Supplementary material: The Physiological Foundations of the Wealth of Nations

(Not for publication)

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1. Ethnic-group analysis

1.1. **List of sources on body density and population density.** In order to examine the determinants of body size and population density across ethnic groups we have augmented the Ethnographic Atlas by data on both. Table A.1. details, observation-by-observation, the exact source; the underlying source references follow after the table. The final data set draws on 35 different compilations and original papers from anthropology. In order to ensure that we match the ethnic groups correctly we have cross-checked by comparing the geographic location of the group (latitude/longitude) as reported in the Atlas with the individual studies. We have also double checked, in personal correspondence with Frank Marlowe, that the web source for his data indeed corresponds to the cited paper. Finally, Douglas White was kind enough to put at our disposal data on weight and population density (cf. Binford et al., 2012).

1.2. **Added variables plot for results reported in main text.** Figures A.1 and A.2. speak to the regression results for the ethnic group sample, reported in Table 2. In particular, the first figure reflects the estimates reported in Table 1, column 1, whereas Figure A.2. reflect the estimates from column 7.

1.3. **Alternative productivity measures.** In testing the models' predictions regarding the link between productivity on the on hand, and population density and body size on the other, we rely on a variable we call soil quality in the main text. This variable captures factors such as soil depth, fertility, drainage, texture, chemical and terrain slope constraints when assessing the scope for crop growth. Specifically, we employ the fraction of land (in a 200 km radius around the "center" of the ethnic group) which is not *unsuitable* for crop growth. The global distribution of the variable is depicted in Figure A.3., panel A. The source is `http://webarchive.iiasa.ac.at/Research/LUC/SAEZ/`, plate 27. As can be seen from the map, the areas selected as "unsuitable" are typically polar areas, deserts and the like.

The alternative productivity measure, which we employ below, is defined in a similar way to soil quality, but suitability is not based solely on soil conditions but also rainfall, temperature and sun hours. We refer to this variable below as "land quality", and it is analogous to the productivity measure we employ in the pixel level analysis. The global distribution of this variable can be assessed in Figure A.3, panel b. The source is `http://webarchive.iiasa.ac.at/Research/LUC/SAEZ/`, plate 47. The correlation between the two measures is 0.1, across ethnic groups. While the correlation is statistically significant it is sufficiently low to make the robustness check conducted below a non-trivial affair.

Figure A.1: Productivity and population density across ethnic groups

A: Soil quality   B: Precipitation

The figure shows the partial effect of soil quality on population density, while controlling for continent dummies and language fixed effects, across ethnic groups. Thus, the x- and y-axes plot the residuals obtained from regressing arable land on the aforementioned set of covariates. See Table 2, column 1 for point estimate and standard errors.

The figure shows the partial effect of (log) precipitation on population density, while controlling for continent dummies and language fixed effects, across ethnic groups. Thus, the x- and y-axes plot the residuals obtained from regressing precipitation on the aforementioned set of covariates. See Table 2, column 7 for point estimate and standard errors.

Figure A.2: Productivity and Body size across ethnic groups

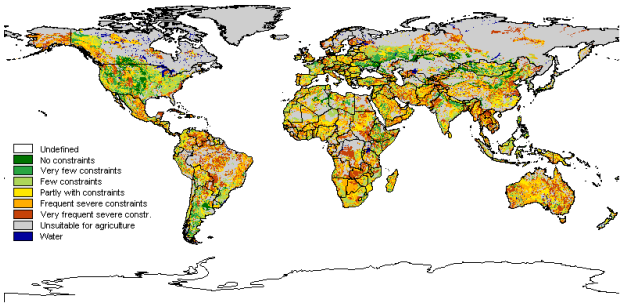
A: Soil quality   B: Precipitation

The figure shows the partial effect of soil quality on average weight, while controlling for continent dummies and language fixed effects, across ethnic groups. Thus, the x- and y-axes plot the residuals obtained from regressing arable land on the aforementioned set of covariates. See Table 2, column 7 for point estimate and standard errors.

The figure shows the partial effect of (log) precipitation on average weight, while controlling for continent dummies and language fixed effects, across ethnic groups. Thus, the x- and y-axes plot the residuals obtained from regressing precipitation on the aforementioned set of covariates. See Table 2, column 7 for point estimate and standard errors.

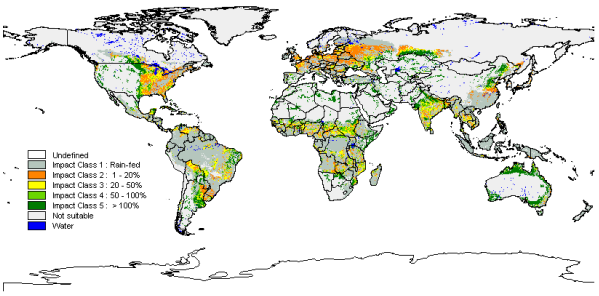
FIGURE A.3: DATA ON SOIL QUALITY AND LAND QUALITY

A: Soil quality



The figure shows the global distribution of soil quality, which is used in the main text.

B: Land quality



The figure shows the global distribution of land quality. The indicator takes into account soil conditions as well as climate (rain, temperature, sun hours) to assess the potential for crop growth.

1.4. **Further robustness checks.** Table A.2. checks whether the results in the main text appear fragile to the exclusion of European ethnic groups. Aside from the change in sample, the specifications are identical to those in the main text.

As can be seen the results are similar to those in the text. A difference is that the case of joint significance detected in Table 2 column 10 disappears when we drop the European groups (see column 10 in Table A.2.).

In Table A.3. we consider the alternative productivity proxy, land quality. In this case we therefore drop the direct controls for rainfall and temperature, as they are implicit in the productivity proxy. Otherwise the specifications are exactly as in Tables 2 and A.2.

We find a positive correlation between productivity and population density, as expected. Figure A.4. panel A depicts the partial correlation. Moreover, the point estimate seems fairly stable across specifications.

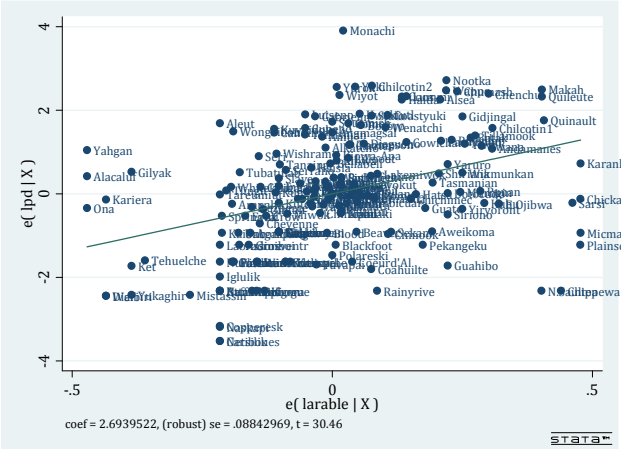
While the general impression is that of a non-significant link between land quality and body size we once again obtain a significant estimate in the specification where we only control for climatic factors (latitude and days without frost, column 9). However, as in previous cases the significance evaporates when we add the full set of controls (and in all the other specifications).

2. PIXEL-LEVEL ANALYSIS

2.1. **On the selected countries.** As noted in the article, we started by consulting Reher (2004) from which we selected the countries deemed by his estimates to be "latecomers" to the demographic transition (i.e., transition year after 1980). For a sub-group of these countries there is GPS survey data available from DHS around the year 2000: Bangladesh, Benin, Burkina Faso, Cambodia, Cote d'Ivoire, Ethiopia, Ghana, Guinea, Haiti, Mali, Malawi, Nepal, Niger, Togo and Uganda.

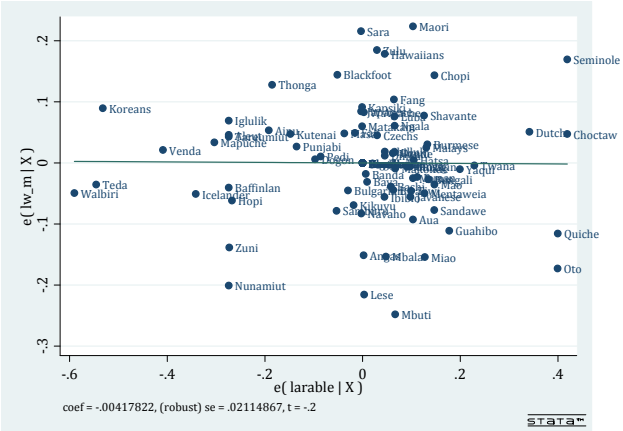
FIGURE A.4: PRODUCTIVITY, SIZE AND DENSITY

A: Productivity and density



The figure shows the partial effect of land quality on population density, while controlling for continent dummies and language fixed effects, across ethnic groups. Thus, the x- and y-axes plot the residuals obtained from regressing arable land on the aforementioned set of covariates. See Table A.2, column 1 for point estimate and standard errors

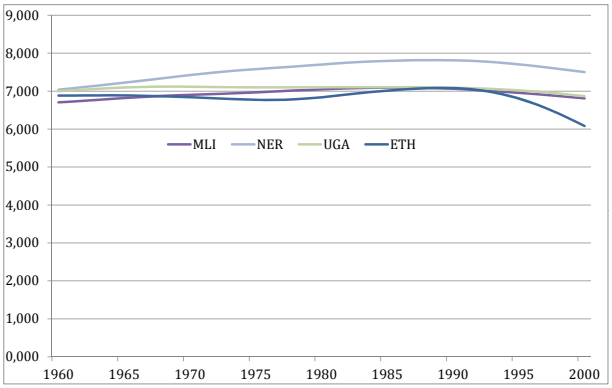
B: Productivity and body size



The figure shows the partial effect of arable land on average weight, while controlling for continent dummies and language fixed effects, across ethnic groups. Thus, the x- and y-axes plot the residuals obtained from regressing arable land on the aforementioned set of covariates. See Table A.2, column 6 for point estimate and standard errors

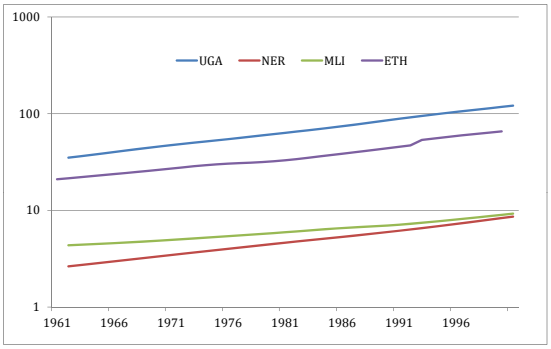
FIGURE A.5: AGGREGATE FERTILITY PATTERNS FOR COUNTRIES IN THE PIXEL SAMPLE

A: Total fertility rate



The figure shows the evolution of the total fertility rate, 1960-2000 in Ethiopia, Mali, Niger and Uganda. Data Source: World Development Indicators.

B: Population density

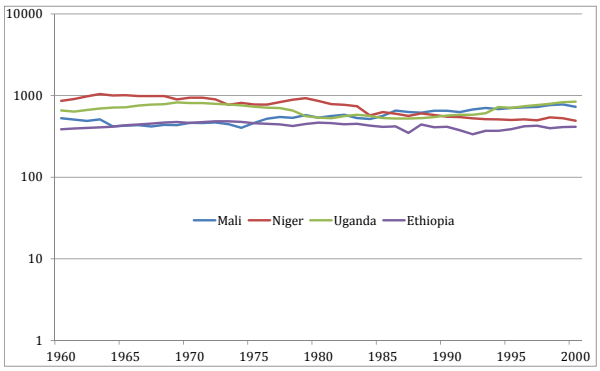


The figure shows the evolution of population density, 1960-2000 in Ethiopia, Mali, Niger and Uganda. Note that the vertical axis is log scale. Data Source: World Development Indicators.

For this smaller group we subsequently examined total fertility rates from 1960 onwards (data from World Development Indicators), and found that only four countries did not experience peak fertility until ca. 1990: Ethiopia, Mali, Niger and Uganda. In the remaining countries the peak occurs much earlier, and in some cases already in the 1970s (e.g., Bangladesh, Cote d'Ivoire and Ghana).*

*Reher's (2004) analysis is based on crude birth rates, which may not decline for a while even though the total fertility rate has begun to decline.

FIGURE A.6.: AGGREGATE INCOME PATTERNS FOR COUNTRIES IN THE PIXEL SAMPLE



The figure shows the evolution of income per capita, 1960-2000 in Ethiopia, Mali, Niger and Uganda. Note that the vertical axis is log scale; the slope can thus be interpreted as the growth rate of GDP per capita. Data source: Penn World Tables 7.1. Heston et al., 2012.

The path of the total fertility rates is depicted in Figure A.5, panel A. As is clear, Ethiopia does reach a peak early in the period, but evidently experiences a revival of fertility. It is not until around 1990 that fertility starts declining in earnest; we interpret the earlier peak as a part of a cycle.

In all four countries the total fertility rate is very high, with peak fertility around 7. Hence, it is not a surprise that the countries experienced increasing population density over the period, as seen from Figure A.5, panel B.

Finally, Figure A.6. depicts the evolution of GDP per capita (from Penn World Tables 7.1.; Heston et al., 2012). Evidently growth in income per capita has essentially been absent in all four countries since 1960 at an income level of about 2-3 PPP$ per day.

Taken together these stylized facts suggest to us that the four countries in question are reasonable candidates for being in a Malthusian state of stagnation. As a result, our model *should* a priori hold explanatory power in this setting, which opens the possibility of rejecting the implications of the model. At the same time, the scope for selection bias should be limited as we analyze the within country variation.

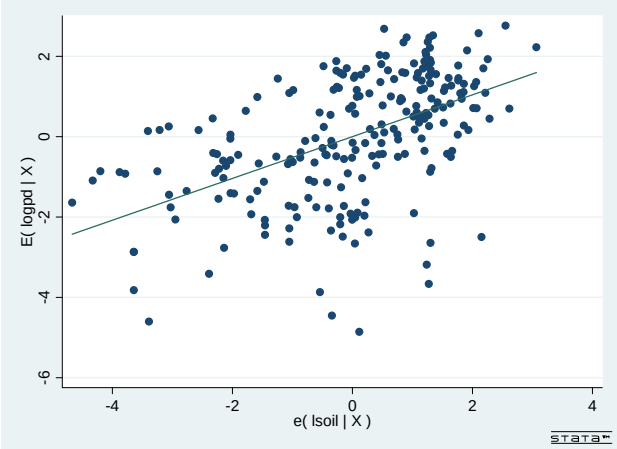
2.2. **Added variables plot for results reported in main text.** Figure A.7 depicts the partial correlation between land quality and population density and body size, respectively. In both cases the estimated slopes do not appear to be affected by outliers.

2.3. **Robustness checks.** In Table A.4. we add additional geography controls to the basic specification adopted in the text. As can be seen this does matter to the economic significance of land quality, which drops. Perhaps predictably, as temperature is implicit in the land quality measure. Nevertheless, land quality remains significantly correlated with density, but not with body size.

The last columns allows for a comparison between the results for density and body size, when controlling for the sample. It can be observed that the significance of land quality

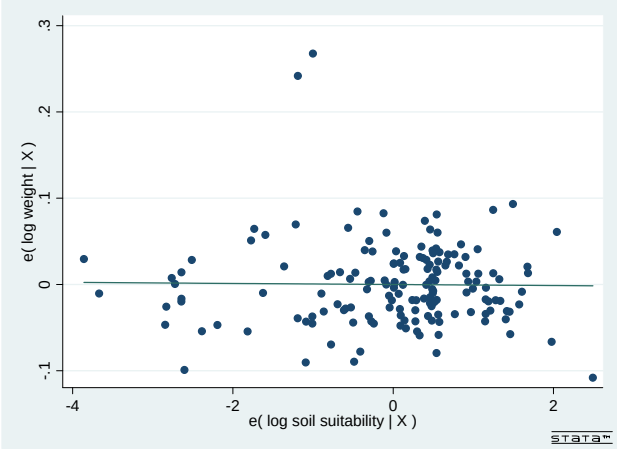
FIGURE A.7: PRODUCTIVITY, POPULATION DENSITY AND WEIGHT ACROSS REGIONS

A: Population density and productivity



The figure shows the partial effect of (log) land quality on population density, while controlling for country fixed effects, across regions in Ethiopia, Mali, Niger, and Uganda. See Table 3, column 2 for point estimate and standard errors.

B: Weight and productivity



The figure shows the partial effect of (log) land quality on log weight, while controlling country fixed effects, across regions in Ethiopia, Mali, Niger, and Uganda. See Table 3, column 7 for point estimate and standard errors.

obtains when we focus on the same sample as that where body size is measured and that the point estimates only change to a minimal extent.

In Table A.5. we check the robustness of the results by dropping the individual countries one-by-one. The first column checks the main results (full specification) without Ethiopia; the next drops Uganda instead and so on. As can be seen, these sample permutations do not change the general message.

Table A.6 and A.7, finally, examines the link between economic activity, measured by earth lights, and body size. The data on earth lights derive from Michaelopolous and Papaioannou (2012) and we follow them in controlling for population density so as to focus on per capita activity. In addition we include the control set from the regressions above, and examine the link between economic activity (per capita) and body size. The difference between the two tables is whether we only examine lit pixel's or not. Table A.6. uses all data whereas Table A.7. focuses only on lit pixels.

In the first column we look at a parsimonious specification without country fixed effects; both density and body weight have the expected sign and are significant, except in the small sample (lit pixels) where weight is (marginally) insignificant. When additional controls are added the statistical significance is strengthened for weight. This is true both when we examine the full data set, and when we only consider lit pixels. These patterns are consistent with the model, which suggests a positive correlation between weight and economic activity; weight stimulates income, and greater income supports greater body size.

References

Binford, Lewis R., Amber L. Johnson, Douglas R. White, and E. Anthon Eff., 2012. Coded Rdata and Codebook on Height and Population Density. Available at `http://intersci.ss.uci.edu/wiki/index.php/Coded_Rdata_and_Codebook_on_Height_and_Population_Density`

Heston, A., R. Summers and B. Aten, Penn World Table Version 7.1, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, Nov 2012

Michaelopolous, S and E. Papaioannou, 2012. Pre-colonial Ethnic Institutions and Contemporary African Development. *Econometrica* (forthcoming)

Reher, D. S., 2004. The demographic transition revisited as a global process. *Population Space and Place* 10, 19–42.

World Development Indicators. Available at `http://data.worldbank.org/data-catalog/world-development-indicators`

Data References

Please note that the name listed in Table A.1. are found in bold after the full reference.

Anders Gustafsson, Patrik Lindenfors, 2009. Latitudinal Patterns in Human Stature and Sexual Stature Dimorphism. Annals of Human Biology, 36(1): 74–87 **(gustav)**

J. Hiernaux, P. Rudan, A. Brambati, 1975. Climate and the Weight/Height Relationship in Sub-Saharan Africa. Annals of Human Biology, 2(1):3–11 **(Hiernaux75)**

J. Hiernaux, 1968. Variabilit du Dimorphisme Sexuel de la Stature en Afrique Subsaharienne et en Afrique. In: K. Saller (ed.) Anthropologie und Humangenetik, Gustav Fisher Verlag, pp. 42–50 **(Hiernaux)**

P.B. Eveleth, J.M. Tanner, 1976. Worldwide Variation in Human Growth. Cambridge: Cambridge University Press **(Eveleth and Tanner)**

D.F. Roberts, 1953. Body Weight, Race and Climate. Am J Phys Anthropol., 11(4):533–58. **(Roberts)**

C. Ruff, 1994. Morphological Adaptation to Climate in Modern and Fossil Hominids. Yearbook of Physical Anthropology, 37 **(Ruff)**

E. Crognier, 1979. Natural selection and physical adaptation to a biotype of tropical Africa. W.A. Stini (ed.) Physiological and morphological adaptation and evolution, Paris: Mouton Publishers, pp. 69–80 **(Crognier)**

A. Froment, J. Hiernaux, 1984. Climate-associated anthropometric Variation between Populations of the Niger. Annals of Human Biology, 11: 189-200 **(Froment)**

C. Holden, R. Mace, 1999. Sexual Dimorphism in Stature and Women's Work: A Phylogenetic Cross-Cultural Analysis. Am J Phys Anthropol, 110: 27–45. **(Holden)**

R.S. Rattray, 1955. Ashanti. London: Oxford University Press **(Rattray)**

E.A. Hooton, C.W. Dupertius, H. Dawson, 1955. The Physical Anthropology of Ireland. Papers Peabody Mus 30, no. 1 and 2. **(Hooton)**

F. Auger, P.L. Jamison, J. Balslev-Jorgensen, T. Lewin, J.F. de Pena, J. Skrobak-Kaczynski, 1980. Anthropometry of Circumpolar Populations. F.A. Milan (ed.) The Human Biology of Circumpolar Populations, Cambridge: Cambridge University Press, pp. 213-256 **(Auger)**

S.M. Ayatollahi, R.G. Carpenter, 1993. Height, Weight, BMI and Weight-for-height of Adults in Southern Iran: How should Obesity be Defined? Annals of Human Biology, 20: 13-19 **(Ayatollahi)**

W. Jochelson, 1908. The Koryak. New York: G.E. Steckert. **(Jochelson)**

E. Vlcek, 1965. A Contribution to the Anthropology of the Khalka-Mongols. Acta Fac Rerum Anthropol 9: 285-367 **(Vlcek)**

K.C. Chen, 1976. Taiwan Aborigines: A Genetic Study of Tribal Variations. Cambridge: Harvard University Press **(Chen)**

H. Field, 1970. Contributions to the Physical Anthorpology of the Peoples of India. Florida: Field Research Projects. **(Field)**

S.S. Strickland, S.J. Ulijaszek, 1993. Resting Energy Expenditure and Body Composition in Rural Sarawaki Adults. Am J Hum Biol 5: 341-350 **(Strickland)**

P. Schebesta, 1952. Die Negrito Asiens. Vienna: St Gabriel Verlag **(Schebesta)**

J.S. Friedlaender, 1987. The Solomon Islands Project. A Long-term Study of Health, Human Biology, and Culture Change. Oxford: Clarendon Press **(Friedlaender)**

I.A. Prior, A. Hooper, J.W. Huntsman, J.M. Stanhope, C.E. Salmond, 1977. The Tokelau Island Migrant Study. In: G.A. Harrison (ed.) Population Structure and Human Variation, Cambridge: Cambridge University Press, pp. 165-186 **(Prior)**

J. Comas, 1971. Anthropometric Studies in Latin American Indian Populations. In: F.M. Salzano (ed.) The Ongoing Evolution of Latin American Populations, Springfield: Charles C. Thomas, pp. 333-404 **(Comas)**

D. Jenness, 1923. Report of the Canadian Arctic Expedition 1913-1918. Volume XII: Part B: Physical Characteristics of the Copper Eskimos. Ottawa: Acland. **(Jennes)**

S. Stinson, 1990. Variation in Body Size and Shape among South-American Indians. Am J Hum Biol 23: 37-51 **(Stinson)**

J.A. Birbeck, M. Lee, G.S. Myers, B.M. Alfred, 1971. Nutritional Status of British Columbia Indians II. Anthropometric Measurements, Physical and Dental Examinations at Ahousat and Anaham. Can J Public Health 62: 403-414 **(Birbeck)**

E.J. Szathmary, N. Holt, 1983. Hyperglycemia in Dogrib Indians of the Northwest Territories, Canada: Association with Age and a Centripetal Distribution of Body Fat. Hum Biol 55: 493-515 **(Szathmary)**

A. Hrdlicka, 1935. The Pueblos. Am J Phys Anthropol 20: 235-460. **(Hdlicka)**

S.J. Ulijaszek, 1993. Evidence for a secular trend in heights and weights of adults in Papua New Guinea. Ann Hum Biol., 20(4):349-55 **(Ulijaszek)**

J. Hiernaux, 1968. La Diversit Humaine en Afrique Subsaharienne. Bruxelles : Ed. de l'Inst. de Sociologie **(Hiernaux1)**

E. Crognier, 1973. Adaptation morphologique d'une population africaine au biotope tropical: les Sara du Tchad. Bulletins et Mmoires de la Socit d'anthropologie de Paris, XII Srie, tome 10 fascicule 1, pp.3-151 **(Crognier1)**

Walker, R.S. and M.J. Hamilton, 2008. Life-history consequences of density dependence and the evolution of human body size. Current Anthropology 49, 115-122 **(Walker and Hamilton)**

Marlowe, F, 2005. Hunter-Gatherers and Human Evolution. Evolutionary Anthropology 14:54 67. Available at `http://intersci.ss.uci.edu/wiki/index.php/Binford_forager_data` **(Marlow)**

Binford, Lewis R., Amber L. Johnson, Douglas R. White, and E. Anthon Eff., 2012. Coded Rdata and Codebook on Height and Population Density. Available at `http://intersci.ss.uci.edu/wiki/index.php/Coded_Rdata_and_Codebook_on_Height_and_Population_Density` **(Binfordetal)**

Keely, Lawrence H., 1988. Hunter-Gatherer Economic Complexity and population pressure: A cross-cultural analysis. Journal of anthropological archaeology 7, 373-411 **(Keeley)**

Table A2: Eliminating Ethnic Groups from high income countries, basic productivity measures

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	log Pop Density						log weight					
soil quality	1.600***	1.241**	0.682***	1.674***	1.698***	0.389**	0.023	0.031	-0.007	0.009	0.064	-0.025
	(0.349)	(0.512)	(0.239)	(0.373)	(0.368)	(0.144)	(0.086)	(0.079)	(0.051)	(0.064)	(0.066)	(0.047)
precipitation (log)	1.008***	0.964***	0.805***	1.046***	1.082***	0.803***	-0.005	-0.016	0.045***	-0.013	-0.011	0.030
	(0.036)	(0.067)	(0.042)	(0.045)	(0.045)	(0.034)	(0.021)	(0.024)	(0.009)	(0.012)	(0.019)	(0.024)
Controls:												
Continental FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Language FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Location	no	yes	no	no	no	yes	no	yes	no	no	no	yes
Climate	no	no	yes	no	no	yes	no	no	yes	no	no	yes
Institutions	no	no	no	yes	no	yes	no	no	no	yes	no	yes
Agricultural dep.	no	no	no	no	yes	yes	no	no	no	no	yes	yes
Arable=0 and Precipitation =0 (p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.96	0.81	0.00	0.23	0.61	0.39
Observations	194	188	194	191	194	188	83	77	83	77	82	76
R-squared	0.515	0.556	0.612	0.535	0.541	0.694	0.522	0.569	0.643	0.564	0.530	0.696

Notes: (i) "Continents" refers to continental fixed effects; "Language fixed effects" refer to linguistic sub-families for which there are up to 57 (V99 in the Atlas). Our full specification 6 (12) involves 23 (22) such fixed effects; "Location" controls for distance from coast and river, landmass within 100km of coast and settlement patterns (V30 in the Atlas); "Climate" controls for absolute latitude, temperature and days without frost; "Institutions" control for Jurisdictional Hierarchy Beyond Local Community (V33 in the Atlas);"Agricultural dep" controls for dependence on animal husbandy and agriculture (V4 and V5 in the Atlas). All regressions contain a constant term. (ii) The 3rd row from below tests whether Arable land and Percipitation are jointly insignificant. (iii) *** , **, * denote significance at 1, 5 and 10%, respectively. (iv) Standard errors are clustered at the linguistic sub-family level. (v) Identical sample regssions were not attempted due to a minimal sample overlap (N=19).

Rich countries means all European groups are deleted along with "Japanese" and "Korean"

Table A3: Ethnic groups (alternative productivity measure)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	log Pop Density								log weight			
land quality (log)	2.694***	2.545***	2.048***	2.829***	3.014***	-0.004	-0.048	0.040	-0.044*	-0.026	0.011	-0.025
	(0.088)	(0.142)	(0.144)	(0.089)	(0.133)	(0.021)	(0.039)	(0.030)	(0.021)	(0.020)	(0.076)	(0.047)
Controls:												
Continental FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Language FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Location	no	yes	no	no	no	yes	no	yes	no	no	no	yes
Climate	no	no	yes	no	no	yes	no	no	yes	no	no	yes
Institutions	no	no	no	yes	no	yes	no	no	no	yes	no	yes
Agricultural dep.	no	no	no	no	yes	yes	no	no	no	no	yes	yes
Arable=0 and Precipita	0.000	0.000	0.000	0.000	0.000	0.000	0.96	0.81	0.00	0.23	0.61	0.39
Observations	194	188	194	191	194	188	83	77	83	77	82	76
R-squared	0.515	0.556	0.612	0.535	0.541	0.694	0.522	0.569	0.643	0.564	0.530	0.696

Notes: (i) "Continents" refers to continental fixed effects; "Language fixed effects" refer to linguistic sub-families for which there are up to 57 (V99 in the Atlas). Our full specification 6 (12) involves 23 (22) such fixed effects; "Location" controls for distance from coast and river, landmass within 100km of coast and settlement patterns (V30 in the Atlas); "Climate" controls for absolute latitude, and days without frost; "Institutions" control for Jurisdictional Hierarchy Beyond Local Community (V33 in the Atlas);"Agricultural dep" controls for dependence on animal husbandy and agriculture (V4 and V5 in the Atlas). All regressions contain a constant term. (ii) The 3rd row from below tests whether Arable land and Percipitation are jointly insignificant. (iii) *** , **, * denote significance at 1, 5 and 10%, respectively. (iv) Standard errors are clustered at the linguistic sub-family level. (v) Identical sample regssions were not attempted due to a minimal sample overlap (N=19).

Rich countries means all European groups are deleted along with "Japanese" and "Korean"

Table A.4. Additional controls, pixel level analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	log pop density				log weight				log pop density			
land quality (log)	0.176**	0.239***	0.320***	0.177*	0.005	0.003	0.001	0.006	0.163**	0.258**	0.338**	0.192**
	(0.046)	(0.037)	(0.042)	(0.068)	(0.008)	(0.005)	(0.005)	(0.007)	(0.041)	(0.056)	(0.084)	(0.048)
temperature	-0.201**			-0.190*	0.007			0.007	-0.259**			-0.145
	(0.058)			(0.080)	(0.007)			(0.008)	(0.059)			(0.102)
elevation (log)		0.974*		0.079		-0.037		-0.012		1.793**		1.087
		(0.381)		(0.258)		(0.029)		(0.025)		(0.499)		(0.877)
border (distance)			0.002	0.000			0.000	0.000			0.002	-0.000
			(0.002)	(0.003)			(0.000)	(0.000)			(0.002)	(0.001)
Control:												
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Climate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geography	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Location	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	229	229	229	229	157	157	157	157	157	157	157	157
R-squared	0.630	0.615	0.596	0.630	0.712	0.707	0.698	0.715	0.614	0.616	0.538	0.628

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

Table A.5. Varying country coverage pixel level analysis

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	log pop density				log weight			
Land quality (log)	0.341**	0.313**	0.307***	0.398**	0.008	0.003	0.004	-0.005
	(0.051)	(0.053)	(0.026)	(0.064)	(0.007)	(0.011)	(0.006)	(0.005)
Controls:								
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Climate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geography	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Location	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	140	204	177	166	98	137	126	110
Sample	No ETH	No UGA	No NER	No MLI	No ETH	No UGA	No NER	No MLI
R-squared	0.673	0.592	0.542	0.622	0.415	0.715	0.816	0.613

Notes: The control set includes country fixed effects, malaria ecology, absolute latitude, log area, terrain ruggedness and controls for distance to major river, distance to ocean and distance to capital, respectively. (ii) *** , **, * denote significance at 1, 5 and 10%, respectively.
(iii) Standard errors are culstered at the country level. (iv) colmn 1 and 5 omits Ethiopia; 2 and 6 omits Uganda; 3 and 7 omits Niger and 4 and 8 omits Mali
(vi) The dependent variable in cols 1-4 is population density in 2000; in 5-8 it is average (female) body size.

Table A.6. Economic activity, body size and population density

VARIABLES	(1)	(2)	(3)	4	5	6	7
	log earthlights						
log weight	0.456*	0.773	0.789*	0.772*	0.782*	0.787*	0.763*
	(0.187)	(0.342)	(0.324)	(0.311)	(0.332)	(0.325)	(0.312)
log pop density	0.041**	0.044**	0.046**	0.050**	0.048**	0.046**	0.050**
	(0.009)	(0.010)	(0.012)	(0.013)	(0.012)	(0.012)	(0.013)
temperature				0.004			0.005
				(0.002)			(0.008)
elevation (log)					-0.015		-0.003
					(0.050)		(0.077)
Border (distance)						0.000	0.000
						(0.000)	(0.000)
Controls:							
Country FE	No	Yes	Yes	Yes	Yes	Yes	Yes
Climate	No	No	Yes	Yes	Yes	Yes	Yes
Geography	No	No	Yes	Yes	Yes	Yes	Yes
Location	No	No	Yes	Yes	Yes	Yes	Yes
Observations	157	157	157	157	157	157	157
R-squared	0.211	0.245	0.271	0.273	0.272	0.272	0.276

Notes: "Climate" controls for malaria ecology and absolute latitude; "Geography" controls for log area of the pixl and terrain ruggedness; "Location" controls for distance to major river, distance to ocean and distance to capital, respectively. (ii) *** , **, * denote significance at 1, 5 and 10%, respectively. (iii) Standard errors are culstered at the country level.

Table A.7. Economic activity, body size and population density (only lit pixel's)

	(1)	(2)	(3)	4	5	6	7
VARIABLES	log earthlights						
log weight	0.573	0.998	1.331*	1.313*	1.328*	1.329*	1.304**
	(0.266)	(0.513)	(0.463)	(0.443)	(0.463)	(0.440)	(0.409)
log pop density	0.053**	0.060	0.072**	0.078**	0.075**	0.072**	0.078**
	(0.016)	(0.026)	(0.018)	(0.021)	(0.014)	(0.016)	(0.021)
temperature				0.005			0.006
				(0.006)			(0.018)
elevation (log)					-0.017		0.005
					(0.050)		(0.114)
Border (distance)						0.000	0.000
						(0.000)	(0.000)
Controls:							
Country FE	No	Yes	Yes	Yes	Yes	Yes	Yes
Climate	No	No	Yes	Yes	Yes	Yes	Yes
Geography	No	No	Yes	Yes	Yes	Yes	Yes
Location	No	No	Yes	Yes	Yes	Yes	Yes
Observations	109	111	109	109	109	109	109
R-squared	0.205	0.245	0.342	0.345	0.343	0.342	0.345

Notes: "Climate" controls for malaria ecology and absolute latitude; "Geography" controls for log area of the pixl and terrain ruggedness; "Location" controls for distance to major river, distance to ocean and distance to capital, respectively. (ii) *** , **, * denote significance at 1, 5 and 10%, respectively. (iii) Standard errors are culstered at the country level.

Data sources
Ethnic group sample

Ethnic Group	Weight Mal	Sourcewightmale	Weight Fem	Source(FemWgt)	Pop Density (sq km)	Source (pdens)
Ababda						
Abarambo						
Abelam						
Abipon						
Abkhaz						
Abnaki						
Abor						
Abron						
Acholi						
Achomawi					0,1725	Binford et al
Acoma						
Adangme						
Afar						
Afghans						
Afikpo						
Afo						
Agaiduka					0,04	Keely
Ahaggaren						
Aimol						
Ainu	57,1	Eveleth and Tanner			0,44	Marlowe
Ajie						
Akha						
Akyem						
Alacaluf					0,1498	Binford et al
Alagya						
Aleut	67,7	Ruff			0,55	Marlowe
Algerians	64,8	Eveleth and Tanner	56,1	Eveleth and Tanner		
Alkatcho					0,075	Binford et al
Alorese						
Alsea					0,97	Marlowe
Alur						
Amahuaca						
Amarar						
Amba						
Ambo						
Ambonese						
Amhara						
Ami						
Anaguta						
Anc,Egypt						
Andamanes					0,33	Marlowe
Anfillo						
Angami						
Angas	45,5	Ulijaszek	37,1	Ulijaszek		
Angmagsal					0,0772	Binford et al
Annamese						
Antaisaka						
Antandroy						
Antarianu						
Antessar						
Anuak						
Anyi						
Ao						
Apinaye						
Aranda						
Arapaho					0,08	Marlowe
Arapesh						
Arbore						
Arikara						
Armenians						
Arusi						

Aryans					
Asben					
Ashanti					
Assini					
Assiniboi				0,03	Marlowe
Atayal					
Atsakudok					
Atsugewi				0,18	Marlowe
Attawapis				0,01	Marlowe
Attie					
Aua	54,3	Roberts			
Aueto					
Aullimind					
Avikam					
Aweikoma				0,04	Marlowe
Awuna					
Aymara					
Azande					
Azjer					
Aztec					
Babwa					
Babylonia					
Bacairi					
Bachama					
Baditu					
Baffinlan	62,1	Binford et al		0,01	Marlowe
Bafia					
Baga					
Bagirmi					
Baiga					
Bajun					
Bakhtiari					
Bako					
Bakovi					
Bakwe					
Balante					
Bali					
Balinese					
Bambara					
Bamileke					
Bamum					
Banaro					
Banda	54,6	Hiernaux1975			
Banen					
Banna					
Bannock				0,02	Marlowe
Banyang					
Banyun					
Barabra					
Baramacar					
Barea					
Bari					
Basa					
Basakomo					
Basari					
Bashi	53,5	Roberts			
Basketo					
Basques					
Bassari					
Basseri					
Bata					
Batak			40,8 Walker and Hamilton (2008)	0,43	Marlowe
Baule					
Baya	53,9	Roberts			
Beatty					
Beaver				0,01	Marlowe

Bellabell					0,21	Marlowe
Bellacool					0,13	Marlowe
Belu						
Bemba						
Bena						
Bende						
Bengali	52,7	Roberts				
Beniamer						
Beraber						
Berabish						
Bergdama						
Bete						
Betsileo						
Bgu						
Bhil						
Biafada						
Bihari						
Bijogo						
Bikinians						
Bilaan						
Bira	53,2	Hiernaux1975				
Birifor						
Birom						
Bisa						
Bisayan						
Bisharin						
Blackcari						
Blackfoot	74,7	Eveleth and Tanner	64,2	Eveleth and Tanner	0,03	Marlowe
Blood					0,04	Marlowe
Bobo						
Bodi						
Boers						
Bogo						
Bohogue					0,01	Marlowe
Boki						
Bolewa						
Bombesa						
Bomvana						
Bongo						
Bontok						
Bororo					0,51	Marlowe
Bororoful						
Borrom						
Botocudo					0,1	Marlowe
Bozo						
Brazilian						
Bribri						
Bubi						
Budja						
Budu						
Buduma						
Buem						
Builsa						
Bulgarian	68,8	Ruff	60,2	Ruff		
Bunda						
Bungi						
Bunlap						
Bunun						
Bura						
Burji						
Burmese	55,8	Eveleth and Tanner	47,7	Eveleth and Tanner		
Burusho						
Buryat						
Busama						
Buye						
Bwaidoga						

Bwaka					
Byeloruss					
Caddo					
Caduveo					
Cagaba					
Cahuilla				0,44	Marlowe
Cakchique					
Callinago					
Camaracot					
Camayura					
Camba					
Cambodian	56,8	Eveleth and Tanner			
Campa					
Cantonese					
Caraja					
Cariboues				0,003	Marlowe
Carinya					
Carolinia					
Carrier				0,08	Marlowe
Catawba					
Cayapa					
Cayua					
Chacobo					
Chagga					
Chahar					
Chakma					
Cham					
Chamacoco					
Chamba					
Chamorro					
Chawai					
Chechen					
Chekiang					
Chemehuev					
Chenchu			1,23		Marlowe
Cheremis					
Cherkess					
Cherokee					
Chewa					
Cheyenne				0,05	Marlowe
Chibcha					
Chichimec				0,09	Binford et al
Chickasaw				0,09	Marlowe
Chiga					
Chilcotin1				0,12	Marlowe
Chilcotin2				0,33	Keeley
Chimariko				0,5	Marlowe
Chin					
Chinantec					
Chinook				0,34	Marlowe
Chipewyan				0,01	Keely
Chippewa				0,01	Binford et al
Chiricahu				0,01	Marlowe
Chiriguan					
Chitimach					
Choco					
Choctaw	67,8	Roberts			
Choiseule					
Chokwe					
Chopi	61,6	Hiernaux1975			
Choroti					
Chorti					
Chugach				0,12	Marlowe
Chukchee					
Chumash			1,18		Marlowe
Chaamba					

Coahuilte						0,0168	Binford et al
Coastyuki						0,67	Marlowe
Cocama							
Cochiti							
Cocopa							
Coeurd'Al						0,02	Marlowe
Comanche						0,02	Binford et al
Comox						0,55	Marlowe
Coniagui							
Conibo							
Coorg							
Coos					1,04		Marlowe
Copperesk						0,0043	Marlowe
Coroa							
Cowichan						0,35	Marlowe
Creek							
Crow						0,06	Marlowe
Cubeo							
Cuna							
Cupeno						0,49	Marlowe
Curipaco							
Czechs	75,3	Eveleth and Tanner	63,5	Eveleth and Tanner			
Dagari							
Dagomba							
Dagur							
Dahuni							
Daka							
Dakakari							
Dan							
Dani							
Darasa							
Dard							
Daza							
Delaware							
Delim							
Dera							
Dian							
Didinga							
Diegueno						0,18	Marlowe
Dieri						0,01	Marlowe
Digo							
Dilling							
Dime							
Dinka	59,1	Crognier1					
Diola							
Diula							
Djafun							
Djuka							
Dobuans							
Dogon	58,9	Froment	51,1	Froment			
Dogrib	66,6	Binford et al				0,01	Marlowe
Dorobo						0,41	Marlowe
Dorosie							
Dorse							
Drawa							
Druze							
Duala							
Duruma							
Dusun							
Dutch	71,4	Eveleth and Tanner	60	Eveleth and Tanner			
Dzem	56,6	Roberts					
Dzing							
E,Cree							
E,Mono							
E,Ojibwa						0,08	Keely
E,Pomo					1,27		Marlowe

Easter						
Edo						
Efik						
Egba						
Egyptians						
Ekiti						
Ekoi						
Ekonda						
Elema						
Elkoshosh						
Ellice						
Elyshosho						
Enga						
Epi						
Eromangan						
Esa						
Ewe						
Eyak					0,06	Marlowe
Fajulu						
Falasha						
Fali	58,4	Hiernaux1975				
Fang	61,7	Hiernaux1975				
Fanti						
Fipa						
Flathead					0,02	Marlowe
Fon						
Fore						
Fox						
Frenchcan						
Fungom						
Fur						
Fut						
Futajalon						
Futunans						
Ga						
Gabrielin					0,65	Marlowe
Gagu						
Galab						
Ganda						
Garo						
Gbande						
Gbari						
Georgians						
Gheg						
Gibe						
Gidjingal					0,73	Marlowe
Gilyak					0,19	Marlowe
Gimma						
Giriama						
Gisiga						
Gisu						
Goajiro						
Gogo						
Gola						
Goldi						
Goroa						
Gosiute					0,02	Marlowe
Gr,Eyland			42	Walker and Hamilton	0,23	Marlowe
Greeks	73	Eveleth and Tanner	58,7	Eveleth and Tanner		
Greenland						
Grosventr					0,03	Marlowe
Guahibo	57,8	Binford et al	47,3	Binford et al	0,01763	Binford et al
Guanche						
Guato					0,07	Marlowe
Guaymi						
Gude						

Gujarati						
Gurage						
Gure						
Gurma						
Guro						
Gusii						
Ha						
Habbania						
Hadendowa						
Hadimu						
Haida					0,97	Marlowe
Haisla					0,19	Marlowe
Haitians						
Hamama						
Hamilton						
Hammar						
Hamyan						
Hano						
Hanunoo						
Hasania						
Hasinai						
Hatsa	53,6	Eveleth and Tanner	47,7	Eveleth and Tanner	0,24	Marlowe
Havasupai						
Hawaiians	77,3	Roberts				
Haya						
Hazara						
Hebrews						
Hehe						
Hemat						
Herero						
Hidatsa						
Hillbhuiy						
Hillsuk						
Ho						
Hona						
Hopi	60,8	Roberts				
Huastec						
Huave						
Huchnom						
Huichol						
Hukundika						
Hunde	56,5	Hiernaux1975				
Hungarian	74,6	Eveleth and Tanner	56,2	Eveleth and Tanner		
Hupa					0,8	Marlowe
Huron						
Hutsul						
Iatmul						
Iban						
Ibibio	52,6	Hiernaux1975				
Ibo						
Icelander	64,5	Roberts				
Idoma						
Ifaluk						
Ife						
Ifora						
Ifugao						
Igala						
Igbira						
Iglulik	69,3	Eveleth and Tanner	57,8	Eveleth and Tanner	0,014	Keeley
Ijaw						
Ila						
Ili-Mandi						
Inca						
Ingalik					0,03	Marlowe
Ingassana						
Iowa						

Iranians	59,4	Eveleth and Tanner	50,8	Eveleth and Tanner		
Iraqw						
Irish			61,5	Eveleth and Tanner		
Iroquois						
Isala						
Ishigakia						
Isleta						
Isoko						
Itsekiri						
Iwa						
Jacaltec						
Janjero						
Japanese	58,9	Ruff	48,9	Ruff		
Javanese	51,2	Roberts				
Jebala						
Jemez						
Jibu						
Jicaque						
Jicarilla						
Jie						
Jimma						
Jivaro						
Jordanian						
Jukun						
Jur						
Kababish						
Kabre						
Kabyle						
Kachari						
Kachin						
Kadara					0,5	Binford et al
Kafa						
Kagoro						
Kaguru						
Kaibab					0,04	Marlowe
Kakoli						
Kakwa						
Kalinga						
Kalispel					0,02	Marlowe
Kalmyk						
Kamba						
Kamia						
Kamuku						
Kanawa						
Kanembu						
Kanuri						
Kaoka						
Kaonde						
Kapauku						
Kapingama						
Kapsiki	58	Hiernaux1975				
Kara						
Karamojon						
Karankawa					0,21	Marlowe
Karekare						
Karen						
Kariera					0,1	Marlowe
Karok					0,47	Marlowe
Kasena						
Kashmiri						
Kaska					0,01	Marlowe
Kasonke						
Katab						
Katikiteg						
Kawaiisu					0,12	Marlowe
Kazak	69,7	Roberts				

Kei					
Kela					
Kentu					
Keraki					
Kerala					
Kerewe					
Ket				0,02	Marlowe
Keweyipay					
Keyu					
Khalka	66,5	Eveleth and Tanner	56,3 Eveleth and Tanner		
Khasi					
Khevsur					
Khmer					
Khond					
Kickapoo					
Kidutokad					
Kikuyu	51,9	Roberts			
Kiliwa				0,12	Marlowe
Kimam					
Kiowa				0,01	Marlowe
Kiowa-Apa				0,04	Marlowe
Kipsigis					
Kisama					
Kissi					
Kiwai					
Klahuse					
Klallam					
Klamath				0,13	Marlowe
Klikitat					
Koalib					
Kodi					
Kohistani					
Koiari					
Koita					
Koko					
Kol					
Kom					
Koma					
Kongo					
Konjo					
Konkomba					
Konso					
Koobe					
Koranko					
Koreans	59,2	Roberts			
Koro					
Korongo					
Koryak					
Koso				0,09	Marlowe
Kota					
Kotoko					
Koya					
Kpe					
Kpelle					
Kran					
Kru					
Kuba					
Kubu				0,09	Marlowe
Kuikuru					
Kuki					
Kuku					
Kukuruku					
Kulango					
Kumu					
Kumyk					
Kunama					

Kunda						
Kundu						
Kung					0,25	Kelly
Kunta						
Kurama						
Kurd						
Kurtatchi						
Kusaians						
Kusasi						
Kutchin			55	Walker/Hamilton	0,02	Marlowe
Kutenai	67,8	Binford et al			0,02	Marlowe
Kutshu						
Kutubu						
Kuyuidoka					0,48	Keely
Kwaio						
Kwakiutl					0,69	Marlowe
Kwere						
Kwoma						
Labradore					0,03	Marlowe
Labwor						
Lacandon						
Laguna						
Laka						
Lakalai						
Lakemiwok					0,65	Binford et al
Laketonga						
Lakeyokut					0,381	Binford et al
Lakher						
Lala						
Lalia						
Lamba						
Lamet						
Lamotrek						
Lango						
Lapps						
Lassik						
Lasvegas						
Lau						
Lawa						
Lebanese						
Lele						
Lenca						
Lendu						
Lenge						
Lengua						
Lepcha						
Lese	43,4	Ruff	38,2	Ruff	0,45	Kelly
Lesu						
Lhota						
Li						
Lidashosh						
Lifu						
Lillooet					0,24	Marlowe
Lipan					0,01	Marlowe
Liptako						
Lithuania						
Lobi						
Locono						
Logo						
Lokele						
Lolo						
Longuda						
Lotuko						
Lovedu						
Lowiili						
Lozi						

Luapula							
Luba	60	Crognier1					
Luchazi							
Lugbara							
Luguru							
Luimbe							
Luiseno						0,68	Marlowe
Lulua							
Lummi					1,05		Marlowe
Luo							
Luvale							
Luwa							
Macassare							
Macha							
Macusi							
Madan							
Madi							
Mafulu							
Magar							
Maguzawa							
Mahaguadu							
Maidu						0,24	Marlowe
Mailu							
Majuro							
Makah					1,23		Marlowe
Makin							
Makitare							
Makonde	55,1	Hiernaux1975					
Makua							
Malays	55,5	Roberts					
Male							
Malinke							
Mam							
Mambila							
Mambwe							
Mamprusi							
Mamvu							
Man							
Manam							
Manchu							
Mandan							
Mandja							
Mangaians							
Mangareva							
Mangbetu							
Manihikia							
Manobo							
Manus	58,1	Ulijaszek	50	Ulijaszek			
Mao	51,5	Roberts					
Maori	74,5	Roberts					
Mapuche	66,8	Roberts					
Margi							
Mariagond							
Maricopa							
Marindani							
Marquesan							
Marri							
Marshalle							
Masa							
Masai	61,3	Roberts					
Mataco							
Matakam	56,2	Hiernaux1975					
Mattole					1,16		Marlowe
Maue							
Mazateco							
Mbala	47,7	Hiernaux1975					

Mbandja						
Mbaufijia						
Mbugwe						
Mbum						
Mbundu						
Mbuti	43,4	Ruff	38,2	Ruff	0,44	Marlowe
Meban						
Mekeo						
Mende						
Menomini						
Mentaweia	51,5	Roberts				
Merina						
Meru						
Mesakin						
Mescalero						
Messiria						
Miami						
Miao	46,4	Roberts				
Micmac					0,04	Marlowe
Midobi						
Mikir						
Mimika						
Minangkab						
Minchia						
Minchines						
Minianka						
Miriam						
Miskito						
Mistassin					0,01	Marlowe
Miwok					0,25	Marlowe
Mixe						
Mixtec						
Miyakans						
Mnonggar						
Moache						
Moanunts						
Moapa						
Moba						
Modoc					0,23	Marlowe
Mogh						
Moghol						
Mohave						
Molima						
Monachi					5,05	Keely
Mondari						
Mongo						
Monguor						
Montagnai						
Moro						
Moroccans						
Moru						
Mossi	58,2	Froment	51,3	Froment		
Mota						
Motilon						
Motu						
Mpongwe						
Muju						
Mumuye						
Mundang						
Mundurucu						
Muong						
Muriagond						
Murinbata						
Murngin	59,2	Binford et al	43,5	Binford et al	0,12	Marlowe
Musgu						
Mutair						

Mzab							
N,Pomo				1,08			Marlowe
N,Saultea					0,01		Marlowe
Nabesna					0,01		Marlowe
Nail							
Nama							
Nambicuar					0,08		Marlowe
Namshi							
Nandi							
Nankanse							
Naron							
Naskapi					0,0042		Marlowe
Natchez							
Nauruans							
Navaho	62,7	Roberts					
Ndaka							
Ndau							
Ndebele							
Ndembu							
Ndob							
Ndoko							
Ndoro							
Neapolita							
Negrisemb							
Netsilik					0,003		Binford et al
Newenglan							
Nezperce					0,09		Marlowe
Ngala	59,1	Eveleth and Tanner	48,2	Eveleth and Tanner			
Ngarawapu							
Ngbandi							
Ngere							
Ngizim							
Ngombe							
Ngonde							
Ngoni							
Ngulu							
Ngumba							
Ngumbi							
Nicobares							
Nipigon					0,01		Marlowe
Nisenan					0,4		Marlowe
Niueans							
Nkundo							
Nomlaki					0,35		Marlowe
Nomoians							
Nono							
Nootka				1,54			Marlowe
Nsaw							
Nsungli							
Nuer							
Nunamiut	52,9	Binford et al	37,9	Binford et al	0,01		Marlowe
Nunivak					0,02		Binford et al
Nunuma							
Nupe							
Nuri							
Nyakyusa							
Nyamwezi							
Nyaneka							
Nyanja							
Nyankole							
Nyaro							
Nyasa							
Nyima							
Nyoro							
Obostyak							
Ojibwa							

Okinawans						
Omaha						
Ona					0,07	Marlowe
Onotoa						
Ontong-Ja						
Opata						
Oraon						
Orokaiva						
Osset						
Oto	54,4	Hiernaux1975				
Otomi						
Otoro						
Ottawa						
Paez						
Pahari						
Pahvant						
Paiwan						
Palauans						
Palaung						
Palikur						
Panamint					0,02	Marlowe
Panare						
Panguitch						
Papago						
Paraujano					0,35	Marlowe
Pare						
Paressi						
Pari						
Pathan						
Patwin					0,82	Marlowe
Pawnee						
Pedi	56,2	Hiernaux1975				
Pekangeku					0,03	Marlowe
Pende						
Penobscot						
Pepel						
Piapoco						
Piaroa						
Picuris						
Piegan						
Pima						
Pimbwe						
Piro						
Pl,Tonga						
Plainsbir						
Plainscre					0,03	Marlowe
Plainssuk						
Podokwo						
Pokomam						
Pokomo						
Polareski					0,0041	Marlowe
Ponapeans						
Ponca						
Pondo						
Popoi						
Popoluca						
Portugues						
Potawatom						
Poto						
Pukapukan						
Puku						
Punan	52,9	Binford et al	37,9	Binford et al	0,12	Marlowe
Punjabi	55,6	Eveleth and Tanner	48,4	Eveleth and Tanner		
Purari						
Purum						
Puyallup					0,37	Marlowe

Puyuma							
Qashgai							
Quiche	57,6	Roberts					
Quileute					1,04		Marlowe
Quinault						0,59	Marlowe
Rainyrive						0,01	Marlowe
Ramcocame							
Rangi							
Ranon							
Raroians							
Reddi							
Rega							
Regeibat							
Rengma							
Rennell							
Reshe							
Rhade							
Riffians							
Romanians							
Romans							
Rossel							
Rotinese							
Rotumans							
Ruanda							
Rucuyen							
Rumbi							
Rundi							
Russians	71,3	Eveleth and Tanner					
Rwala							
S,Pomo					1,11		Marlowe
S,Ute							
Safwa							
Sagada							
Sahel							
Sakalava							
Sakata							
Salinan						0,37	Marlowe
Samaroken							
Samburu	54	Eveleth and Tanner					
Samo							
Samoans							
Sandawe	49,4	Roberts					
Sanema							
Sanga							
Sangu							
Sanjuan							
Sanpoil						0,11	Marlowe
Santaclar							
Santacruz							
Santal	45	Roberts					
Santee							
Santodomi							
Santaana							
Sanusi							
Sapei							
Sapo							
Sara	66,8	Ruff	58,3	Ruff			
Saramacca							
Sarsi						0,02	Marlowe
Satudene						0,01	Marlowe
Sawakudok							
Sekani						0,01	Marlowe
Selkup							
Selung							
Sema							
Semang						0,18	Marlowe

Seminole	76,6	Eveleth and Tanner	69	Eveleth and Tanner			
Sena							
Seniang							
Senoi	47,6	Roberts					
Senufo							
Serbs							
Serer							
Seri						0,25	Marlowe
Serrano						0,18	Marlowe
Shako							
Shambala							
Shangama							
Shantung							
Shasta						0,25	Marlowe
Shavante	69,8	Eveleth and Tanner	57,9	Eveleth and Tanner			
Shawiya							
Shawnee							
Sherbro							
Sherente							
Sherpa							
Shila							
Shilluk	59,5	Crognier1					
Shiriana						0,16	Marlowe
Shivwits							
Shluh							
Shogo							
Shona							
Shuswap						0,12	Marlowe
Shuwa							
Sia							
Siamese							
Siane							
Sidamo							
Simboese							
Sindhi							
Sinhalese							
Sinkaietk						0,15	Marlowe
Sinkyone					1,36		Marlowe
Sio							
Siriono						0,06	Marlowe
Siuai							
Siuslaw							
Sivokakme							
Siwans							
Slave						0,036	Keely
Soga							
Somali							
Somba							
Songe							
Songhai							
Songo							
Songola							
Soninke							
Sonjo							
Soromadja							
Sotho							
Span,Basq							
Spaniards							
Springval						0,06	Marlowe
Squamish						0,57	Marlowe
Stalo						0,66	Marlowe
Starmount							
Subanun							
Sugbuhano							
Suku							
Sukuma							

Sumbanese						
Sumbawane						
Sumbwa						
Sundi						
Suri						
Susu						
Svan						
Swazi						
Syrians						
Saadi						
Tagbanua						
Tagotoka						
Tahitians						
Tahltan					0,01	Marlowe
Taino						
Takelma						
Tallensi						
Tamil						
Tanaina					0,05	Marlowe
Tanala						
Tanga	59,3	Hiernaux1975				
Tanimbare						
Tannese						
Taos						
Tapirape						
Taqagmiut						
Tarahumar						
Tarasco						
Tareumiut	67,5	Binford et al	61,2	Walker/Hamilton	0,1	Keeley
Tasmanian					0,15	Kelly
Tatoga						
Taulipang						
Taviwatsi						
Tawi-Tawi						
Tazarawa						
Teda	51,5	Hiernaux1975				
Tehuelche					0,02	Marlowe
Teita						
Teke						
Tekna						
Telugu						
Tem						
Temne						
Tenetehar						
Tenino					0,19	Marlowe
Tepehuan						
Tequistla						
Tera						
Terena						
Teso						
Tetela						
Teton					0,09	Marlowe
Tewa						
Thado						
Thompson					0,33	Marlowe
Thonga	63,2	Hiernaux1975				
Tibetans						
Tigon						
Tigre						
Tigrinya						
Tikar						
Tikopia						
Tillamook					0,41	Marlowe
Timucua						
Tira						
Tiriki						

Tiv						
Tiwi	56,9	Binford et al			0,38	Marlowe
Tlaxcalan						
Tlingit					0,11	Marlowe
Toba						
Tobelores						
Toda						
Toedokado						
Tokelau1						
Tokelau2						
Tolkepaya						
Tolowa				1,22		Marlowe
Toma						
Tongans						
Tongareva						
Topoke						
Topotha						
Toradja						
Toro						
Totonac						
Trarza						
Tristan						
Trobriand						
Trukese						
Trumai						
Tsamai						
Tsimshian					0,42	Marlowe
Tswana						
Tubaduka						
Tubatulab					0,17	Marlowe
Tuburi						
Tucuna						
Tukano						
Tukudika						
Tukulor						
Tullishi						
Tumbuka						
Tunava						
Tunebo						
Tunisians						
Tupinamba						
Tura						
Turkana						
Turkmen						
Turks						
Turu						
Tututni					0,67	Marlowe
Twana	64,4	Binford et al			0,32	Marlowe
Tzeltal						
Ubamer						
Udalan						
Uintah					0,07	Marlowe
Ukrainian						
Ulawans						
Ulithians						
Umatilla					0,11	Marlowe
Umotina						
Uncompahg					0,04	Marlowe
Upolu						
Uru						
Usiai						
Uttarprad						
Uveans						
Uzbeg						
Vagala						
Vai						

Vanualevu							
Vedda						0,19	Marlowe
Venda	56,8	Hiernaux1975					
Vere							
Vugusu							
W,Apache	74	Eveleth and Tanner					
Wadadokad							
Wadaduka							
Wadatkuht							
Waica							
Waiwai							
Walapai						0,04	Marlowe
Walbiri	56,7	Binford et al	45,4	Walker/Hamilton		0,01	Marlowe
Walloons							
Wantoat							
Wapishana							
Wappo					1,21		Marlowe
Waropen							
Warrau							
Washo						0,15	Marlowe
Wenatchi						0,5	Marlowe
Whiteknif						0,12	Marlowe
Wichita							
Widekum							
Wikmunkan						0,19	Marlowe
Windriver						0,02	Marlowe
Winnebago							
Wintu						0,59	Marlowe
Wishram					2,32		Marlowe
Witoto							
Wiyambitu							
Wiyot					1,08		Marlowe
Wodaabe							
Wogeo							
Wolof							
Wongaibon						0,51	Marlowe
Wukchumni						0,24	Marlowe
Wute							
Xam							
Xhosa							
Yabarana							
Yagua							
Yahanduka							
Yahgan						0,28	Marlowe
Yaka							
Yako							
Yakut							
Yalunka							
Yami							
Yana						0,31	Marlowe
Yanomamo							
Yanzi							
Yao							
Yapese							
Yaqui	64	Roberts					
Yaruro						0,2	Marlowe
Yatenga							
Yavapai	71	Binford et al	45,4	Walker/Hamilton		0,01	Marlowe
Yeke							
Yemeni							
Yergum							
Yiryoront						0,08	Marlowe
Yokuts							
Yombe							
Yoruba	56,2	Eveleth and Tanner	51,8	Eveleth and Tanner			
Yucatecma							

Yuchi							
Yukaghir						0,01	Marlowe
Yuki					1,32		Marlowe
Yuma							
Yungur							
Yupa							
Yurak							
Yurok					1,31		Marlowe
Zapotec							
Zazzagawa							
Zekara							
Zenaga							
Zerma							
Zigula							
Zinza							
Zuande							
Zulu	66,9	Eveleth and Tanner	70,8	Eveleth and Tanner			
Zuni	56,3	Roberts					