

In Click Languages, an Echo of the Tongues of the Ancients

By **Nicholas Wade**

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Do some of today's languages still hold a whisper of the ancient mother tongue spoken by the first modern humans? Many linguists say language changes far too fast for that to be possible. But a new genetic study underlines the extreme antiquity of a special group of languages, raising the possibility that their distinctive feature was part of the ancestral human mother tongue.

They are the click languages of southern Africa. About 30 survive, spoken by peoples like the San, traditional hunters and gatherers, and the Khwe, who include hunters and herders.

Each language has a set of four or five click sounds, which are essentially double consonants made by sucking the tongue down from the roof of the mouth. Outside of Africa, the only language known to use clicks is Damin, an extinct aboriginal language in Australia that was taught only to men for initiation rites.

Some of the Bantu-speaking peoples who reached southern Africa from their homeland in western Africa some 2,000 years ago have borrowed certain clicks from the Khwe, one use being to substitute for consonants in taboo words.

There are reasons to assume that the click languages may be very old. One is that the click speakers themselves, particularly a group of hunter-gatherers of the Kalahari, belong to an extremely ancient genetic lineage, according to analysis of their DNA. They are called the Ju|'hoansi, with the upright bar indicating a click. ('Ju|'hoansi' is pronounced like 'ju-twansi' except that the 'tw' is a click sound like the 'tsk, tsk' of disapproval.)

All human groups are equally old, being descended from the same ancestral population. But geneticists can now place ethnic groups on a family tree of humankind. Groups at the ends of short twigs, the ones that split only recently from earlier populations, are younger, in a genealogical sense, than those at the ends of long branches. Judged by mitochondrial DNA, a genetic element passed down in the female line, the Ju|'hoansi's line of descent is so ancient that it goes back close to the very root of the human family tree.

Most of the surviving click speakers live in southern Africa. But two small populations, the Hadzabe and the Sandawe, live near Lake Eyasi in Tanzania, in eastern Africa. Two geneticists from Stanford, Dr. Alec Knight and Dr. Joanna Mountain, recently analyzed the genetics of the Hadzabe to figure out their relationship to their fellow click speakers, the Ju|'hoansi.

The Hadzabe, too, have an extremely ancient lineage that also traces back close to the root of the human family tree, the Stanford team reports today in the journal *Current Biology*. But the Hadzabe lineage and that of the Ju|'hoansi spring from opposite sides of the root. In other words, the Hadzabe and the Ju|'hoansi have been separate peoples since close to the dawn of modern human existence.

The Stanford team compared them with other extremely ancient groups like the Mbuti of Zaire and the Biaka pygmies of Central African Republic and found the divergence between the Hadzabe and the Ju|'hoansi might be the oldest known split in the human family tree.

Unless each group independently invented click languages at some later time, that finding implies that click languages were spoken by the very ancient population from which the Hadzabe and the Ju|'hoansi descended. "The divergence of those genetic lineages is among the oldest on earth," Dr. Knight said. "So one could certainly make the inference that clicks were present in the mother tongue."

If so, the modern humans who left Africa some 40,000 years ago and populated the rest of the world might have been click speakers who later lost their clicks. Australia, where the Damin click language used to be spoken, is one of the first places outside Africa known to have been reached by modern humans.

But the antiquity of clicks, if they are indeed extremely ancient, raises a serious puzzle. Joseph Greenberg of Stanford University, the great classifier of the world's languages, put all the click languages in a group he called Khoisan. But Sandawe and Hadzane, the language of the Hadzabe, are what linguists call isolates. They are unlike each other and every other known language. Apart from their clicks, they have very little in common even with the other Khoisan languages.

That the Hadzabe and the Ju|'hoansi differ as much in their language as in their genetics is a reflection of the same fact. They are extremely ancient, and there has been a long time for both their language and their genetics to diverge. The puzzle is why they should have retained their clicks when everything else in their languages has changed.

Dr. Knight suggested that clicks might have survived because in the savanna, where most click speakers live, the sounds allow hunters to coordinate activity without disturbing prey. Whispered speech that uses just clicks sounds more like branches creaking than human talk. Clicks make up more than 40 percent of the language and suffice for hunters to convey their meanings, Dr. Knight said.

Dr. Anthony Traill, an expert on click languages at the University of Witwatersrand in South Africa, said he did not find the hunting idea very plausible.

"Clicks are acoustically high-impact sounds for mammalian ears," Dr. Traill said, "probably the worst sounds to use if you are trying to conceal your presence."

But he agreed that it was a puzzle to understand why clicks had been retained for so long. He has found that in the ordinary process of language change, certain types of click can be replaced by nonclick consonants, but he has never seen the reverse occur. "It is highly improbable that a fully fledged click system could arise from nonclick precursors," Dr. Traill said.

Because languages change so fast, it is difficult for linguists to measure their age. Indeed, most think that languages more than a few thousand years old can rarely be dated. But if Dr. Traill is right, that clicks can be lost but not reinvented, that implies that clicks may be a very ancient component of language.

Dr. Bonnie Sands, a linguist at Northern Arizona University, said click sounds were not particularly hard to make. All children can make them. Dr. Sands saw no reason why clicks could not have been invented independently many times and, perhaps, lost in all areas of the world except Africa.

"There is nothing to be gained by assuming that clicks must have been invented only once," she said, "or in presuming that certain types of phonological systems are more primordial than others."

Dr. Traill said that although a single click was not difficult, rattling off a whole series is another matter, because they are like double consonants. "Fluent articulation of clicks in running speech is by any measure difficult," he said. "It requires more articulatory work, like taking two stairs at a time."

Given the laziness of the human tongue, why have clicks been retained by click speakers while everything else changed? "That is a major problem," Dr. Traill said. "All the expectations would be that they would have succumbed to the pressures of change that affect all languages. I do not know the answer."

A leading theory to explain the emergence of behaviorally modern humans 50,000 years ago is that some genetic change enabled one group of people to perfect modern speech. The new power of communication, according to an archaeologist, Dr. Richard Klein, made possible the advanced behaviors that begin to be reflected in the archaeological record of the period.

The Stanford team calculated a date of 112,000 years, plus or minus 42,000 years, for the separation of the Hadzabe and Ju|'hoansi populations. If this means that modern speech existed that long ago, it does not appear to fit with Dr. Klein's thesis.

But Dr. Knight said the estimate was very approximate and added that he believed the new findings about click language were fully compatible with Dr. Klein's theory. Clicks might have been part of the first fully articulate human language that appeared among some group of early humans 50,000 years ago. Those with the language gene would have outcompeted all other groups, so that language become universal in the surviving human population.

That would explain why the metaphorical Adam hit it off with Eve. They just clicked.

Correction: March 20, 2003

An article in Science Times on Tuesday about the ancient nature of click languages in southern Africa misspelled the given name of a linguist at Northern Arizona University who suggested that clicks could have been invented more than once. She is Dr. Bonny Sands, not Bonnie.

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