

IAES Conference:  
Culture and the Historical Process

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# A definition of culture

- ▶ Behavioral rules-of-thumb that have evolved in environments in which information acquisition is imperfect or costly.
- ▶ These rules of thumb provide a way of assessing what the “right” thing to do is in different situations.
  - ▶ These rules of thumb may not result in actions that are optimal in every situation, but they save the decision maker from bearing the costs of information acquisition.
- ▶ Theory: e.g, Boyd and Richerson (1985, 1988, 2005).

# Culture and empirical testing

- ▶ Large literature in psychology, anthropology and economics that documents existing cultural differences across groups.
- ▶ E.g., Nisbett and Cohen (1996); Henrich et al. (2001, 2005, 2010); Nisbett (2004); Fisman and Miguel (2007); Giuliano (2007); Fernandez and Fogli (2010).

# Origins of cultural differences

But where do these cultural differences come from?

- ▶ A recent line of research asks whether historical experiences of different cultures can explain current differences.

Discuss two papers here:

1. Nunn and Wantchekon (AER, 2011): The African slave trade and trust today
2. Alesina, Giuliano and Nunn (Mimeo, 2012): Traditional agriculture practices and current gender norms

**Table 1.** The Method of Enslavement of Koelle's Informants

Manner of Enslavement	Percentage
Taken in a war	24.3%
Kidnapped or seized	40.3%
Sold/tricked by a relative, friend, etc.	19.4%
Through a judicial process	16.0%

*Notes:* The data are from Sigismund Koelle's Linguistic Inventory. The sample consists of 144 informants interviewed by Koelle for which their means of enslavement is known.

# Manner of enslavement: Examples

- ▶ Sold/tricked by a relative, friend, etc:
  - ▶ “sold by his relatives”
  - ▶ “sold by his family”
  - ▶ “sold by his brother because they could not agree”
  - ▶ “sold by a supposed friend”
  - ▶ “a treacherous friend enticed him on board a Portuguese vessel”
- ▶ Through the judicial system:
  - ▶ “sold by the king on account of slaying a man”
  - ▶ “sold on account of his family being accused of occasioning the king’s death by means of witchcraft”
  - ▶ “sold on account of his sister being accused of witchcraft”
  - ▶ “sold on account of adultery”

# Trust in the Afrobarometer Surveys

How much do you trust each of the following:										
Response	Your relatives?		Your neighbors?		Your elected local government council?		People from your own ethnic group or tribe?		People from other ethnic groups?	
Not at all	1,412	7%	2,719	13%	3,981	20%	2,797	14%	4,471	22%
Just a little	3,705	18%	5,770	28%	4,869	24%	6,304	31%	7,278	36%
Somewhat	5,154	25%	6,317	31%	5,314	26%	6,119	30%	5,266	26%
A lot	10,357	50%	5,774	28%	6,046	30%	5,282	26%	3,286	16%
Total	20,628	100%	20,580	100%	20,210	100%	20,502	100%	20,301	100%

*Notes:* The table reports summary statistics for five measures of trust from the 2005 Afrobarometer survey. The four interpersonal trust questions are from questions 84a to 84d in the survey. The trust in the locally elected government council is from question 55d. Respondents also have the option of answering "Don't know". The number of respondents answering this to each of the five question (in order from the left to right column) are: 43, 80, 159, 357, and 1,491.

# Ethnicity level slave exports, 1400–1900: Data sources

## Shipping records:

- ▶ trans-Atlantic slave trade:
  - ▶ Updated *Trans-Atlantic Slave Trade Database* constructed by Eltis, Behrendt, Richardson, and Klein and from Elbl (1997).
- ▶ Indian Ocean slave trade:
  - ▶ Martin and Ryan (1977), Austen (1979, 1988, 1992), and Lovejoy (2000).

## Ethnicity data:

- ▶ trans-Atlantic slave trade.
  - ▶ 54 samples, 80,656 slaves, 229 ethnicities
- ▶ Indian Ocean slave trade.
  - ▶ 6 samples, 21,048 slaves, 80 ethnicities



Table 1: Slave Ethnicity Data: Trans-Atlantic Slave Trade, 1450–1799

Region	Years	Num. Ethnic.	Num. Obs.	Record Type
Valencia, Spain	1482–1516	77	2,675	Crown Records
Puebla, Mexico	1540–1556	14	115	Notarial Records
Dominican Republic	1547–1591	26	22	Records of Sale
Peru	1548–1560	16	202	Records of Sale
Mexico	1549	12	80	Plantation Accounts
Peru	1560–1650	30	6,754	Notarial Records
Lima, Peru	1583–1589	15	288	Baptism Records
Colombia	1589–1607	9	19	Various Records
Mexico	1600–1699	28	102	Records of Sale
Dominican Republic	1610–1696	33	55	Government Records
Chile	1615	6	141	Sales Records
Lima, Peru	1630–1702	33	411	Parish Records
Peru (Rural)	1632	25	307	Parish Records
Lima, Peru	1640–1680	33	936	Marriage Records
Colombia	1635–1695	6	17	Slave Inventories
Guyane (French Guiana)	1690	12	69	Plantation Records
Colombia	1716–1725	33	59	Government Records
French Louisiana	1717–1769	23	223	Notarial Records
Dominican Republic	1717–1827	11	15	Government Records
South Carolina	1732–1775	35	681	Runaway Notices
Colombia	1738–1778	11	100	Various Records
Spanish Louisiana	1770–1803	79	6,615	Notarial Records
St. Dominique (Haiti)	1771–1791	25	5,413	Sugar Plantations
Bahia, Brazil	1775–1815	14	581	Slave Lists
St. Dominique (Haiti)	1778–1791	36	1,280	Coffee Plantations
Guadeloupe	1788	8	45	Newspaper Reports
St. Dominique (Haiti)	1788–1790	21	1,297	Fugitive Slave Lists
Cuba	1791–1840	59	3,093	Slave Registers
St. Dominique (Haiti)	1796–1797	56	5,632	Plantation Inventories

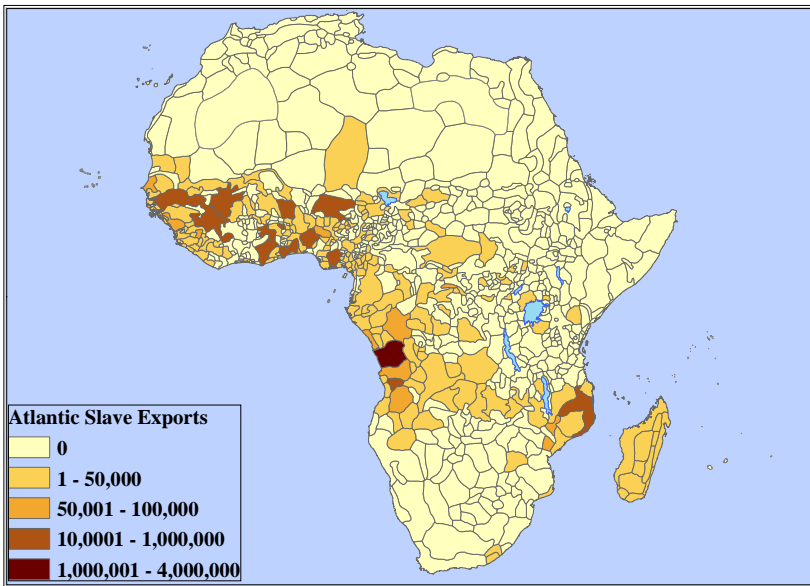
Table 2: Slave Ethnicity Data: Trans-Atlantic Slave Trade, 1800–1900

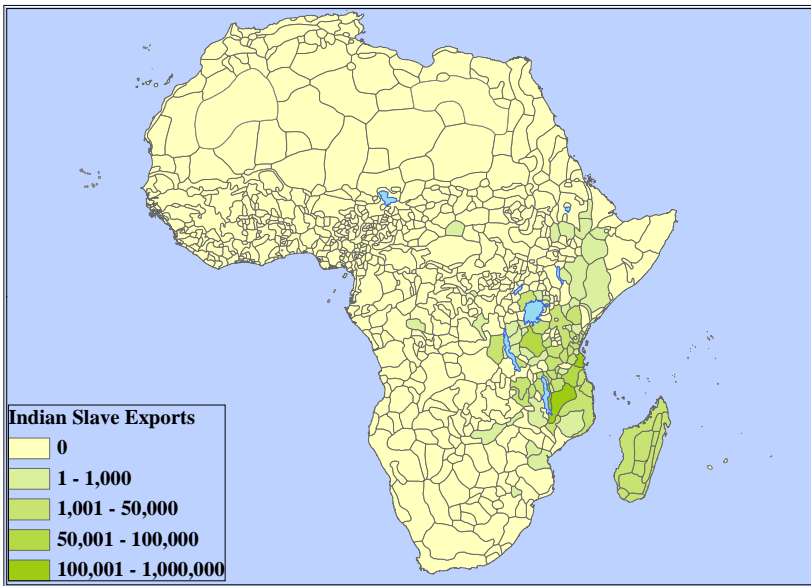
Region	Years	Num. Ethnic.	Num. Obs.	Record Type
American Louisiana	1804–1820	62	223	Notarial Records
Salvador, Brazil	1808–1842	6	456	Records of Manumission
Trinidad	1813	100	12,460	Slave Registers
St. Lucia	1815	62	2,333	Slave Registers
Bahia, Brazil	1816–1850	27	2,666	Slave Lists
St. Kitts	1817	48	2,887	Slave Registers
Senegal	1818	17	80	Captured Slave Ship
Berbice (Guyana)	1819	66	1,127	Slave Registers
Salvador, Brazil	1819–1836	12	871	Manumission Certificates
Salvador, Brazil	1820–1835	11	1,106	Probate Records
Sierra Leone	1821–1824	68	605	Child Registers
Rio de Janeiro, Brazil	1826–1837	31	772	Prison Records
Anguilla	1827	7	51	Slave Registers
Rio de Janeiro, Brazil	1830–1852	190	2,921	Free Africans' Records
Rio de Janeiro, Brazil	1833–1849	35	476	Death Certificates
Salvador, Brazil	1835	13	275	Court Records
Salvador, Brazil	1838–1848	7	202	Slave Registers
St. Louis/Goree, Senegal	1843–1848	21	189	Emancipated Slaves
Bakel, Senegal	1846	16	73	Sales Records
d'Agoué, Benin	1846–1885	11	70	Church Records
Sierra Leone	1848	132	12,425	Linguistic and British Census
Salvador, Brazil	1851–1884	8	363	Records of Manumission
Salvador, Brazil	1852–1888	7	269	Slave Registers
Cape Verde	1856	32	314	Slave Census
Kikoneh Island, Sierra Leone	1896–1897	11	185	Fugitive Slave Records
<b>Total</b>			<b>80,656</b>	



No.	Name of Slave	No.	Name of Master	Sex	Residence	Age	Sex	Tribe	DATE of Purchase
			Somool bin Pusa	B	Chak Chak	20	f	Syassaa	24/4/78
1	Pogiki		Japaji Nasimji	B	do	16	-	Mginda	---
2	Pogiki		Phakhoj Jorangi	B	Lanyau	30	-	Miao	20/4/78
3	Zapan		do	"	do	15	-	"	---
4	Hakali		do	"	do	18	m	Makanda	---
5	Sungsa		do	"	do	19	f	Miao	12/4/78
6	Zapan		do	"	do	16	-	Syassaa	---
7	Talir		do	"	do	25	-	Mkasa	---
8	Amira		7. a. case, No 2 of 1881 K.M.S. De Phe-2	"	do	20	m	---	---
9	Mahafashera		do	"	do	25	-	---	---
10	Pulu		do	"	do	25	-	---	---
11	Silal		do	"	do	25	f	---	---
12	Kinali		do	"	do	25	-	---	---
13	Amahelila		do	"	do	25	-	---	---
14	Alimo		Dira bin Jaffer *	"	do	12	f	Mgalia	18/6/78
15	Rahoma		* These slaves had belonged to the above Khepa, and on his decease last year were inherited by his <sup>son</sup> sister	"	do	30	-	Mzunga	---
16	Kyuma Yangu		do	"	do	30	-	oncharia	---
17	Majuma		do	"	do	20	-	Syassaa	---
18	Pea		do	"	do	15	-	Mgalia	---
19	Majuma		Ramathan bin Saif.	"	do	16	-	---	---
20	Mjakhazi		a suriana	"	do	---	-	Syassaa	---







# OLS estimates: The slave trade and trust

	Trust of relatives	Trust of neighbors	Trust of local council	Intra-group trust	Inter-group trust
	(1)	(2)	(3)	(4)	(5)
ln (1+exports/area)	-0.178*** (0.032)	-0.202*** (0.031)	-0.129*** (0.022)	-0.188*** (0.033)	-0.115*** (0.030)
Colonial population density	Yes	Yes	Yes	Yes	Yes
Ethnicity-level colonial controls	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes
District controls	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Number of observations	16,709	16,679	15,905	16,636	16,473
Number of ethnicity clusters	147	147	146	147	147
Number of district clusters	1,187	1,187	1,194	1,186	1,184
R-squared	0.13	0.16	0.21	0.16	0.12



# Evidence without historical data I

	Trust of local government council			
	Afrobarometer sample		Asiabarometer sample	
	(1)	(2)	(3)	(4)
Distance from the coast	0.00039*** (0.00009)	0.00031*** (0.00008)	-0.00001 (0.00010)	0.00001 (0.00009)
Country fixed effects	Yes	Yes	Yes	Yes
Individual controls	No	Yes	No	Yes
Number of observations	19,913	19,913	5,409	5,409
Number of clusters	185	185	62	62
R-squared	0.16	0.18	0.19	0.22

*Notes:* The table reports OLS estimates. The unit of observation is an individual. The dependent variable in the Asiabarometer sample is the respondent's answer to the question: "How much do you trust your local government?". The categories for the answers are the same in the Asiabarometer as in the Afrobarometer. Standard errors are clustered at the ethnicity level in the Afrobarometer regressions and at the location (city) level in the Asiabarometer and the WVS samples. The individual controls are for age, age squared, a gender indicator, education fixed effects, and religion fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

## Evidence without historical data II

	Inter-group trust				
	Afrobarometer sample		WVS non-Africa sample		WVS Nigeria
	(1)	(2)	(3)	(4)	(5)
Distance from the coast	0.00039*** (0.00013)	0.00037*** (0.00012)	-0.00020 (0.00014)	-0.00019 (0.00012)	0.00054*** (0.00010)
Country fixed effects	Yes	Yes	Yes	Yes	n/a
Individual controls	No	Yes	No	Yes	Yes
Number of observations	19,970	19,970	10,308	10,308	974
Number of clusters	185	185	107	107	16
R-squared	0.09	0.10	0.09	0.11	0.06

*Notes*: The table reports OLS estimates. The unit of observation is an individual. The dependent variable in the WVS sample is the respondent's answer to the question: "How much do you trust <nationality> people in general?". The categories for the respondent's answers are: "not at all", "not very much", "neither trust nor distrust", "a little", and "completely". The responses take on the values 0, 1, 1.5, 2, and 3. Standard errors are clustered at the ethnicity level in the Afrobarometer regressions and at the location (city) level in the Asiabarometer and the WVS samples. The individual controls are for age, age squared, a gender indicator, an indicator for living in an urban location, and occupation fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

# Internal vs. external determinants of mistrust

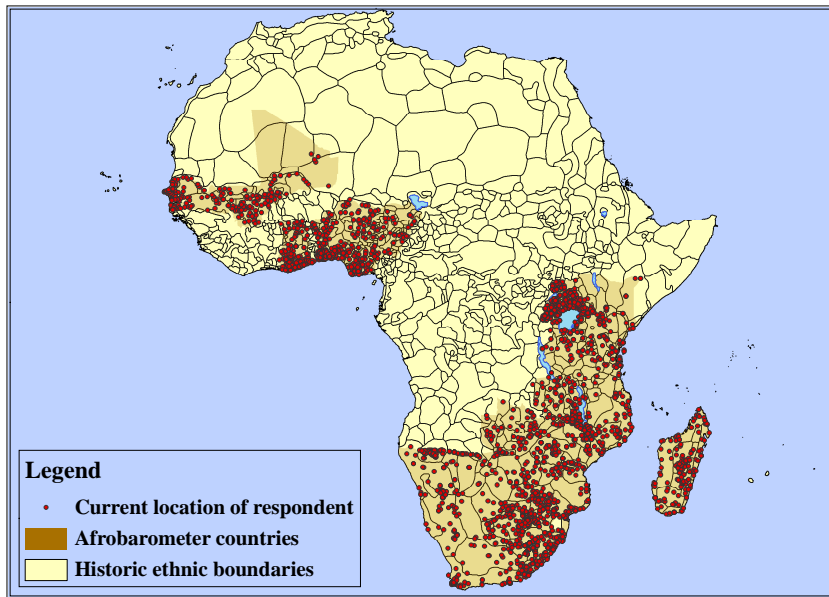
	Inter-group trust				
	Trust of local council		Within town	Within district	Within province
	(1)	(2)	(3)	(4)	(5)
Ethnicity-based slave export measure (baseline measure)	-0.072*** (0.019)	-0.070*** (0.019)	-0.102*** (0.028)	-0.120*** (0.027)	-0.098*** (0.029)
Average slave export measure among other ethnicities in the same location			-0.037 (0.029)	-0.063** (0.030)	-0.091*** (0.035)
Council trustworthiness fixed effects	Yes	Yes	No	No	No
Five public goods fixed effects	No	Yes	No	No	No
Colonial population density	Yes	Yes	Yes	Yes	Yes
Ethnicity-level colonial controls	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Number of observations	12,827	12,203	9,673	12,513	15,999
Number of clusters	146 / 1,172	145 / 1,130	147 / 725	147 / 737	147 / 1,127
R-squared	0.37	0.37	0.12	0.12	0.12

*Notes:* The table reports OLS estimates. The unit of observation is an individual. Standard errors are adjusted for two-way clustering at the ethnicity-based ethnicity level and at the location-based ethnicity level. 'Average slave export measure among other ethnicities in the same location' is the average slave export measure of respondents in the Afrobarometer survey living in the same village, district or region as the respondent. The 'Five public goods fixed effects' are for the existence of the following public goods in the respondent's town/village: school, health clinic, sewage, piped water, and electricity. See table 3 for a description of the baseline controls, the ethnicity-level colonial controls, and the colonial population density variables. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10% levels.

# Internal vs. external determinants of mistrust

	Trust of relatives	Trust of neighbors	Trust of local council	Intra-group trust	Inter-group trust
	(1)	(2)	(3)	(4)	(5)
Ethnicity-based slave export measure (baseline measure)	-0.155*** (0.029)	-0.182*** (0.029)	-0.100*** (0.023)	-0.169*** (0.033)	-0.090*** (0.030)
Location-based slave export measure	-0.058*** (0.016)	-0.041** (0.019)	-0.068*** (0.017)	-0.039* (0.022)	-0.047** (0.024)
Colonial population density	Yes	Yes	Yes	Yes	Yes
Ethnicity-level colonial controls	Yes	Yes	Yes	Yes	Yes
Baseline controls	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Number of observations	15,999	15,972	15,221	15,931	15,773
Number of clusters	146 / 269	146 / 269	145 / 272	146 / 269	146 / 269
R-squared	0.13	0.16	0.20	0.16	0.12

*Notes:* The table reports OLS estimates. The unit of observation is an individual. Standard errors are adjusted for two-way clustering at the ethnicity-based ethnicity level and at the location-based ethnicity level. 'Ethnicity-based slave export measure' is our baseline measure of slave exports used throughout the paper; it is the log of the number of slaves taken from an individual's ethnic group (normalized by land area). 'Location-based slave export measure' is our alternative measure of slave exports, which is the log of the number of slaves taken from the location where an individual is currently living (normalized by land area). See table 3 for a description of the baseline controls, the ethnicity-level colonial controls, and the colonial population density variables. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10% levels.



## Alesina, Giuliano and Nunn (Mimeo, 2012)

- ▶ There are vast cross-societal differences in cultural attitudes about the appropriate role of women.
- ▶ This is reflected in both value-based survey responses and objective measures like female labor force participation.
- ▶ “When jobs are scarce, men should have more right to a job than women” (from WVS):
  - ▶ Proportion of the population that answers ‘yes’:
    - ▶ Iceland 3.6%; USA 10.6%; Rwanda 28%; Switzerland 35.1%
    - ▶ Japan 60%; Pakistan 79%; Egypt 94.9%
- ▶ Female labor force participation rates in 2000:
  - ▶ Burundi 93.2%; Tanzania 89.3%; Iceland 83.3%; USA 70.4%
  - ▶ Japan 59%; Italy 46%; Pakistan 30.3%; Egypt 21.5%

# Plough agriculture



## Plough agriculture





## Shifting cultivation



## Hoe agriculture



## Hoe agriculture



# Boserup's hypothesis

1. Certain parts of the world traditionally used plough agriculture.
2. In these places, men had an advantage for work in the field.
  - ▶ This is because the person had to pull the plough or control an animal that pulled the plough.
  - ▶ The use of the plough also leaves little need for weeding, a job in which women almost always specialize.
  - ▶ Plough agriculture was less compatible with simultaneous child care.
3. Therefore, men tended to work in the field outside of the home, while women worked within the home.
4. Over centuries, the belief that the home was the 'normal' or 'natural' place for women evolved.
5. These beliefs continue to persist today (even after a movement out of agriculture).

# What we do

- ▶ We document a link between the type of agriculture traditionally practiced by societies and current values and beliefs and gender roles.
- ▶ The analysis looks across:
  1. Ethnic groups:
    - ▶ traditional plough agriculture  $\Leftrightarrow$  traditional gender roles
  2. Countries:
    - ▶ traditional plough agriculture  $\Rightarrow$  objective country-level outcomes
  3. Individuals:
    - ▶ traditional plough agriculture  $\Rightarrow$  subjective individual attitudes
  4. Second generation immigrants within the US:
    - ▶ Done to isolate the importance of factors internal vs. external to the individual

# Traditional plough agriculture

- ▶ The original information, from the *Ethnographic Atlas*, categorizes 1265 ethnic groups into the following four categories:
  1. Data missing (109)
  2. Plough absent (999)
  3. Plough exists but not aboriginal (18)
  4. Aboriginal plough use prior to contact (141)
- ▶ Using this, we construct an indicator variable that equals one if ethnic group  $e$  engaged in plough agriculture:  $I_e^{plough}$ .

# Ethnographic controls

1. Economic complexity
  - ▶ Index based on settlement density/complexity.
2. Political hierarchies
  - ▶ Number of levels of political authority beyond the local community.
3. Domesticated animals
  - ▶ Presence of bovine or equine domesticated animals.
4. Tropical climate
  - ▶ Proportion of the land within 200 kilometers of an ethnic group's centroid that is tropical.
5. Agricultural suitability
  - ▶ Fraction of land within 200 km of an ethnic group's centroid that is arable.

# Historical female participation in agriculture

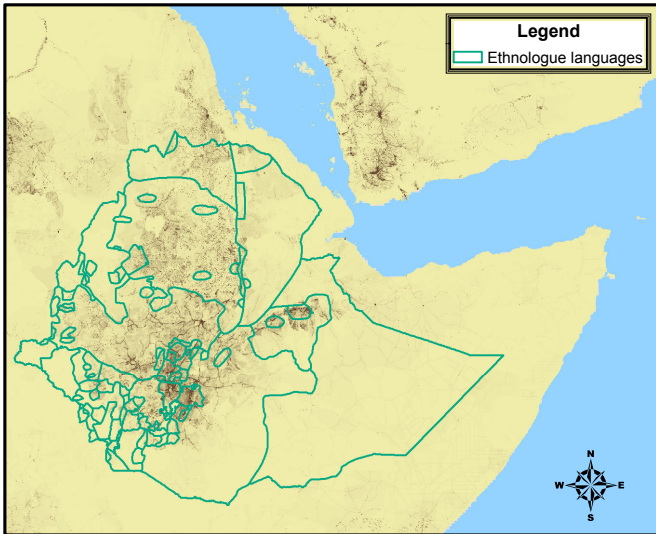
- ▶ Gender differences in agriculture (& other activities):
  1. Males only (70)
  2. Males appreciably more (161)
  3. Equal participation (230)
  4. Females appreciably more (227)
  5. Females only (32)
- ▶ Create a variable that takes on the values 1–5, and is increasing in female participation in agriculture.

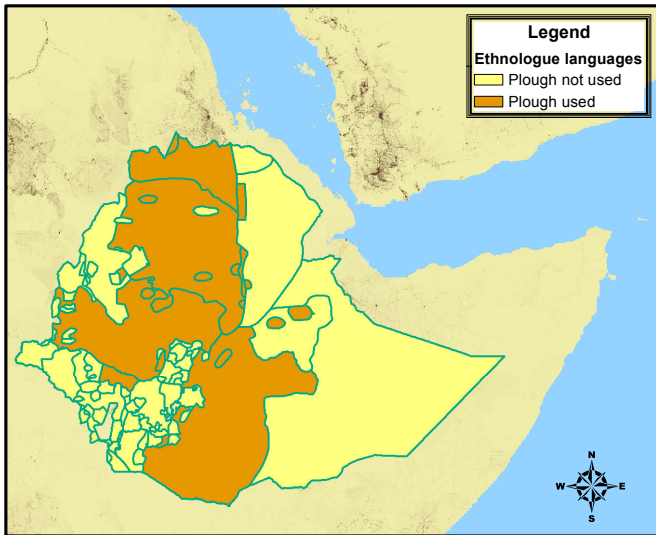


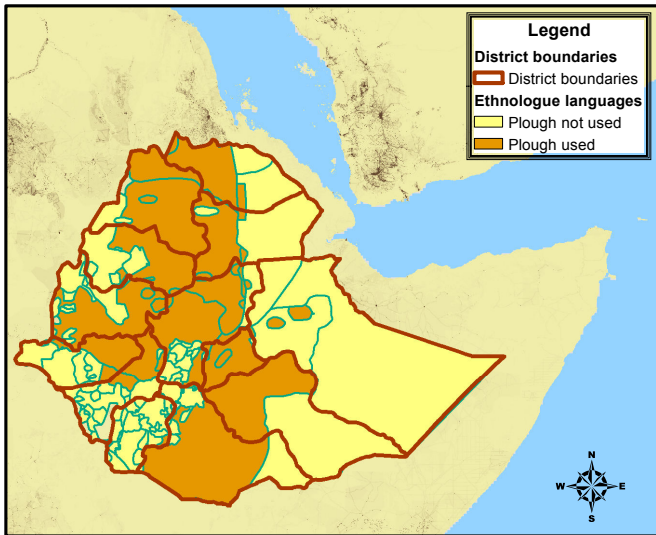
**Table:** Was the plough associated with differences in the gender division of labor within agriculture?

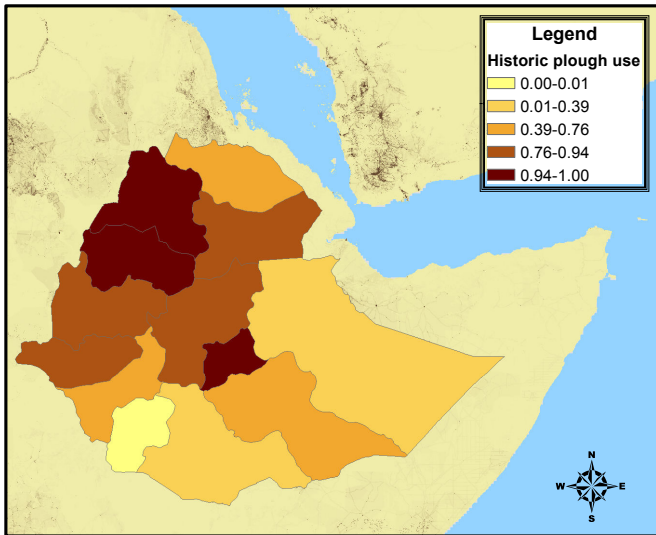
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable: Traditional participation of females relative to males in the following tasks:							
	Overall agriculture		Land clearance	Soil preparation	Planting	Crop tending	Harvesting
Mean of dep. var.	3.04	2.83	1.45	2.15	2.86	3.16	3.23
Traditional plough agriculture	-0.883*** (0.114)	-1.136*** (0.240)	-0.434** (0.197)	-1.182*** (0.320)	-1.290*** (0.306)	-1.188*** (0.351)	-0.954*** (0.271)
Ethnographic controls	yes	yes	yes	yes	yes	yes	yes
Observations	660	124	129	124	131	122	131
R-squared	0.13	0.23	0.18	0.14	0.13	0.18	0.20

*Notes:* The unit of observation is an ethnic group. In column 1 ethnic groups are from the *Ethnographic Atlas* and in columns 2-7 they are from the *Standard Cross Cultural Sample*. The dependent variable measures traditional female participation in a particular agricultural activity in the pre-industrial period. The variables take on integer values between 1 and 5 and are increasing in female participation. "Traditional plough agriculture" is an indicator variable that equals one if the plough was traditionally used in pre-industrial agriculture. "Ethnographic controls" include: the suitability of the local environment for agriculture, the presence of large domesticated animals, the proportion of the local environment that is tropical or subtropical, an index of settlement density, and an index of political development. Finer details about variable construction are provided in the text and appendix. Coefficients are reported with robust standard errors in brackets. Column 1 reports Conley standard errors adjusted for spatial correlation. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10% levels.

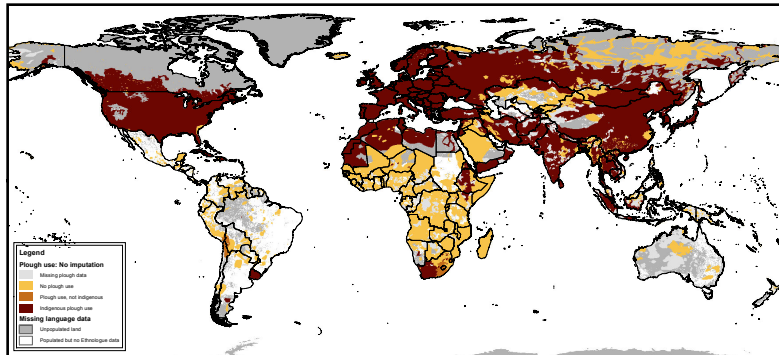




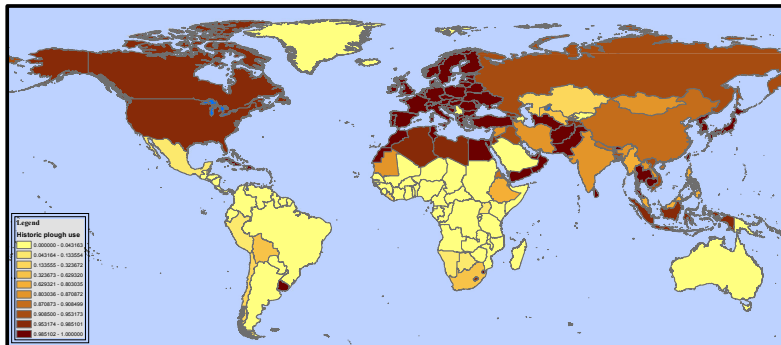




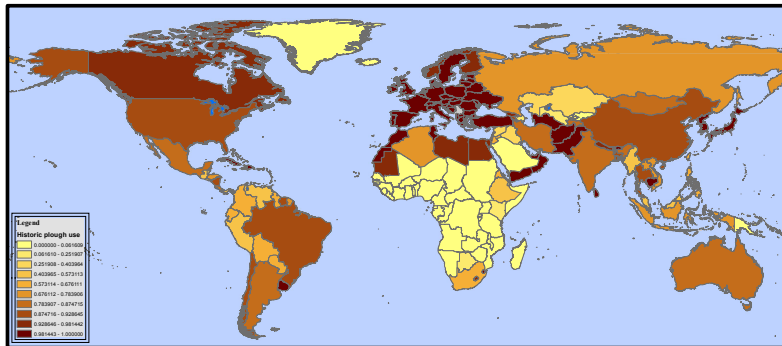
# Ancestor's plough use across ethnic/language groups: Baseline



# Ancestor's plough use across countries: Baseline measure (no imputation)



# Ancestor's plough use across countries: Imputation using national language





## Country-level: Outcomes of interest

- ▶ Female labor force participation:
  1. Proportion of women in the labor force (employed or seeking employment) – from WDI.
- ▶ Female representation in positions of power:
  1. Proportion of firm owners/managers that are female – from WB Enterprise surveys.
  2. Proportion of seats in national parliament held by women – from WDI.



Table: Country level OLS estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable:							
	Female labor force participation in 2000	Share of firms with female ownership, 2003-2010	Share of political positions held by women in 2000	Average effect size (AES)				
Mean of dep. var.	51.35	35.17	11.83	2.31				
Traditional plough use	-12.401*** (2.964)	-12.930*** (3.537)	-15.241*** (4.060)	-16.587*** (4.960)	-4.821*** (1.782)	-5.129** (2.061)	-0.743*** (0.080)	-0.845*** (0.091)
<i>Historical controls:</i>								
Agricultural suitability	6.073 (3.696)	7.181* (4.175)	0.803 (5.447)	4.322 (6.071)	2.198 (2.605)	1.081 (2.548)	0.262* (0.139)	0.342** (0.139)
Tropical climate	-9.718*** (2.487)	-10.906*** (3.070)	-10.432*** (3.762)	-3.712 (5.711)	-6.086*** (2.094)	-4.169* (2.396)	-0.362*** (0.084)	-0.06 (0.101)
Presence of large animals	-2.015 (5.372)	-2.166 (6.072)	2.707 (9.745)	5.61 (10.417)	-5.718 (3.565)	-4.688 (4.132)	0.005 (0.121)	0.201 (0.146)
Political hierarchies	0.779 (1.515)	1.181 (1.482)	1.128 (1.941)	0.207 (1.878)	0.744 (0.822)	0.656 (0.807)	0.102** (0.040)	0.070* (0.042)
Economic complexity	1.157 (0.793)	1.411* (0.815)	1.693 (1.129)	0.764 (1.382)	0.454 (0.487)	0.333 (0.502)	0.063*** (0.023)	0.027 (0.026)
<i>Contemporary controls:</i>								
ln income in 2000	-34.612*** (6.528)	-32.685*** (7.023)	10.766 (9.986)	6.385 (10.482)	-6.530 (4.071)	-6.616 (4.335)	-0.776*** (0.221)	-0.815*** (0.231)
ln income in 2000 squared	2.038*** (0.406)	1.936*** (0.431)	-0.707 (0.688)	-0.523 (0.706)	0.539** (0.271)	0.535* (0.281)	0.051*** (0.015)	0.051*** (0.015)
Continent fixed effects	no	yes	no	yes	no	yes	no	yes
Observations	165	165	123	123	144	144	144	144
R-squared	0.40	0.41	0.16	0.22	0.31	0.34	0.28	0.33

## Individual-level: Outcomes of interest

- ▶ Female labor force participation:
  1. For women, whether they are currently in the labor force.
- ▶ Subjective measures of gender role attitudes that underly the objective country-level measures:
  2. Employment: “When jobs are scarce, men should have more right to a job than women”
    - ▶ (i) agree, (ii) neither (iii) disagree
    - ▶ Variable equals 1 if agree, and 0 if disagree.
  3. Leadership and politics: “On the whole, men make better political leaders than women”
    - ▶ (i) strongly disagree, (ii) disagree, (iii) agree, (iv) strongly agree
    - ▶ Variable takes on values 1, 2, 3, 4.

## Individual-level estimates: World Values Surveys

$$y_{i,d,c} = \alpha_c + \beta \text{Plough}_d + \mathbf{X}_c^C \boldsymbol{\Gamma} + \mathbf{X}_d^H \boldsymbol{\Pi} + \mathbf{X}_i \boldsymbol{\Phi} + \varepsilon_{i,d,c}$$

- ▶  $i$  denotes an individual,  $d$  denotes a district within a country  $c$ .
- ▶  $\alpha_c$ : country fixed effects.
- ▶  $\text{Plough}_d$ : the traditional use of the plough among the ancestors of individuals living in district  $d$ .
- ▶  $\mathbf{X}_i$ : individual-level controls age, age squared, as well as fixed effects for marital status, educational attainment, and income levels.

Table: Individual-level OLS estimates: World Values Surveys.

	Dependent variables:								
	FLFP	When jobs are scarce	Men better political leaders	FLFP	When jobs are scarce	Men better political leaders	FLFP	When jobs are scarce	Men better political leaders
	All countries			All countries			Countries with subnational variation only		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean dep. variable	0.55	0.46	2.62	0.56	0.47	2.64	0.51	0.56	2.79
Traditional plough use	-0.224*** (0.037)	0.191*** (0.032)	0.238*** (0.073)	-0.147*** (0.047)	0.109* (0.058)	0.308*** (0.115)	-0.154*** (0.053)	0.135** (0.061)	0.292*** (0.109)
Individual controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
Contemporary country controls	yes	yes	yes	n/a	n/a	n/a	n/a	n/a	n/a
Historical district level controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
Fixed effects	continent	continent	continent	country	country	country	country	country	country
Number of countries	60	74	50	64	79	55	27	32	27
Number of districts	546	674	453	563	700	479	260	325	273
Observations	34,887	80,303	64,215	36,950	87,528	72,152	17,276	43,872	41,143
R-squared	0.20	0.21	0.19	0.27	0.28	0.26	0.28	0.26	0.28

Notes: The table reports OLS estimates, with standard errors clustered at the country level. "Individual controls" are age, age squared, education, gender (for gender attitudes only), marital status and town size. "Contemporary country controls" include ln income and ln income squared. "Historical district controls" include measures of agricultural suitability, domesticated animals, tropical areas, political hierarchies, and economic complexity. Columns 1-6 report estimates including all countries in the sample, while columns 7-9 only include countries with some subnational variation in traditional plough use. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10% levels.

## Individual-level estimates: IPUMS-International

$$y_{i,e,c} = \alpha_c + \beta \text{Plough}_e + \mathbf{X}_c^C \boldsymbol{\Gamma} + \mathbf{X}_e^H \boldsymbol{\Pi} + \mathbf{X}_i \boldsymbol{\Phi} + \varepsilon_{i,e,c}$$

- ▶  $i$  denotes an individual,  $e$  denotes an ethnicity, and  $c$  a country.
- ▶  $\alpha_c$ : country fixed effects.
- ▶  $\text{Plough}_e$ : the traditional plough use of ethnicity  $e$ .
- ▶  $\mathbf{X}_i$ : individual-level controls age, age squared, as well as fixed effects for marital status, educational attainment, and income levels.

**Table:** Individual-level OLS estimates: IPUMS-International.

	Dependent variable: Female labor force participation indicator						
	Belarus	Bolivia	Chile	Cambodia	Malaysia	Nepal	Uganda
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Mean of dep. var.	0.67	0.44	0.40	0.78	0.40	0.54	0.56
Historical plough use	-0.271*** (0.041)	-0.035*** (0.002)	-0.073*** (0.003)	-0.064** (0.027)	-0.063*** (0.008)	-0.130*** (0.030)	-0.078*** (0.020)
Historical controls	yes	yes	yes	yes	yes	yes	yes
Individual controls	yes	yes	yes	yes	yes	yes	yes
Fixed effects	7 regions	9 departments	25 provinces	24 provinces	15 states	14 zones	4 regions
Observations	345,812	173,804	505,114	432,481	319,580	710,662	1,003,321
Clusters	25	6	5	11	21	16	60
R-squared	0.37	0.07	0.17	0.19	0.10	0.15	0.08

*Notes:* OLS estimates are reported, with standard errors clustered at the Ethnographic Atlas ethnicity level in brackets. The unit of observation is a woman in a given country. Individual controls include a quadratic in age, educational indicator variables, a marital status indicator and an urban/rural indicator. For countries with data available for more than one wave, the equation also controls for survey fixed effects. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10% levels.



## Identifying cultural transmission as (part of) the mechanism

- ▶ Historical plough-use may not have only affected norms and beliefs, but also institutions, markets and policies, which may also impact our outcomes of interest.
- ▶ To better identify a purely cultural channel, we examine female labor force participation of second-generation immigrants living within the US and Europe.
  - ▶ Immigrants face the same domestic institutions, markets and policies (since they are all in the same country), but have different cultural backgrounds.

# Immigrant analysis

## U.S. second-generation immigrants

- ▶ From the March Supplement of the Current Population Survey (CPS), 1994–2009.
- ▶ Examine FLFP of daughter of migrants.

## European second-generation immigrants

- ▶ From five waves of the European Social Survey (ESS), 2002–2011.
- ▶ “When job are scarce men should have more right to work than women”
  - ▶ Responses: ‘agree strongly’, ‘agree’, ‘neither agree nor disagree’, ‘disagree’ and ‘disagree strongly’
- ▶ Create: (1) an indicator variable, and (2) a variable that ranges from 1-5.

Table: US immigrant OLS estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable: Labor force participation indicator									
	All women			Married women					
	Women's ancestry			Women's ancestry			Husband's ancestry		
	Father's country	Mother's country	Parents same country	Father's country	Mother's country	Parents same country	Father's country	Mother's country	Parents same country
Mean of dep. var.	0.63	0.64	0.60	0.68	0.69	0.69	0.70	0.71	0.70
Traditional plough use	-0.044*** (0.015)	-0.043** (0.018)	-0.062*** (0.020)	-0.094** (0.046)	-0.118*** (0.043)	-0.136** (0.054)	-0.065*** (0.024)	-0.045** (0.022)	-0.058** (0.024)
Individual controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
Husband controls	n/a	n/a	n/a	yes	yes	yes	yes	yes	yes
Historical country controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
Contemporary country controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
State fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	57138	55341	32776	10206	9508	6835	35393	35158	23124
R-squared	0.23	0.23	0.26	0.11	0.11	0.12	0.09	0.08	0.09

Notes: OLS estimates are reported with standard errors clustered at the country level. An observation is a daughter of an immigrant to the US. "Individual controls" include age, age squared, education, marital status, year of survey fixed effects, and metropolitan fixed effects. "Husband controls" include husband's age, age squared, education and wage income. "Historical country controls" include: ancestral suitability for agriculture, fraction of ancestral land that was tropical or subtropical, ancestral domestication of large animals, ancestral settlement patterns, and ancestral political complexity. "Contemporaneous country controls" include the natural log of real per capita GDP and its square, measured in the same year as the dependent variable. All regressions also control for state fixed effects. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10% levels.

Table: European immigrant OLS estimates.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variables: When job are scarce						
	Father's country		Mother's country		Same country	
	1-5 scale	Indicator	1-5 scale	Indicator	1-5 scale	Indicator
Mean of dependent variable	2.54	0.27	2.53	0.27	2.62	0.30
Traditional plough use	0.229** (0.092)	0.061** (0.029)	0.225** (0.087)	0.068** (0.028)	0.314*** (0.096)	0.083*** (0.031)
Individual controls	yes	yes	yes	yes	yes	yes
Contemporary origin-country controls	yes	yes	yes	yes	yes	yes
Historical origin-country controls	yes	yes	yes	yes	yes	yes
Destination-country fixed effects	yes	yes	yes	yes	yes	yes
Survey fixed effects	yes	yes	yes	yes	yes	yes
Observations	15,545	15,545	15,260	15,260	10,535	10,535
R-squared	0.17	0.11	0.17	0.11	0.17	0.11

Notes: The table reports OLS estimates, with standard errors clustered at the country level. An observation is the child of an immigrant. "Individual controls" include: age, age squared, education, gender, marital status, city size fixed effects, country of destination fixed effects, and survey fixed effects. "Historical origin-country controls" include: ancestral suitability for agriculture, fraction of ancestral land that was tropical or subtropical, ancestral domestication of large animals, ancestral settlement patterns, and ancestral political complexity. "Contemporaneous origin-country controls" include the natural log of real per capita GDP and its square, measured in the same year as the dependent variable. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10% levels.

# Conclusions

- ▶ There is increasing emphasis of the important role played by culture, defined as values and beliefs that aid in decision making.
- ▶ The two studies discussed here provide examples of a literature that tests for the historical origins of current cultural differences.
- ▶ Provide evidence that cultural beliefs are slow moving and their evolution can be shaped by historical forces.
- ▶ Summary: Nunn, Nathan. 2012. "Culture and the Historical Process," *Economic History of Developing Regions*, 27: 108–126.