoulos and Xue (2021)**
   - An unequal spatial distribution of food is associated:
   - Positively with: Storage, Merit, Hardworking, Income, Earnings, Working Class, Food, Famine, Starvation, Season, and Greedy
   - Negatively with: Welfare, Assistance, Subsidize, Migration and Migrant

LITERATURE

▶ According to Binford (1980)'s ecological approach to adaptation, hunter-gatherers are characterized by two different **adaptation strategies:**

  1. **Foragers** show minimal dependence upon food storage and a high degree of mobility to meet daily food requirements

  2. **Collectors** store large amounts of food to respond to temporal and spatial variation in resources and make infrequent residential moves

▶ These differences are influenced by food variability, which is in turn related to total amount and yearly distribution of solar radiation

LITERATURE

▶ **Economic impact of biogeograpy in the very long run**:

Diamond (1997), Galor and Moav (2002), Olsson and Hibbs (2005), Lagerlof (2007), Andersen, Dalgaard and Selaya (2016), Galor (2022), Matranga (2022), Mayshar, Moav and Pascali (2022)

▶ **Archeological and anthropological background**:

Binford (1980), Testart (1982), Kelly (1983), Johnson (2014)

▶ **Origins of preferences for redistribution**:

Benabou (2000), Benabou and Ok (2001), Alesina and La Ferrara (2005), Alesina and Angeletos (2005), Benabou and Tirole (2006), Alesina and Fuchs-Schundeln (2007), Alesina and Giuliano (2011), Durante, Putterman and Weele (2014), Ashok, Kuziemko and Washington (2015), Lockwood and Weinzierl (2015), Alesina, Stantcheva and Teso (2018)

▶ **Ancient origins of preferences**:

Galor and Ozak (2016), Litina (2016), Falk et al. (2018), Becker, Enke and Falk (2020)

DATA - CROP WILD RELATIVES

▶ Data on **crop wild relatives**, i.e. undomesticated plant species that are genetically related to cultivated crops, from *Global Biodiversity Information Facility*

▶ Count the number of species present at given coordinates and interpolate the data to obtain the distribution of WRs around the world

▶ Divide the world into $0.5^{\circ} \times 0.5^{\circ}$ grid cells to obtain measures of intensity (mean) and **variability** (either SD or coefficient of variation) of species within each cell

▶ Spatially merge pre-modern societies with the distribution of WRs at cell level

▶ For the part related to contemporary preferences, aggregate at country level (i.e. the average within the cells of a country)

▶ WR ▶ Interpolation ▶ Fishnet ▶ Variability

CONTEMPORARY PREFERENCES

▶ **Individual**-level survey data on **preferences for redistribution**:

- World Value Survey (WVS)
- $\approx$ 7,000 first and second generation migrants from 122 countries
- "*Essential Characteristics of Democracy: The State Makes People's Incomes Equal*"

▶ Using the migrants sample we estimate:

$$P_{i,c,t,a} = \alpha_0 + \beta \; V_a + \gamma_c + \delta_t + X'_{i,c,t,a} \; \Theta + Y'_a \; \Gamma + \epsilon_{i,c,t,a}$$

▶ $P_{i,c,t,a}$: **preferences for redistribution** of individual i living in country c at time t, originating from country a

▶ V_a : **food variability** in the originating county a

▶ Standard errors clustered at wave $\times$ current/origin country level

CONTEMPORARY PREFERENCES FOR REDISTRIBUTION: WVS

	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)
			Make People Incomes Equal		
Std Dev Wild Relatives	-0.0693 (0.0241)*** [0.0237]***	-0.1989 (0.0986)** [0.0996]**			
CV Wild Relatives			-0.0407 (0.0176)** [0.0207]**	-0.2639 (0.1342)** [0.1539]*	
Solar Radiation					0.0936 (0.0474)** [0.0471]**
Individual Controls	Yes	Yes	Yes	Yes	Yes
Origin Geo. Controls	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.086	0.082	0.085	0.067	0.085
Observations	6820	6820	6820	6820	6820
Current Countries	53	53	53	53	53
F-stat		36.58		11.56	
		Crop Variability		Crop Variability	
Solar Radiation		-0.4709 (0.0779)*** [0.1240]***		-0.3772 (0.1109)*** [0.1525]**	

Note: The unit of observation is an individual. Individual controls include Age and Gender. Geographical controls include: Temperature, Precipitation, Elevation, Ruggedness, Distance from Water Bodies, Crop Intensity, Population Density in 1500, Latitude, Longitude, and Descendants from Ancestors Who Lived in the County before Columbus. Robust standard errors adjusted for clustering at the current country-year level in parentheses and at the origin country-year level in square

EXTENSIONS AND ROBUSTNESS

▶ Alternative surveys

- ESS: *Government should reduce differences in income levels* ▸ ESS
- GSS: *Should government reduce income differences?* ▸ GSS

▶ Add further individual level controls

▶ Change dependent variable with proxies for long-term orientation and risk aversion
▸ Falsifications

- "*Do you generally plan for your future or just take each day as it comes?*"
  (Time preferences)

- "*I look for adventures and like to take risks. I want to have an exciting life*"
  (Risk attitudes)

Channel One
Social Complexity and Inequality among HFG

▸ Sample ▸ Storage ▸ Mobility

- ▶ We merge three datasets:

    - *Ethnographic Atlas* (Murdock, 1967)
    - *Binford Hunter-Gatherer dataset* (Binford, 1981)
    - *Western Northern American Indian dataset* (Jorgensen, 1980)

- ▶ We estimate an OLS model to look at the effect of food variability on storage/nomadism

- ▶ We then test the effect of storage/nomadism on social complexity and inequality

$$Y_i = \alpha_0 + \beta \ V_i + G_i'\Lambda + \epsilon_i$$

- ▶ Y_i : **storage, nomadism, social complexity, inequality** for group i

- ▶ V_i : either a measure of wild **food variability** or **storage/nomadism** for group i

FOOD VARIABILITY, STORAGE AND NOMADISM: OLS

	(1) Food Storage	(2) Food Storage	(3) Food Storage	(4) Food Storage
Coefficient of Variation of WRs	0.105***	0.055***	0.105***	0.055***
	(0.020)	(0.015)	(0.033)	(0.018)
Adj.R-squared	0.053	0.660		
Observations	353	353	353	353
Sample Mean	0.694	0.694	0.694	0.694
Geo Controls	No	Yes	No	Yes
Conley Std Err	No	No	Yes	Yes

	(1) Nomadic	(2) Nomadic	(3) Nomadic	(4) Nomadic
Coefficient of Variation of WRs	-0.038***	-0.043***	-0.038***	-0.043***
	(0.006)	(0.007)	(0.009)	(0.010)
Adj.R-squared	0.017	0.078		
Observations	1295	1295	1295	1295
Sample Mean	0.087	0.087	0.088	0.088
Geo Controls	No	Yes	No	Yes
Conley Std Err	No	No	Yes	Yes

Note: The unit of observation is an ethnic group. Geographical controls include: Temperature, Daily Temperature Range, Precipitation, Elevation, Ruggedness, Rivers and Basins, and Distance from the Coast. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

▶ IV

POPULATION DENSITY, SOCIAL COMPLEXITY AND INEQUALITY: OLS

	(1) Population>100	(2) Hierarchy	(3) Slavery	(4) Inequality
Food Storage	0.090**	0.194**	0.274***	0.479***
	(0.040)	(0.085)	(0.073)	(0.081)
	(0.047)	(0.099)	(0.103)	(0.098)
Adj.R-squared	0.048	0.110	0.321	0.319
Observations	243	359	360	337
Sample Mean	0.033	0.805	0.194	0.344
Geo Controls	Yes	Yes	Yes	Yes
	(1) Population>100	(2) Hierarchy	(3) Slavery	(4) Inequality
Nomadic	-0.449***	-0.156***	-0.278***	-0.206***
	(0.036)	(0.050)	(0.042)	(0.048)
	(0.059)	(0.064)	(0.060)	(0.061)
Adj.R-squared	0.239	0.066	0.116	0.050
Observations	701	1268	1201	1173
Sample Mean	0.485	0.696	0.456	0.501
Geo Controls	Yes	Yes	Yes	Yes

Note: The unit of observation is an ethnic group. Geographical controls include: Temperature, Daily Temperature Range, Precipitation, Elevation, Ruggedness, Rivers and Basins, Distance from the Coast, and Crop Intensity. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

▶ IV

CHANNEL TWO
TRANSITION TO AGRICULTURE

▶ We use data on the Transition to Agriculture from Putterman (2008) and estimate a simple cross-country model:

$$Y_i = \alpha_0 + \beta \ V_i + G_i' \Lambda + \epsilon_i$$

▶ Y_i is the year of the transition to agriculture (years before 2000)

▶ V_i is the coefficient of variation of WRs

	Year B.P. (P=2000)		
	(1)	(2)	(3)
CV Wild Relatives	510.923	432.592	501.275
	(232.916)**	(142.259)***	(135.362)***
Adjusted R^2	0.027	0.631	0.732
Observations	152	152	152
Region FE	No	Yes	Yes
Geographical Controls	No	No	Yes

Note: The unit of observation is a country. Geographical controls include: Temperature, Daily Temperature Range, Precipitation, Elevation, Ruggedness, Rivers and Basins, and Distance from the Coast. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

EVIDENCE FROM ARCHAEOLOGICAL SITES

- ▶ **Bowles and Fochesato (2022)**
  - Gini index computed from house-size distribution in 124 archeological sites (146 observations)
  - Sites/groups both from the Old World and Americas from 21,000 BC to 1700 AD
  - We georeference this data using Google Earth using name of site/region - generate buffers around and compute spatial variability as before

- ▶ **Basri and Lawrence (2020)**:
  - Gini index computed from household composition in 36 sites in the Near East
  - 54 observations from 9850 to 700 BC
  - We merge this data with carbon dated number of wild and domesticated crops from ADEMNES for the same archeological sites.

  ▸ Archeological Data I   ▸ Archeological Data II

1. MOTIVATION

2. THIS PAPER

3. LITERATURE

4. DATA

5. CONTEMPORARY PREFERENCES FOR REDISTRIBUTION

6. CHANNELS

7. INEQUALITY, MORALITY AND FOLKLORE

8. CONCLUSIONS

Inequality, Morality and Folklore

▶ **Seshat Databank**

- Data on preindustrial polities between Neolithic and Industrial Revolutions
- 35 natural geographic areas across the globe, stratified by 10 world regions and 3 levels of antiquity
- 360 polities sampled
- It provides data on religious doctrines, philosophical statements, or practices that makes claim about equality, public good, prosociality, etc.

▶ **Folklore**

- Data on oral traditions from Michalopoulos and Xue (2021)
- Study the relevance and recurrence of certain motifs related to preference traits
- Employable at both pre-modern society level and contemporary country level
- We use the data at country level to link folklore to the demand for redistribution

FOOD STORAGE AND MORAL EQUALITY
PREINDUSTRIAL POLITIES EVIDENCE

	(1)	(2)	(3)	(4)
	Moral Statements About			
	Equality	No Class	Settlement Extent	Population
Storage Site	-0.5169**	-0.6094**	1.7881***	2.1831**
	(0.2286)	(0.2342)	(0.5609)	(0.9000)
Sample Mean				
Observations	163	146	126	146

Note: The unit of observation is an ethnic group. Controls include: Peak Year, Length of Time the Polity Has Existed, and Settlement Hierarchy. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

▸ Falsification

FOOD VARIABILITY AND FOLKLORE

Motives	Coefficient of Variation	R^2	Coefficient of Variation	R^2
Food related	0.030*	0.126	0.032*	0.189
t-value	(1.657)		(1.845)	
Income related	0.148***	0.227	0.089*	0.388
t-value	(2.338)		(1.737)	
Welfare related	-0.024	0.194	-0.051*	0.355
t-value	(-0.600)		(-1.665)	
Assistance related	-0.026	0.212	-0.028*	0.380
t-value	(-1.375)		(-1.869)	
Storage related	0.162***	0.265	0.122***	0.360
t-value	(2.527)		(2.041)	
Merit related	0.139***	0.181	0.125*	0.191
t-value	(2.057)		(1.762)	
Migration related	-0.117***	0.279	-0.109***	0.412
t-value	(-3.425)		(-3.328)	
Migrant related	-0.066	0.179	-0.118***	0.376
t-value	(-0.862)		(-1.987)	
Low Income related	0.041	0.068	0.050*	0.092
t-value	(1.650)		(1.933)	
Subsidize related	-0.124	0.115	-0.145***	0.335
t-value	(-1.508)		(-2.373)	
Working Class related	0.069***	0.184	0.054***	0.354
t-value	(2.368)		(2.055)	
Famine related	0.061***	0.145	0.060***	0.220
t-value	(2.692)		(2.542)	
Hardworking related	0.164***	0.139	0.166***	0.203
t-value	(2.433)		(2.136)	
Greedy related	0.227***	0.182	0.173***	0.254
t-value	(2.856)		(2.295)	
Starvation related	0.066***	0.163	0.063***	0.254
t-value	(2.899)		(2.778)	
Season related	0.071***	0.122	0.036	0.211
t-value	(2.174)		(1.258)	
Earnings related	0.134***	0.204	0.085	0.305
t-value	(2.127)		(1.573)	
Shortage related	0.095*	0.205	0.081	0.254
t-value	(1.787)		(1.380)	
Scarcity related	0.092*	0.204	0.077	0.250
t-value	(1.735)		(1.326)	
Internalize related	0.066*	0.281	0.049	0.415
t-value	(1.930)		(1.584)	

Included Controls: Temperature, Precipitation, Distance from the Coast and Water Bodies, Elevation, and Ruggedness.
Model 2 includes UN Continent Fixed Effects. Robust Standard Errors in Parenthesis. *** p<0.01, ** p<0.05, *p<0.1.

CONCLUSION

▶ Consistent with an evolutionary approach to preference formation, we show that regional variations in the environment in the distant past have contributed to the formation of specific cultural traits
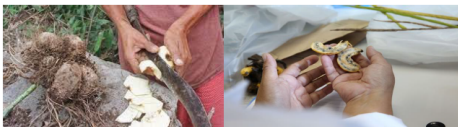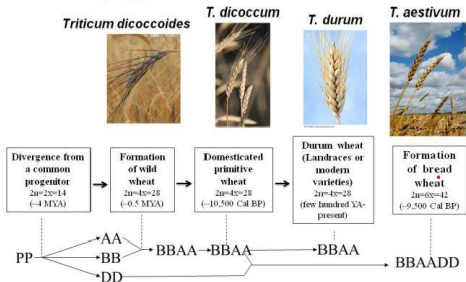
▶ More specifically:

   • We find that food variability affects storage and sedentarism

   • Storage/sedentarism affect social complexity, inequality and acceptance of inequality

   • This process has shaped contemporary preferences for redistribution

Thank you for your attention

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WILD RELATIVES OF DOMESTICATED CROPS

TOLERANCE OF INEQUALITY

	1	2	3
		Income Distribution is Fair	
Ancestral Inequality	0.1161	0.1695	0.4687
	(0.0511)**	(0.0602)**	(0.1326)***
Adjusted R^2	0.037	0.037	0.059
Observations	33599	31567	31567
Current Countries	24	22	22
WB Region FE	Yes	Yes	Yes
Population	Yes	Yes	Yes
Share Ancestor in 1500	No	Yes	Yes
Geographical Controls	No	No	Yes

	1	2	3
		Income Differences are Large	
Ancestral Inequality	-0.0941	-0.2029	-0.2270
	(0.0948)	(0.1250)	(0.1020)**
Adjusted R^2	0.022	0.035	0.049
Observations	35762	33642	33642
Current Countries	24	22	22
WB Region FE	Yes	Yes	Yes
Population	Yes	Yes	Yes
Share Ancestor in 1500	No	Yes	Yes
Geographical Controls	No	No	Yes

Note: The unit of observation is an individual. Geographical controls include: Population Temperature, Precipitation, Elevation, Ruggedness, and Descendants from Ancestors who Lived in the County before Columbus. Robust standard errors adjusted for clustering at the current country-year level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Wild relatives of domesticated crops

Countries
· WRs
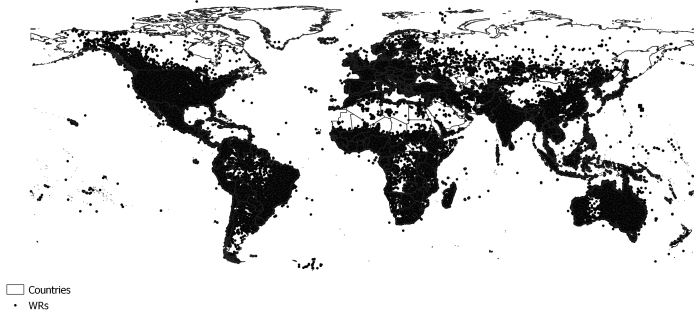
Wild relatives of domesticated crops: Intensity

Countries

WRs
Band 1 (Gray)
1
0.573286
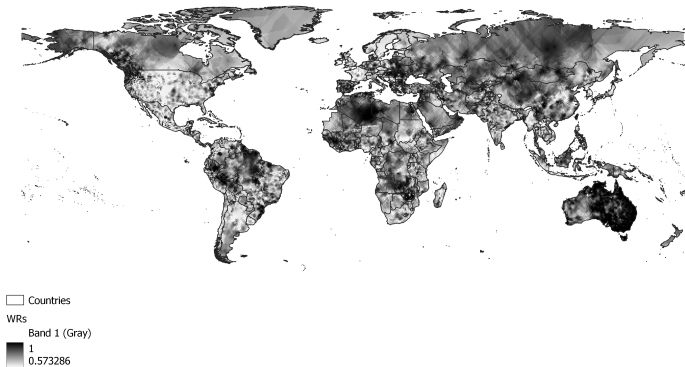
WILD RELATIVES OF DOMESTICATED CROPS
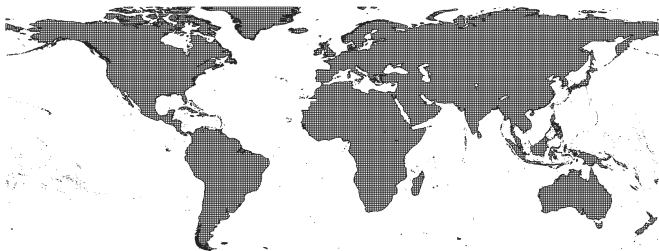
Wild relatives of domesticated crops: Variability

Crop Variability
High : 0.190401

Low : 0
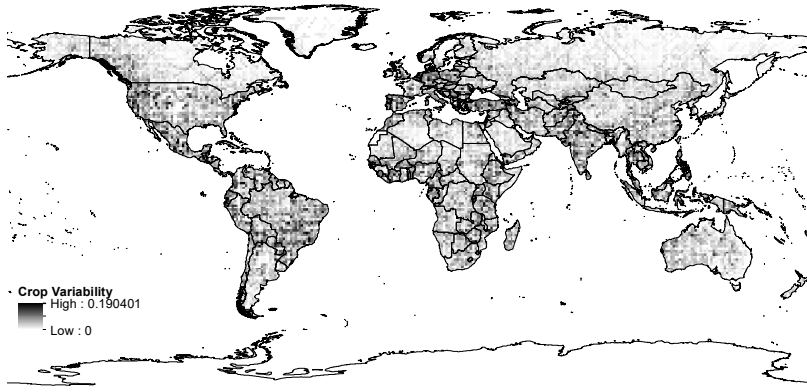
◄ Go Back

SUMMARY STATISTICS I ◂ GO BACK

	Mean	S.D.	Min	Max	N
Individual level					
Government Should Reduce Income Differences	0.41	0.17	0	1	65007
Age	47.24	17.67	13	114	65007
Female	0.54	0.50	0	1	65007
Country level					
Crop Variability	0.32	0.20	0	1	170
Solar Radiation	16378.38	3592.79	7453	22012	170
Temperature	18.06	8.84	-19	28	170
Precipitation	1124.72	758.98	20	3403	170
Elevation	540.85	505.53	-53	2948	170
Ruggedness	185.32	161.96	10	755	170
Distance from Water Bodies	15.76	21.35	0	174	170
Crop Intensity	0.46	0.21	0	1	170
Population Density 1500	8.54	12.90	0	72	170

CONTEMPORARY PREFERENCES FOR REDISTRIBUTION: ESS ◂ GO BACK

		Reduce income differences			
	OLS	IV	OLS	IV	OLS
WRs Variability	-0.0020	-0.1281			
	(0.0133)	(0.0458)***			
	[0.0127]	[0.0721]*			
Coefficient of Variation Crops			-0.4131	-5.7945	
			(0.5876)	(2.0920)***	
			[0.5392]	[3.2431]*	
Solar Radiation					0.0597
					(0.0208)***
					[0.0271]**
Individual Controls	Yes	Yes	Yes	Yes	Yes
Origin Geo. Controls	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.070	0.064	0.070	0.065	0.070
Observations	30962	30962	30962	30962	30962
Current Countries	159	159	159	159	159
F-stat		76.26		82.61	

	WRs Variability	Coeff. of Var. WRs
Solar Radiation	-0.4659	-0.0100
	(0.0534)***	(0.0011)***
	[0.1180]***	[0.0024]***

Note: The unit of observation is an individual. Individual controls include Age and Gender. Geographical controls include: Temperature, Precipitation, Elevation, Ruggedness, Distance from Water Bodies, Crop Intensity, Population Density in 1500, Latitude, Longitude, and Descendants from Ancestors who Lived in the County before Columbus. Robust standard errors ad

CONTEMPORARY PREFERENCES FOR REDISTRIBUTION: GSS ◀ GO BACK

			Reduce income differences		
	OLS	IV	OLS	IV	OLS
Wrs Variability	-0.0610***	-0.1407***			
	(0.0199)	(0.0284)			
Coefficient of Variation Wrs			-1.7099***	-3.6396***	
			(0.6060)	(0.7800)	
Solar Radiation					0.2259***
					(0.0443)
Individual Controls	Yes	Yes	Yes	Yes	Yes
Origin Geo. Controls	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.086	0.082	0.085	0.068	0.086
Observations	6808	6808	6808	6808	6808
Current Countries	53	53	53	53	53
F-stat		25.21		8.62	

	WRs Variability	Coeff. of Var. WRs
Solar Radiation	-1.605***	-0.043***
	(0.0688)	(0.0026)

Note: The unit of observation is an individual. Individual controls include Age and Gender. Geographical controls include: Temperature, Precipitation, Elevation, Ruggedness, Distance from Water Bodies, Crop Intensity, Population Density in 1500, Latitude, Longitude, and Descendants from Ancestors who Lived in the County before Columbus. Robust standard errors adjusted for clustering at the region-year level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
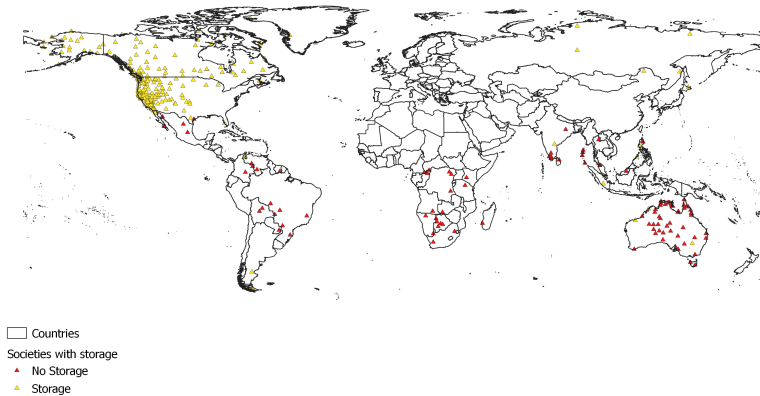
FALSIFICATIONS: ESS ◂ GO BACK

	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)
			Long-term orientation		
Crop Variability	0.0071 (0.0208)	0.1348 (0.0927)			
Coefficient of Variation Crops			0.1884 (0.9231)	6.5619 (4.4433)	
Solar Radiation					-0.0749 (0.0452)*
Individual Controls	Yes	Yes	Yes	Yes	Yes
Origin Geo. Controls	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.052	0.047	0.052	0.045	0.052
Observations	7092	7092	7092	7092	7092
Current Countries	237	237	237	237	237

	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)
			Risk aversion		
Crop Variability	0.0004 (0.0109)	-0.0355 (0.0493)			
Coefficient of Variation Crops			0.1963 (0.4767)	-1.9160 (2.3107)	
Solar Radiation					0.0165 (0.0225)
Individual Controls	Yes	Yes	Yes	Yes	Yes
Origin Geo. Controls	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes

THE SAMPLE OF PREINDUSTRIAL SOCIETIES

◂ Go Back

STORAGE

◀ GO BACK

Countries

Societies with storage
▲ No Storage
▲ Storage

MOBILITY ◂ GO BACK

Countries

Societies
- ● Nomadic
- ○ Sedentary
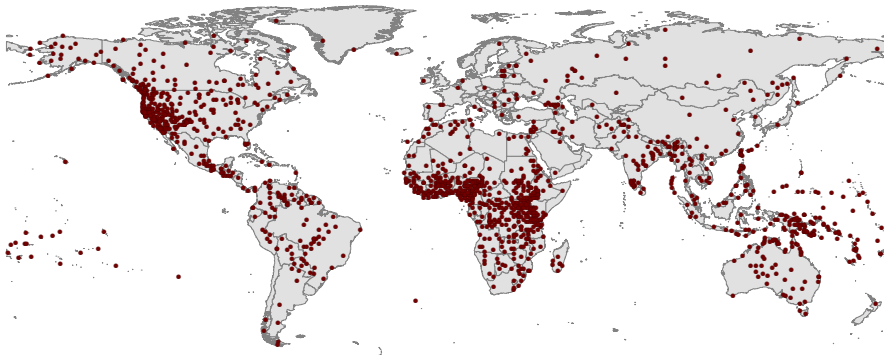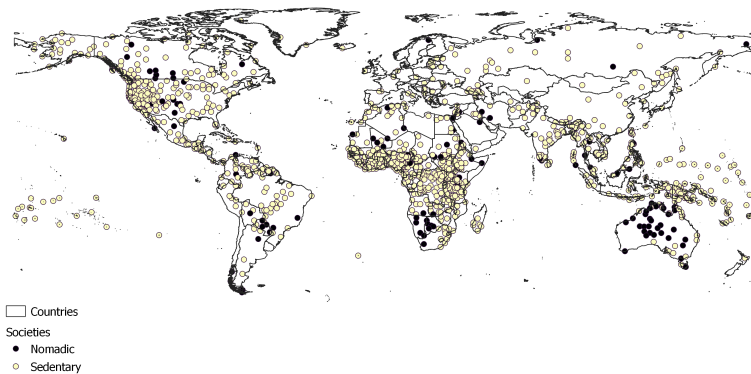
IV

	(1) Food Storage	(2) Nomadic
Coefficient of Variation of WRs	0.254** (0.107)	-0.280*** (0.061)
Adj.R-squared	0.509	-0.553
Observations	353	1295
Sample Mean	0.210	0.087
F-stat	15.411	43.048
Geo Controls	Yes	Yes
	Coefficient of Variation of WRs	Coefficient of Variation of WRs
Solar Radiation	-0.3862*** (0.0984)	-0.3176*** (0.0484)

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

◂ Go Back

IV

	(1) Population>100	(2) Hierarchy	(3) Slavery	(4) Inequality
Food Storage	-0.021	1.044*	1.815***	3.102***
	(0.115)	(0.539)	(0.642)	(1.037)
Adj.R-squared	0.019	-0.233	-0.809	-1.993
Observations	243	359	360	337
Sample Mean	0.033	0.805	0.194	0.344
Geo Controls	Yes	Yes	Yes	Yes
F-test	11.753	8.067	8.122	7.238
	(1) Population>100	(2) Hierarchy	(3) Slavery	(4) Inequality
Nomadic	-0.803**	-0.040	-2.254***	-0.609*
	(0.322)	(0.287)	(0.455)	(0.324)
Adj.R-squared	0.191	0.062	-1.113	-0.002
Observations	701	1268	1201	1173
Sample Mean	0.485	0.696	0.456	0.501
Geo Controls	Yes	Yes	Yes	Yes
F-test	23.657	33.198	30.465	28.083

Note: Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

ARCHAEOLOGICAL EVIDENCE FROM AROUND THE WORLD ◂ GO BACK

	(1)	(2)	(3)	(4)	(5)
			Standardized Gini (Pop Adjusted)		
Coefficient of Variation	0.2738***	0.2747***	0.2136***	1.0137***	0.9296***
	(0.0926)	(0.0733)	(0.0640)	(0.2464)	(0.2541)
Neolithic Revolution Dummy	0.9081**	0.1872	0.7454***	-0.1899	-0.3079
	(0.3510)	(0.3234)	(0.2453)	(0.3465)	(0.3561)
Year Linear Trend		0.0002***	0.0002***	0.0003***	0.0003***
		(0.0001)	(0.0000)	(0.0001)	(0.0001)
Year*Neolithic Rev			0.0002***		
			(0.0001)		
Coeff of Variation*Neolithic Rev				-0.7889***	-0.6909***
				(0.2438)	(0.2459)
Adj.R-squared	0.240	0.371	0.424	0.393	0.445
Observations	146	146	146	146	146
Sample Mean	.3147128	.3147128	.3147128	.3147128	.3147128
Number of Households	No	No	No	No	Yes
Zero Wealth Adjusted	No	No	No	No	Yes
Couples Adjusted	No	No	No	No	Yes

Note: The unit of observation is an archaeological site. Controls include: Latitude, Longitude and dummies for North and South America (New World) and Middle East. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

ARCHAEOLOGICAL EVIDENCE FROM THE NEAR EAST ◂ GO BACK

	(1)	(2)	(3)	(4)
		Standardized Gini		
Wild Crops/Site Size (Log)	-0.3043**	-0.4234**	-0.4242**	-0.5748***
	(0.1318)	(0.1856)	(0.1841)	(0.1719)
Year	0.0004**	0.0004***	0.0005***	0.0006***
	(0.0002)	(0.0002)	(0.0002)	(0.0001)
Wild Crops*Year	-0.0001	-0.0001	-0.0001*	-0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0001)
Domesticated Crop/Site Size (Log)		0.1628	0.1031	-0.1205
		(0.1764)	(0.1882)	(0.1883)
Adj.R-squared	0.413	0.407	0.405	0.523
Observations	55	55	55	55
Sample Mean	0.288	0.288	0.288	0.288
Household Nr	No	No	Yes	Yes
Site Size	No	No	No	Yes

Note: The unit of observation is an archaeological. All models include Country FE. Year is the Carbon Dated Year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

PREINDUSTRIAL POLITIES FALSIFICATION

	(1)	(2)	(3)	(4)
	Prosociality	Morality	Public Goods	Legal Code
Food Storage Sites	0.027	0.222	0.557	-0.079
	(0.312)	(0.156)	(0.431)	(0.170)
Adjusted R^2	0.057	0.507	0.046	0.584
Observations	132	192	117	177
Sample Mean	0.932	0.641	0.923	0.819
Natural Geo Area FE	Yes	Yes	Yes	Yes

Note: The unit of observation is an ethnic group. Controls include: Peak Year, Length of Time the Polity Has Existed, and Settlement Hierarchy. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

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