



Charting the 'DNA' of tongues to analogise the march of language



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WATCH YOUR LANGUAGE

NOT for the first time, the origin of human language is in the news. In the 19th century there was so much debate, most of which was leading nowhere, that the Societe Linguistique de Paris banned further discussion. The most recent contribution to what is a surprisingly controversial topic comes from Quentin Atkinson at the University of Auckland. His research suggests parallels between genetic and linguistic evolution and has caught the attention of the media overseas as well as in New Zealand. The question of where language comes from is such a tricky one because it is so difficult to retrace the steps of language evolution very far back in time. As a result, most linguists are reluctant to make bold statements about the early origins of human language. Written evidence only goes back about 5500 years, and anything before that is a matter of some conjecture, based on what we know about how languages change and about the relationships between them. Linguists have long been interested in the similarities and differences between languages. For instance, patterns in the words and sounds of languages across Europe and the Indian subcontinent have allowed us to build family trees for languages and to reconstruct the likely forms of an ancestor language that has been dubbed Proto-Indo-European, from which most modern European languages are descended along with Indo-Iranian languages like Kurdish, Hindu, Urdu, and Punjabi.

Similar family trees have been suggested for other language

families around the world, but few linguists have been bold enough to go even further back in time to connect the lines between these families and suggest what a "Proto-World" language might have been like or where it might have originated.

When experts consider the origin of language – explanations of divine intervention excluded – they look beyond language itself for supporting evidence from archaeology, anthropology, physiology, psychology and other disciplines.

At some point in the past, humanoids started walking upright and developed body structures that made it possible for them to produce the complex sequences of sound that make up language.

They also developed the mental capacity – linked to changes in brain size – to communicate about things that are not visibly obvious in the immediate environment, to choose not to talk about something, and even to tell untruths. Archaeological and genetic evidence suggests that the relevant physical and biological changes took place in Africa tens of thousands of years ago – how many tens of thousands is unclear.

ATKINSON'S data fitted well with that general picture, but came from a quite different approach. What he looked for is a parallel in language change to changes that take place in genetic diversity as populations divide and migrate.

Start with a large group of people, with a reasonable amount of genetic diversity. If a subgroup of that initial group moves elsewhere, then they take only

part of that genetic diversity with them – the migratory group shows less genetic variation than the original group.

Take this further and further away from the original group and you would expect further reductions in genetic diversity.

The picture is not quite as simple as this, as groups will then come into contact with one another again and mix the gene pool, but the basic pattern is there and – so I understand – supported by patterns of genetic diversity in modern populations.

Atkinson looked for similar patterns of changing diversity in the sounds used by languages. Using data from linguistic atlases put together by linguists around the world, he fed the numbers of distinct speech sounds for around 500 languages into a statistical model.

This model showed that as you follow the probable migratory pathways of early humans from Africa through the Middle East to Europe and Asia, and from Asia on to the Americas and through the Pacific, so you find reductions in the number of distinct speech sounds, that is, in the linguistic diversity of at least this aspect of languages.

We are used to talking about languages as things that are living and evolving, and we talk about languages dying when their last speakers pass away. Linguists will no doubt take part in some lively debate about the further genetic parallels in Atkinson's work.

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