

# Shape of countries appears to have had an impact on cultural diversity

June 12 2012, by Bob Yirka

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(Phys.org) -- Back in 1997 Jared Diamond published a book called *Guns, Germs and Steel*. In it, he argued that Eurasian civilizations tended to dominate their neighbors throughout history because they were broader, east to west, than others around them, and because of that, more culturally homogenous. The reasons for that he wrote, were due to agricultural similarities between its peoples as opposed to those from other countries that were taller north to south, which would have them spanning several types of climates. There has been a lot of discussion regarding Diamond's ideas over the years, but no real testing of them, until now. David Laitina, Joachim Moortgatb and Amanda Lea Robinson have constructed a test by correlating cultural diversity with language diversity. They then counted language diversity for a number of countries comparing that data with geographical data and found, as they describe in their paper published in the *Proceedings of the National Academy of Sciences*, that Diamond's theories appear to hold.

In their test, the team collected data from 147 countries as they exist today. Specifically, they counted the number of languages that are spoken in each and compared that with the shape of the country in which they live. In so doing, they found that if a country was wide, such as Mongolia or Turkey, it tended to have fewer languages spoken than if it was long and thin, as is the case with Peru or Chile. This, the team says, gives credence to Diamond's theories.

To give more weight to their findings the team tried to account for cultural or language persistence due to other factors such as mountains,

age of the country and how far it was from the equator. In doing so, they found their original results still held. Then, to show that empire building east to west versus north to south wasn't just a result of those in broader countries having more interest in doing so, the team created virtual [countries](#) by combining some with their neighbors. Even after doing that they found Diamond's assumptions continued to hold up, suggesting that his underlying ideas were likely sound; namely that it's easier for a group of people to build a civilization if they are able to build a unified system of agriculture and to domesticate the same types of animals that can be moved around and used for food, agriculture and for moving things around.

Despite their research findings, the team readily admits that basing their work on correlating [cultural diversity](#) and [language diversity](#) may be a bit of a stretch, but suggest that it's the best possible way to test the ideas set forth by Diamond given the obvious constraints in trying to measure such hypothetical historical trends.

**More information:** Geographic axes and the persistence of cultural diversity, *PNAS*, Published online before print June 11, 2012, [doi: 10.1073/pnas.1205338109](#)

### **Abstract**

Jared Diamond's *Guns, Germs, and Steel* [Diamond J, (1997) *Guns, Germs, and Steel* (WW Norton, NY)] has provided a scientific foundation for answering basic questions, such as why Eurasians colonized the global South and not the other way around, and why there is so much variance in economic development across the globe. Diamond's explanatory variables are: (i) the susceptibility of local wild plants to be developed for self-sufficient agriculture; (ii) the domesticability of large wild animals for food, transport, and agricultural production; and (iii) the relative lengths of the axes of continents with implications for the spread of human populations and technologies. This

third “continental axis” thesis is the most difficult of Diamond’s several explanatory factors to test, given that the number of continents are too few for statistical analysis. This article provides a test of one observable implication of this thesis, namely that linguistic diversity should be more persistent to the degree that a geographic area is oriented more north-south than east-west. Using both modern states and artificial geographic entities as the units of analysis, the results provide significant confirmation of the relationship between geographic orientation and cultural homogenization. Beyond providing empirical support for one observable implication of the continental axis theory, these results have important implications for understanding the roots of cultural diversity, which is an important determinant of economic growth, public goods provision, local violence, and social trust.

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