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## NEANDERTALS, GUT MICROBES AND MAIL-ORDER ANCESTRY TESTS

### Geneticists weigh in during the annual meeting of the American Society of Human Genetics

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PHILADELPHIA — Scientists fluent in the language of DNA — be it from intestinal bacteria, Neandertals or the consumer kits that promise to tell people about their ancestry — gathered in November in Philadelphia for the annual meeting of the American Society of Human Genetics. Following are highlights from talks given November 13:

#### Talk like a Neandertal

Neandertals may have had the genetic gift for gab, new research shows.

Analyses of the Neandertal genome reveals that the extinct human relatives had the same version of a gene linked to speech as humans do, says Svante Pääbo of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany. Mutations that reduce activity of the gene, called *FOXP2*, also disable speech in humans.

Humans have a version of *FOXP2* that differs by two amino acids from the chimpanzee version of the gene. Neandertals share the version of the gene found in humans, Pääbo reported at the human genetics meeting.

Many other genes may be required for speech but, in humans at least, no other genes have shown such a dramatic effect. The result could mean that Neandertals could speak, Pääbo says.

“From what little we know, there’s no reason they couldn’t talk,” he says.

#### Gut diversity

A study of twins reveals that each person has a unique mix of microbial species living in their intestines.

Scientists had previously thought that people may share a core set of microbial species in addition to other, unique bacteria. But a new study of 154 people showed that each person had unique mixtures of gut microbes, Jeffrey Gordon of Washington University in St. Louis reported.

Although the microbe species differed from person to person, microbes living in the intestines tend to do many of the same jobs, fulfilling tasks such as breaking down carbohydrates, Gordon says. That’s similar to other macro-ecosystems, he says. Grasslands look the same around the world, even though a grassland in North America contains different species of plants than one in Africa.

A person's individual mix of microbial species changes slightly over time, but it may not matter which species are at work as long as the job gets done. The researchers have also shown that obese people have groups of microbes that contain more genes for digesting carbohydrates than do microbes from lean people.

### **Mail-order DNA ancestry**

As many as 30 companies now offer to genetically determine an individual's ancestry. The tests can be done at home and are easy to use. But the tests' results are still imprecise and their meaning is often not clear, scientists say.

During its annual meeting, the American Society of Human Genetics released a statement (available at [www.ashg.org/pdf/ASHGANcestryTestingStatement\\_FINAL.pdf](http://www.ashg.org/pdf/ASHGANcestryTestingStatement_FINAL.pdf)) concerning direct-to-consumer tests of personal ancestry. A committee of scientists from the society plans to release a more comprehensive academic discussion of the topic in the spring.

For now the society recommends that companies and academic scientists do more to educate people about the limitations of what this type of ancestry testing can actually tell someone about their family. Historical, social, political and privacy issues associated with genetic testing should also be discussed, members of the committee said at a press conference November 13.

"We've got to be cautious not to let science trump the culture," says Edward McCabe of the University of California, Los Angeles.

Psychological impacts of the testing should also be considered, the committee recommends. Results of ancestry tests may change a person's view about their own identity, says Charmaine Royal of the Duke University Institute for Genome Sciences and Policy. "For some people, the genetics is truth. They get that information and it challenges everything they ever knew," she says. Other people view genetic results as just another piece of family history.