**Supplementary Methods (Distance Matrix Creation)**

**Linguistic distance between countries**

Linguistic distance between two countries was calculated as the cultural proximity between all languages spoken within those countries, weighted by speaker percentages. We acquired cultural proximity data by combining the language family trees provided by Glottolog v3.0 (1) into one global language tree (undated and unresolved). We calculated cultural proximity between two languages and  as the distance (in number of nodes traversed) of their most recent common ancestor to the root of the tree, through the formula:

where  is the maximum path length (in number of nodes traversed) leading to the pan-human root , and  is the maximum path length leading to node .

Next, we combined these proximities with speaker data from Ethnologue 21 (2) and compared every language spoken within those countries by at least 1 permille of the population, weighted by speaker percentages, through the formula:

where  is the percentage of the population in nation  speaking language ,  is the percentage of the population in nation  speaking language , and  is the proximity measure between languages  and (3).

**Geographic distance between countries**

Geographic distance was calculated as the geodesic distance between country capital cities (data from the R package *maps,*4) using the package *geosphere* (5).

**References**

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