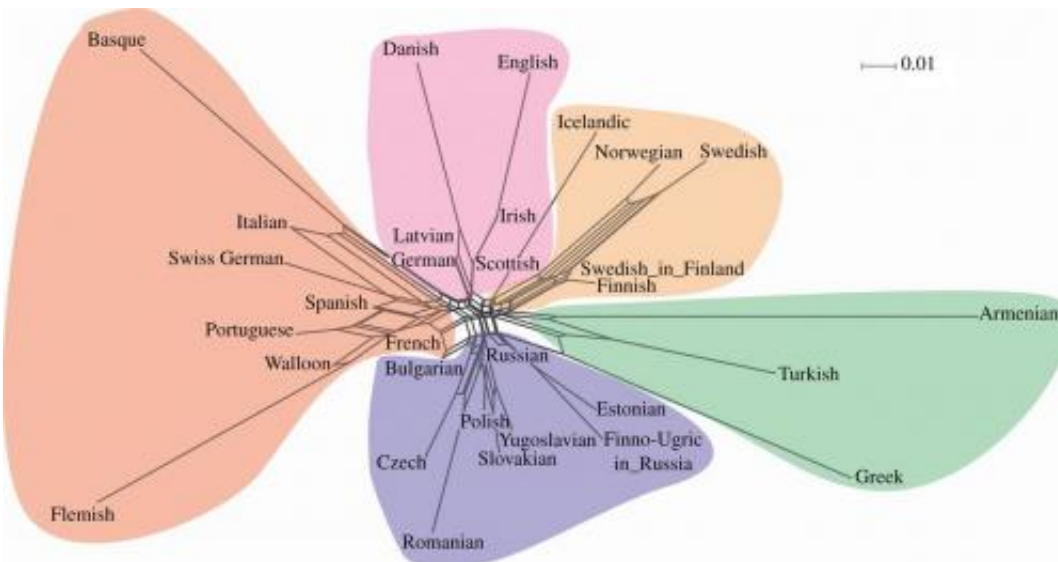


# Study shows cultural flow may be slower than genetic divergence

February 7 2013, by Bob Yirka



Population structure and cultural geography of a folktale in Europe. Credit: (c) Proceedings of the Royal Society B, doi: 10.1098/rspb.2012.3065

(Phys.org)—A team of researchers from New Zealand and Australia has found that cultural exchange in human populations sometimes occurs at a much slower rate than genetic divergence. As the group explains in their paper published in *Proceedings of the Royal Society B*, they found that a popular folktale was slower to migrate between different groups of people, than were gene transfers.

[Human history](#) is filled with folktales, and oftentimes similar tales

appear in the record of different cultures. One of those is referred to as the "kind and unkind girls" tale. It's about two girls—one who is nice to everyone she meets and is eventually rewarded for it with gifts of gold—the other girl is mean and nasty and winds up being given a box of snakes. Historians have found many variations on this tale—in some it's two boys, in others it's women of different classes. What remains the same is the moral. In this new study, the researchers sought to compare the way the story spread from one culture to another in Europe, as compared to the way cultures mingle and procreate.

In analyzing historic documents, the researchers found 700 variants of the tale from cultures across Europe as they existed over a hundred years ago—in 31 languages. They then compared [genetic records](#) of the people that currently live in those cultural areas with the different tale variants they'd found. In so doing, they found that people living in close proximity, but of different cultural backgrounds, were ten times as likely to produce children with one another as they were to take on the different version of the tale. This, the team suggests, shows that assimilation of cultural aspects, particularly if there are language differences involved, is much slower than the spread of genes across geographic areas.

The team notes that in Europe today, there are very few differences in the [gene pools](#) of different countries, indicating a very high degree of comingling. At the same time, most of the countries in Europe have managed to hold on to many of their cultural differences. This suggests they say, that cultural traits are less likely to cross borders, than are genes. But language differences aren't the only reason that culture doesn't travel—the researchers also found many instances of differing variants of the tale between people that lived close together and spoke the same language, indicating that there are other factors involved as well in some areas.

**More information:** Population structure and cultural geography of a folktale in Europe, *Proceedings of the Royal Society B*, Published online February 6, 2013 [doi: 10.1098/rspb.2012.3065](https://doi.org/10.1098/rspb.2012.3065)

## **Abstract**

Despite a burgeoning science of cultural evolution, relatively little work has focused on the population structure of human cultural variation. By contrast, studies in human population genetics use a suite of tools to quantify and analyse spatial and temporal patterns of genetic variation within and between populations. Human genetic diversity can be explained largely as a result of migration and drift giving rise to gradual genetic clines, together with some discontinuities arising from geographical and cultural barriers to gene flow. Here, we adapt theory and methods from population genetics to quantify the influence of geography and ethnolinguistic boundaries on the distribution of 700 variants of a folktale in 31 European ethnolinguistic populations. We find that geographical distance and ethnolinguistic affiliation exert significant independent effects on folktale diversity and that variation between populations supports a clustering concordant with European geography. This pattern of geographical clines and clusters parallels the pattern of human genetic diversity in Europe, although the effects of geographical distance and ethnolinguistic boundaries are stronger for folktales than genes. Our findings highlight the importance of geography and population boundaries in models of human cultural variation and point to key similarities and differences between evolutionary processes operating on human genes and culture.

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