Supplementary Material for

Traditional agricultural practices and the sex ratio today

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The Supplementary Material provides details on the data sources and the robustness of the analysis for the results derived in the paper.

Additional details on the *Ethnographic Atlas*

The *Ethnographic Atlas* was constructed by George Peter Murdock. It contains ethnographic information for 1,265 ethnic groups worldwide. The period in which the information was collected varies by ethnicity, with the earliest observation dates coming from ethnicities in the Old World (where early written evidence is available) and the most recent information dating around the 20th century, for those parts of the world without a written history and directly observed by anthropologists. All societies are observed prior to industrialization. In total, 23 ethnicities are observed during the 17th century or earlier, 16 during the 18th century, 310 during the 19th century, 876 between 1900 and 1950, and 31 after 1950. For nine ethnicities, an exact year is not provided.

The variable $v39$ classifies each ethnic group as being in one of the following three categories: (1) the plough was absent, (2) the plough existed at the time the group was observed, but it was not aboriginal, and (3) the plough was aboriginal, having existed prior to contact. Using this information, we construct an indicator variable that equals one if the plough was ever adopted

during the pre-industrial period (whether aboriginal or not) and zero otherwise. Of the 1,156 ethnicities for which information exists, for 997 the plough was absent, for 141 the plough was adopted (and aboriginal), and for 18 it was adopted, but after European contact. Of these, almost all are Native American groups who today are either extinct or are very small and comprise a negligible proportion of the population of countries today. The exceptions are the Swazi, Sotho, and Xhosa, all from the Southern part of Africa and the Aymara who live in Bolivia today. After our data construction procedure, there are only four countries with non-trivial proportions of the population whose ancestors adopted the plough after European contact. These are Swaziland (99.9%), Lesotho (97.3%), Bolivia (30.55%) and South Africa (23%). We report in S2 and S3 Tables the robustness of the results to the exclusion of the four countries where a large proportion of the population adopted the plough after European contact, and the twenty-one for which there is any proportion of the population for which the plough was not aboriginal. The results are more precisely estimated when compared to the full sample.

Table A. Sex ratio ancestral plough use, robustness to Conley standard errors.

	(1)	(2)	(3)	(4)
	Sex ratio at birth	Sex ratio under age 1	Sex ratio age 0 to 4	Sex ratio age 5 to 14
	Panel A: OLS estimates			
Mean (std. dev.) of sex ratio	104.8 (1.45)	103.7 (1.91)	103.6 (1.99)	103.2 (2.36)
Ancestral plough use	**0.664***	**1.040*****	**1.194*****	**1.744*****
	(0.337)	**(0.386)**	**(0.414)**	**(0.509)**
Conley st. err. (window=5 degrees)	[0.292]	[0.355]	[0.381]	[0.487]
Conley st. err. (window=20 degrees)	[0.297]	[0.344]	[0.367]	[0.440]
Conley st. err. (window=25th perc. gen. dist.)	{0.458}	{0.495}	{0.502}	{0.470}
Conley st. err. (window=50th perc. gen. dist.)	{0.450}	{0.521}	{0.544}	{0.535}
Conley st. err. (window=75th perc. gen. dist.)	{0.414}	{0.465}	{0.489}	{0.462}
Continent fixed effects	yes	yes	yes	yes
Mean (std. dev.) of ancestral plough use	0.63 (0.44)	0.63 (0.44)	0.63 (0.44)	0.63 (0.44)
Observations	153	153	153	153
R-squared	0.509	0.623	0.613	0.577
	Panel B: Second stage of 2SLS estimates			
Ancestral plough use	**0.741**	**1.742*****	**1.912*****	**3.012*****
	(0.498)	**(0.604)**	**(0.644)**	**(0.851)**
Conley st. err. (window=5 degrees)	[0.476]	[0.570]	[0.616]	[0.807]
Conley st. err. (window=20 degrees)	[0.483]	[0.582]	[0.634]	[0.829]
Conley st. err. (window=25th perc. gen. dist.)	{0.684}	{0.751}	{0.759}	{0.720}
Conley st. err. (window=50th perc. gen. dist.)	{0.638}	{0.644}	{0.652}	{0.587}
Conley st. err. (window=75th perc. gen. dist.)	{0.632}	{0.638}	{0.642}	{0.593}
Continent fixed effects	yes	yes	yes	yes
Mean (std. dev.) of ancestral plough use	0.63 (0.45)	0.63 (0.45)	0.63 (0.45)	0.63 (0.45)
Observations	152	152	152	152
R-squared	0.506	0.612	0.601	0.555

Notes: The unit of observation is a country. Coefficients are reported with robust standard errors in parenthesis. ''Ancestral plough use'' is the estimated proportion of citizens with ancestors that used the plough in pre-industrial agriculture. The variable ranges from 0 to 1. The dependent variables are the number of boys of a given age range per 100 girls, for the 1960-2009 period. Conley-Standard Errors based on geographic distance are indicated with squared-brackets (5 and 20 degrees). Conley-Standard Errors based on genetic distance are indicated with curly brackets (based on 25, 50 and 75 percentile of genetic distance) ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table B. Sex ratio and ancestral plough use, robustness to the exclusion of countries with a large fraction of the population with non-aboriginal plough use (Swaziland, Lesotho, Bolivia and South Africa).

	(1)	(2)	(3)	(4)
	Sex ratio at birth	Sex ratio under age 1	Sex ratio age 0 to 4	Sex ratio age 5 to 14
	Panel A: OLS estimates			
Mean (std. dev.) of sex ratio	104.9 (1.44)	103.7 (1.92)	103.6 (1.99)	103.2 (2.37)
Ancestral plough use	**0.954***	**1.341***	**1.497***	**2.072***
	(0.318)	**(0.369)**	**(0.398)**	**(0.501)**
Observations	149	149	149	149
R-squared	0.515	0.628	0.618	0.584
	Panel B: Second stage of 2SLS estimates			
Ancestral plough use	**0.940***	**2.008***	**2.163***	**3.235***
	(0.504)	**(0.616)**	**(0.661)**	**(0.896)**
	Panel C: First stage of 2SLS estimates. Dependent variable: Traditional plough use			
Plough-positive environment	0.712***	0.712***	0.712***	0.712***
	(0.085)	(0.085)	(0.085)	(0.085)
Plough-negative environment	0.209	0.209	0.209	0.209
	(0.165)	(0.165)	(0.165)	(0.165)
F-statistic (environment instruments)	41.82	41.82	41.82	41.82
World Bank region fixed effects	yes	yes	yes	yes
Mean (std. dev.) of ancestral plough use	0.63 (0.45)	0.63 (0.45)	0.63 (0.45)	0.63 (0.45)
Observations	148	148	148	148
R-squared	0.513	0.619	0.609	0.567

Notes: The unit of observation is a country. Coefficients are reported with robust standard errors in parenthesis. ''Ancestral plough use'' is the estimated proportion of citizens with ancestors that used the plough in pre-industrial agriculture. The variable ranges from 0 to 1. The dependent variables are the number of boys of a given age range per 100 girls, for the 1960-2009 period. The regressions include the historical and contemporary controls used in Table 1. The instruments comprise two variables: one mesauring the ancestral suitability of the environment for plough-positive crops (the average fraction of ancestral land that was suitable for growing barley, rye and wheat divided by the fraction that was suitable for any crops) and the ancestral suitability of the environment for plough-negative crops (the average fraction of ancestral land that was suitable for growing foxtail millet, pearl millet and sorghum divided by the fraction that was suitable for any crops). ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table C. Sex ratio and ancestral plough use, robustness to the exclusion of 21 countries with any fraction of the population with of non-aboriginal plough use.

	(1)	(2)	(3)	(4)
	Sex ratio at birth	Sex ratio under age 1	Sex ratio age 0 to 4	Sex ratio age 5 to 14
	Panel A: OLS estimates			
Mean (std. dev.) of sex ratio	105 (1.43)	103.9 (1.88)	103.7 (1.94)	103.4 (2.30)
Ancestral plough use	**1.063***	**1.481***	**1.660***	**2.298***
	(0.330)	**(0.380)**	**(0.408)**	**(0.498)**
Observations	132	132	132	132
R-squared	0.507	0.636	0.632	0.609
	Panel B: Second stage of 2SLS estimates			
Ancestral plough use	**1.248**	**2.286***	**2.425***	**3.396***
	(0.504)	**(0.628)**	**(0.664)**	**(0.820)**
	Panel C: First stage of 2SLS estimates. Dependent variable: Traditional plough use			
Plough-positive environment	0.727***	0.727***	0.727***	0.727***
	(0.089)	(0.089)	(0.089)	(0.089)
Plough-negative environment	0.191	0.191	0.191	0.191
	(0.169)	(0.169)	(0.169)	(0.169)
F-statistic (environment instruments)	40.9	40.9	40.9	40.9
World Bank region fixed effects	yes	yes	yes	yes
Mean (std. dev.) of ancestral plough use	0.64 (0.45)	0.64 (0.45)	0.64 (0.45)	0.64 (0.45)
Observations	131	131	131	131
R-squared	0.504	0.622	0.619	0.592

Notes: The unit of observation is a country. Coefficients are reported with robust standard errors in parenthesis. "Ancestral plough use" is the estimated proportion of citizens with ancestors that used the plough in pre-industrial agriculture. The variable ranges from 0 to 1. The dependent variables are the number of boys of a given age range per 100 girls, for the 1960-2009 period. The regressions include the historical and contemporary controls used in Table 1. The instruments comprise two variables: one mesauring the ancestral suitability of the environment for plough-positive crops (the average fraction of ancestral land that was suitable for growing barley, rye and wheat divided by the fraction that was suitable for any crops) and the ancestral suitability of the environment for plough-negative crops (the average fraction of ancestral land that was suitable for growing foxtail millet, pearl millet and sorghum divided by the fraction that was suitable for any crops). ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table D. Sex ratio between ages 0 and 4 and ancestral plough use.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Dependent variable: Sex ratio age 0 to 4				
	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	1960-2009 (pooled)	1960-2009 (average)
			Panel A: OLS estimates				
Mean (std. dev.) of dependent variable	102.6 (2.49)	102.9 (2.03)	103.2 (2.07)	103.7 (2.10)	104.1 (2.24)	103.4 (2.25)	103.6 (1.99)
Ancestral plough use	**1.527****	**1.424*****	**1.268*****	**1.155*****	**1.232****	**1.329*****	**1.194*****
	(0.744)	**(0.503)**	**(0.475)**	**(0.378)**	**(0.514)**	**(0.441)**	**(0.414)**
Observations	128	144	131	153	153	709	153
R-squared	0.506	0.563	0.616	0.639	0.490	0.567	0.613
			Panel B: Second stage of 2SLS estimanes				
Ancestral plough use	**2.384****	**1.917*****	**2.106*****	**1.371****	**1.816****	**1.881*****	**1.912*****
	(1.001)	**(0.703)**	**(0.739)**	**(0.541)**	**(0.801)**	**(0.650)**	**(0.644)**
		Panel C: First stage of 2SLS estimates. Dependent variable: Traditional plough use					
Plough-positive environment	0.733***	0.760***	0.718***	0.719***	0.697***	0.728***	0.741***
	(0.089)	(0.091)	(0.091)	(0.086)	(0.086)	(0.038)	(0.088)
Plough-negative environment	0.422**	0.284	0.412**	0.327*	0.254	0.337***	0.258
	(0.187)	(0.176)	(0.187)	(0.169)	(0.166)	(0.074)	(0.172)
F-statistic (environment instruments)	36.95	39.91	34.45	39.1	37.86	208.98	42.03
Continent fixed effects	yes	yes	yes	yes	yes	yes	yes
Mean (std. dev.) of ancestral plough use	0.58 (0.45)	0.61 (0.45)	0.59 (0.45)	0.63 (0.44)	0.63 (0.44)	0.61 (0.45)	0.63 (0.44)
Observations	127	143	130	152	152	704	152
R-squared	0.491	0.553	0.601	0.636	0.486	0.560	0.601

Notes: The unit of observation is a country. Coefficients are reported with robust standard errors in parenthesis. "Ancestral plough use" is the estimated proportion of citizens with ancestors that used the plough in pre-industrial agriculture. The variable ranges from 0 to 1. The dependent variables are the number of boys of a given age range per 100 girls, for the 1960-2009 period. The regressions include the historical and contemporary controls used in Table 1. The instruments comprise two variables: one mesauring the ancestral suitability of the environment for plough-positive crops (the average fraction of ancestral land that was suitable for growing barley, rye and wheat divided by the fraction that was suitable for any crops) and the ancestral suitability of the environment for plough-negative crops (the average fraction of ancestral land that was suitable for growing foxtail millet, pearl millet and sorghum divided by the fraction that was suitable for any crops). ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table E. Sex ratio between ages 5 and 14 and ancestral plough use.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Sex ratio age 5 to 14						
	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	1960-2009 (pooled)	1960-2009 (average)
	Panel A: OLS estimates						
Mean (std. dev.) of dependent variable	102.2 (3.37)	102.7 (2.96)	102.8 (2.54)	103.2 (2.17)	103.8 (2.39)	103 (2.74)	103.2 (2.36)
Ancestral plough use	2.370**	2.104***	1.803***	1.796***	1.533***	1.904***	1.744***
	(1.043)	(0.770)	(0.660)	(0.412)	(0.464)	(0.540)	(0.509)
Observations	128	144	131	153	153	709	153
R-squared	0.496	0.472	0.521	0.621	0.544	0.512	0.577
	Panel B: Second stage of 2SLS estimates						
Ancestral plough use	3.817**	2.895***	3.235***	2.768***	1.665**	2.877***	3.012***
	(1.496)	(1.050)	(1.094)	(0.706)	(0.792)	(0.841)	(0.851)
	Panel C: First stage of 2SLS estimates. Dependent variable: Traditional plough use						
Plough-positive environment	0.733***	0.760***	0.718***	0.719***	0.697***	0.728***	0.741***
	(0.089)	(0.091)	(0.091)	(0.086)	(0.086)	(0.038)	(0.088)
Plough-negative environment	0.422**	0.284	0.412**	0.327*	0.254	0.337***	0.258
	(0.187)	(0.176)	(0.187)	(0.169)	(0.166)	(0.074)	(0.172)
F-statistic (environment instruments)	36.95	39.91	34.45	39.1	37.86	208.98	42.03
Continent fixed effects	yes	yes	yes	yes	yes	yes	yes
Mean (std. dev.) of ancestral plough use	0.58 (0.45)	0.61 (0.45)	0.59 (0.45)	0.63 (0.44)	0.63 (0.44)	0.63 (0.44)	0.63 (0.44)
Observations	127	143	130	152	152	704	152
R-squared	0.480	0.464	0.495	0.604	0.540	0.499	0.555

Notes: The unit of observation is a country. Coefficients are reported with robust standard errors in parenthesis. "Ancestral plough use" is the estimated proportion of citizens with ancestors that used the plough in pre-industrial agriculture. The variable ranges from 0 to 1. The dependent variables are the number of boys of a given age range per 100 girls, for the 1960-2009 period. The regressions include the historical and contemporary controls used in Table 1. The instruments comprise two variables: one mesuaring the ancestral suitability of the environment for plough-positive crops (the average fraction of ancestral land that was suitable for growing barley, rye and wheat divided by the fraction that was suitable for any crops) and the ancestral suitability of the environment for plough-negative crops (the average fraction of ancestral land that was suitable for growing foxtail millet, pearl millet and sorghum divided by the fraction that was suitable for any crops). ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table F. Sex ratio and ancestral plough use, excluding Australia, New Zealand, South Africa, North and South America.

	(1)	(2)	(3)	(4)
	Sex ratio at birth	Sex ratio under age 1	Sex ratio age 0 to 4	Sex ratio age 5 to 14
	Panel A: OLS estimates			
Mean (std. dev.) of sex ratio	104.8 (1.58)	103.7 (2.09)	103.5 (2.17)	103.1 (2.56)
Ancestral plough use	**0.849***	**1.235****	**1.388****	**1.849*****
	(0.439)	**(0.495)**	**(0.532)**	**(0.652)**
Observations	125	125	125	125
R-squared	0.519	0.628	0.616	0.575
	Panel B: Second stage of 2SLS estimates			
Ancestral plough use	**1.023**	**2.424*****	**2.587*****	**3.448*****
	(0.718)	**(0.891)**	**(0.942)**	**(1.196)**
	Panel C: First stage of 2SLS estimates. Dependent variable: Traditional plough use			
Plough-positive environment	0.653***	0.653***	0.653***	0.653***
	(0.101)	(0.101)	(0.101)	(0.101)
Plough-negative environment	-0.061	-0.061	-0.061	-0.061
	(0.205)	(0.205)	(0.205)	(0.205)
F-statistic (environment instruments)	28.71	28.71	28.71	28.71
World Bank region fixed effects	yes	yes	yes	yes
Mean (std. dev.) of ancestral plough use	0.61 (0.47)	0.61 (0.47)	0.61 (0.47)	0.61 (0.47)
Observations	124	124	124	124
R-squared	0.514	0.605	0.594	0.548

Notes: The unit of observation is a country. Coefficients are reported with robust standard errors in parenthesis. "Ancestral plough use" is the estimated proportion of citizens with ancestors that used the plough in pre-industrial agriculture. The variable ranges from 0 to 1. The dependent variables are the number of boys of a given age range per 100 girls, for the 1960-2009 period. The regressions include the historical and contemporary controls used in Table 1. The instruments comprise two variables: one mesauring the ancestral suitability of the environment for plough-positive crops (the average fraction of ancestral land that was suitable for growing barley, rye and wheat divided by the fraction that was suitable for any crops) and the ancestral suitability of the environment for plough-negative crops (the average fraction of ancestral land that was suitable for growing foxtail millet, pearl millet and sorghum divided by the fraction that was suitable for any crops). ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table G. Sex ratio and ancestral plough use, including a dummy for Sub-Saharan Africa.

	(1)	(2)	(3)	(4)
	Sex ratio at birth	Sex ratio under age 1	Sex ratio age 0 to 4	Sex ratio age 5 to 14
	Panel A: OLS estimates			
Mean (std. dev.) of sex ratio	104.8 (1.44)	103.7 (1.90)	103.5 (1.98)	103.2 (2.35)
Ancestral plough use	**0.503**	**0.813****	**0.971****	**1.456*****
	(0.353)	**(0.381)**	**(0.415)**	**(0.486)**
Observations	153	153	153	153
R-squared	0.516	0.632	0.621	0.587
	Panel B: Second stage of 2SLS estimates			
Ancestral plough use	**0.384**	**1.372****	**1.559****	**2.654*****
	(0.566)	**(0.660)**	**(0.698)**	**(0.911)**
	Panel C: First stage of 2SLS estimates. Dependent variable: Traditional plough use			
Plough-positive environment	0.711***	0.711***	0.711***	0.711***
	(0.089)	(0.089)	(0.089)	(0.089)
Plough-negative environment	0.328*	0.328*	0.328*	0.328*
	(0.177)	(0.177)	(0.177)	(0.177)
F-statistic (environment instruments)	33.66	33.66	33.66	33.66
World Bank region fixed effects	yes	yes	yes	yes
Mean (std. dev.) of ancestral plough use	0.63 (0.45)	0.63 (0.45)	0.63 (0.45)	0.63 (0.45)
Observations	152	152	152	152
R-squared	0.514	0.625	0.613	0.568

Notes: The unit of observation is a country. Coefficients are reported with robust standard errors in parenthesis. "Ancestral plough use" is the estimated proportion of citizens with ancestors that used the plough in pre-industrial agriculture. The variable ranges from 0 to 1. The dependent variables are the number of boys of a given age range per 100 girls, for the 1960-2009 period. The regressions include the historical and contemporary controls used in Table 1. The instruments comprise two variables: one mesauring the ancestral suitability of the environment for plough-positive crops (the average fraction of ancestral land that was suitable for growing barley, rye and wheat divided by the fraction that was suitable for any crops) and the ancestral suitability of the environment for plough-negative crops (the average fraction of ancestral land that was suitable for growing foxtail millet, pearl millet and sorghum divided by the fraction that was suitable for any crops). ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table H. Sex ratio and ancestral plough use, list of countries included in Table 1.

AFRICA		ASIA		EUROPE		NORTH AMERICA	SOUTH AMERICA	OCEANIA
AGO	MDG	AFG	OMN	ALB	PRT	CAN	ARG	AUS
BDI	MLI	ARE	PAK	AUT	RUS	CRI	BOL	NZL
BEN	MOZ	BGD	PHL	BEL	SVK	CUB	BRA	
BFA	MRT	BHR	PRK	BGR	SVN	DOM	CHL	
BWA	MUS	CHN	QAT	BIH	SWE	GTM	COL	
CAF	MWI	GEO	SAU	BLR	UKR	HND	ECU	
CIV	NAM	GRC	SGP	CHE	YUG	HTI	PER	
CMR	NER	IDN	SYR	CZE		JAM	PRY	
COG	NGA	IND	THA	DEU		MEX	URY	
COM	REU	IRN	TJK	DNK		NIC	VEN	
CPV	RWA	IRQ	TKM	ESP		PAN		
DJI	SDN	ISR	TUR	EST		PRI		
DZA	SEN	JOR	UZB	FIN		SLV		
EGY	SLE	JPN	VNM	FRA		TTO		
ETH	SOM	KAZ	YEM	GBR		USA		
GAB	STP	KGZ		HRV				
GHA	SWZ	KHM		HUN				
GIN	SYC	KOR		IRL				
GMB	TCD	KWT		ITA				
GNB	TGO	LAO		LTU				
GNQ	TUN	LBN		LVA				
KEN	TZA	LKA		MDA				
LBR	UGA	MMR		MKD				
LBY	ZAF	MNG		NLD				
LSO	ZMB	MYS		NOR				
MAR	ZWE	NPL		POL				