LINGUISTICS

New Method Puts Elusive Indo-European Homeland in Anatolia

Among all the world’s language families, Indo-European is by far the most global. Today its more than 400 languages are spoken by some 3 billion people on every inhabited continent. But who were the first Indo-European speakers, and where did they come from? Researchers have argued fiercely over two major competing candidates: Neolithic farmers who carried their agricultural know-how with them as they pushed out from Anatolia, chiefly in modern Turkey; or Bronze Age horse masters from the Eurasian steppes, who spread into Asia and Europe with advances such as the wheel.

Now an international research team has borrowed a computational approach from biology to shed new light on the problem. Using models originally created to trace the origins of viral pathogens, such as avian influenza, during outbreaks, evolutionary psychologist Quentin Atkinson of the University of Auckland in New Zealand and his colleagues report on page 957 of this issue that they have found decisive support for the Anatolian theory versus the Steppe hypothesis. The paper makes many inferences on matters such as the rates of language change and how languages diffuse, says Victor Mair, a Chinese language expert at the University of Pennsylvania. “There is so much about this paper that is arbitrary,” he says. By comparison, he says, the Steppe hypothesis “is based heavily on archaeological data such as burial patterns, which are directly tied to datable materials.”

Atkinson and his colleagues limited their study to vocabulary, just one of three subsets of linguistic data, “something you are really not supposed to do,” he says. In addition, the authors rooted their model in geography mainly using modern distributions of languages. “The results don’t tell you much about the past,” Anthony concludes.

The paper makes many inferences on how and languages diffuse, says Victor Mair, a Chinese language expert at the University of Pennsylvania. “There is so much about this paper that is arbitrary,” he says. By comparison, he says, the Steppe hypothesis “is based heavily on archaeological data such as burial patterns, which are directly tied to datable materials.”

Atkinson counters that archaeologists struggle to link their finds to particular cultures. “Peering back into human prehistory is not easy,” he says. “It’s like holding a dim candle over a dark abyss, and you need to use every piece of information that you can.”

Ground zero? With tools from the study of virus outbreaks, a team traced Indo-European languages to an ancestral homeland chiefly in modern Turkey (red).