Darwin and language diversity
Warriors or farmers - who spread Indo-European languages?

How about language as a marker of origin and migration? We can use phylogenetic methods to infer the ancestry of languages and probe human history, to find out, for instance, where different groups of people have come from and where they moved to.

Quentin Atkinson:
Biologists are using human DNA from around the world to reconstruct the human story from Africa around the globe – how we colonised the globe. But at more recent timescales, the genes aren't changing fast enough to provide a signal over the last ten thousand years. So genetic data – its resolution breaks down at more recent timescales. What's nice about the language diversity is that because languages change much more quickly we can use them to kind of fill in that last little bit of human history. And so just like biologists can look at the differences in gene sequences between species, and they can then work out how long ago those species must have separated, we can use the same technique and apply it to languages. Look at the different words in the different Indo-European languages and count how many changes we see and then work out what time must have elapsed to produce that amount of change. We used that kind of approach to test between two competing theories for the origin of the Indo-European languages.

Rissa:
One theory suggested that the Indo-European languages were spread with a warrior horse-riding culture called the Kurgans, from the Russian steppes about five or six thousand years ago. The other proposed that the languages spread more passively from Anatolia, what's now Turkey, with the spread of farming, eight to ten thousand years ago. Could the family tree of the Indo-European languages itself shed light on the problem? For Atkinson, the answer emerged through a collaboration with Professor Russell Gray at the University of Auckland.

Quentin Atkinson:
What we found was that the age of the Indo-European language family was around eight thousand five hundred years. Crucially the range when you allow for some statistical error in our estimate was between 7500 and 9500 years. That fits nicely with the farming theory but it allows us to rule out the 5 to 6000 year age suggested by the Kurgan theory. So that's really quite strong evidence in support of the spread with farming.

Rissa:
So much for illuminating the past.