On the antiquity of language: The reinterpretation of Neandertal linguistic capacities and its consequences

The article argues for a much greater antiquity of human language. This might change how we think about the cultural evolution of linguistic diversity. The article also reviews some recent lines of evidence concerning Neandertal language and speech capacity. This review aims to erradicate the idea that the Neandertals were unable to articulate and to explain that maybe they were vere similar to modern humans in a biological and congnitional way, and that their linguistic capacities were similar to ours.

It's assumed that modern language is a recent phenomenom, but some new evidences suggest that Neandertals shared with modern humans something like modern speech and language. It changes the idea of a 50,000-100,000 years old modern language to half a million years.

It suggests that present-day linguistic diversity might come from an ancient interaction between Neandertal and modern humans during their expasion across the world. Some evidences suggest that Neandertals used some kind of protolanguage instead of using language as we know it. The use of this protolanguage may come from some physiological differences that caused Neandertals to lack the specialized speech machinery. The common ancestor between those two lineages may have alredy had an evolutionod speech and language system similar to the one we know.

Similarities and differences between Neandertals and modern humans

The evolutionary context

In Africa H.Erectus evolved into H.Ergaster, which later evolved into H.Heidelbergensis, the common ancestor of Neandertals and modern humans. After the split from this common ancestor, the two lineages diverged due to the different and geographically distant areas they inhabited. But some evidences show that they overlapped firts in the Middle East.

The skeletal morphology

Neandertals are morphology caraterized by cranial differences from modern humans. The cranial differences involve long nd low brain-cases with volumen comparable to that of modern humans. There is a kwown case of mixture between the two ineages; a kid found in Lagar Velho, Portugal, which is an example of an Neandertal-modern human hybrid. Interbreding might be taken as evidence that the three lineages belonged to one biological specie.

The emerging picture from ancient DNA

Some evidences argued tat Neandertal DNA didn´t contribute to the modern human genetic diversity, but later advances in Next Generation sequencing allowed to change our view. Those new evidences showed us that Neandertal and Denisovan genomes are interconected with ancient modern human genes. Those lineages interbred during modern humans´ exodus from Africa, probably somewhere in Middle East. DNA suggests that our evolutionary history is a mixture between the three lineages (Modern human, Neandertal and Denisovan). Different Neandertal genes have been found in different modern human individuals, which suggests that the number of contacts was not small. A relevant fact is that they share two especific amino-acid substitutions which are linked to language. This inducates that Neandertals were language users. All those evidence suggest tha Neandertals; Denisovans and modern humans were very similar but, of course, not identical.

Neandertal infant maturation

Modern human infants develop slowly after birth, a dependency in their first years crucial for the learning of language and other aspects of culture. This slow developement is also in Neandertal infants. There is some difference between the position of the neonate, but the similarity between Neandertal and modern human pelvis allowed hybrids to be born in both Neandertal or modern human mothers.

Neandertal speech, language and culture

Speech and hearing

Fossilized parts of the vocal and auditory anatomy provides information about ancient capacities for speech production and perception. Some evidences show similarities between this anatomy and the modern human´s one, which means speech and audition are posible. An important fact is that some of this systems wre atributed to the H.Heidelbergensis, the common ancestor of those three lineages.

Culture and language

The Neandertal had a complex Stone tool technology that required considerable skill and training. Complex tool making requires the use of some kind of comunication or language to learn the technique. The neandertals managed to live in hostile territories, they controlled fire and even cooked. They also had some funerary rituals and looked after the sick and the infirm. It is specially interesting the late Neandertal period of contact with modern humans, with numerous signs of cultural borrowing. There are some evidences of those coexistence periods between lineages and this culture borrowing. Neandertals were absorbed rather tan extinguished. The disappearance of this lineage was due to some mix of climate change, absorption, competition and genocide.

Consequences for the study of language and liguistic

We understand language as the full suite of abilities to map sound to meaning, including the infrastructure that supports it.

The assemblage of these prerequisites took place in a deep time, so that speech and language are ancient, evolving during half a million years, coming from the common ancestor of Neandertals and modern humans. After H.Heidlbergensis each lineage evolved with differences in speech and language. When those groups met again their speech and language capacities were comparable and compatible.

Consequences of this perspective

First

Language and speech were largely co-evolving capacities. The idea that human language initially went through a sign-language or gestual language phase has become popular again in part throughthe discovery of mirror-neurons, offering an apparently automatic translation from manual action to action-understanding.

Second

The increasingly complex speech system must have come later, with the more complex aspects of language (phonology, syntax and lexicon) being the last to evolve. Language as we know it must then have originated within the ~1 million years between h.Erectus and the common ncestor of Neandertals and us.

Third

There may be ample scope for the interplay between population genetics and linguistic diversification. Neandertal languages were most probably tonal. Advances in understanding the genetic influences on language and speech, coupled with the availability of ancient DNA, may make it posible to speculate with more certainity about our ancestor´s languages.

Fourth

Our 7000 languages tell us a story of historical relatedness and not much about the intrinsic limitations on the design space. Some languages families and linguistic features are very conservative and such slow rates of change seem unable to account for the current diversity evolving since the expansions out of Africa.

Conclusions

The article tries to review the evidence supporting the claim that Neandertals, Denisovans and contemporary modern humans shared a similar capacity for modern laguage, speech and culture. The antiquity of modern language and speech capacities, going back to at least the last common ancestor of Neandertals, Denisovans and modern humans some half a million years ago, raises new and interesting questions concerning the nature of the linguistic design space, the relationship between biological and cultural evolution, and the time frame for the emergence of modern human traits, and language in particular.