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Where does language come from? “Exploring our early origins”

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An overview

NATIONALS GEOGRAPHIC

**Brilliant Scientist
visits Maropeng**



WORLDWIDE

Aims



- Where does language come from?
- Discuss 3 main language theories
- Describe development across 5 species from Australopithecus Sediba to Homo sapience
- Explore language functions in these species and their implications for the AAC field

Where does language come from?



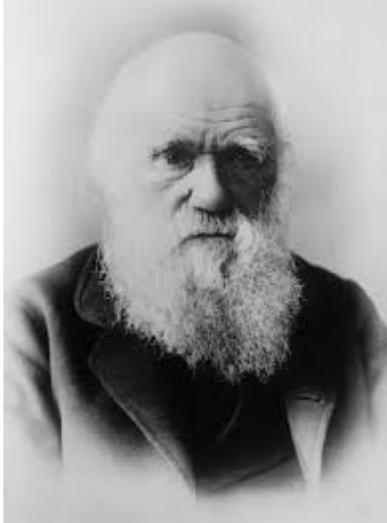
- No consensus on the origin or age of human language – as no direct evidence.
- Draw inferences from fossil records, archaeological evidence, contemporary language diversity, studies of language acquisition, comparisons between human language and communication systems of primates.
- Since 1990s, researchers (linguists, archaeologists, psychologists, anthropologists) have tried to address "**the hardest problem in science.**"

Main theories:

- **Continuity theories** : evolved from earlier pre-linguistic systems among our primate ancestors (many linguistic scholars in 2015).
- **Discontinuity theories** : language is a unique trait - appeared fairly suddenly during of human evolution (Noam Chomsky).
- **Innate faculty** : largely genetically encoded (Steven Pinker).
- **Social constructivism**: language is a cultural system — learned through social interaction (Lev Vygotsky ; Michael Tomasello)



I cannot doubt that language owes its origin to the imitation and modification, aided by signs and gestures, of various natural sounds, the voices of other animals, and man's own instinctive cries.



Charles Darwin, 1871

Descent of Man, and Selection in Relation to Sex.

Continuity theory

Continuity theories of language evolution hold that it must have developed gradually, starting among the earliest ancestors of humans, with different features developing at different stages until people's speech resembled what we have today



FROM AUSTRALOPITHECUS TO HUMANS TODAY

AUSTRALOPITHECUS (Hominid)

- Height: 1.10 m
- Weight: 40 kg
- Walked upright



3500000 / 2500000
years ago

HOMO HABILIS

- Height: 1.59 m
- Weight: 50 kg
- First tools
- Could speak



2300000 / 1800000
years ago

HOMO ERECTUS

- Height: 1.60 m
- Weight: 60 kg
- Discovery of fire
- Hunted in groups



1900000 / 400000
years ago

HOMO NEANDERTHALENSIS

- Height: 1.65 m
- Weight: 80 kg
- First burials
- Specialised tools



150000 / 35000
years ago

HOMO SAPIENS SAPIENS

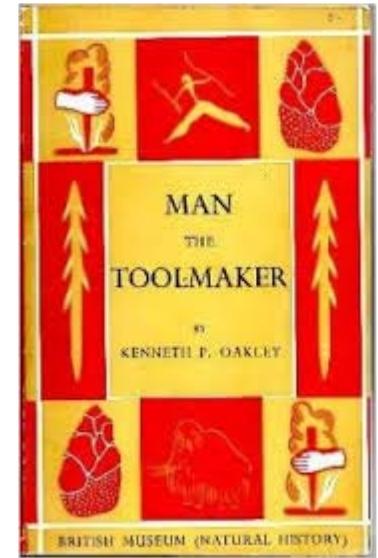
- Height: 1.70 m
- Weight: 70 kg
- Examples of art
- Tools made of bone and horn



120000 years ago
(40000 years ago in Europe)

Toolmaker Theory

- Oakley, K.P. (1972) “Man the Toolmaker” published by British museum in 1972
- Teaching another person how to use tools requires a certain, agreed-upon vocabulary, as does the process of sharing and protecting resources like food and shelter.
- Different places in the world – need different vocabulary
- Eskimos don't really have 100 different words for **snow**, some cultures have more words for **rice** and **camels** than English does.



Australopithecus sediba



Cranium: Karabo

- Approx 2 million years ago
- Transitional species between the southern African *A. africanus* (the Taung Child, Mrs. Ples) and either *Homo habilis* or even the later *Homo erectus* (Turkana boy, Java man, Peking man)
- Cradle of Humankind World Heritage Site in 2008, one a juvenile male ("Karabo" – "the answer" in Sesotho) an adult female, an adult male, and 3 infants (Berger et al., 2010).
- Modern hand with precision grip : tool making

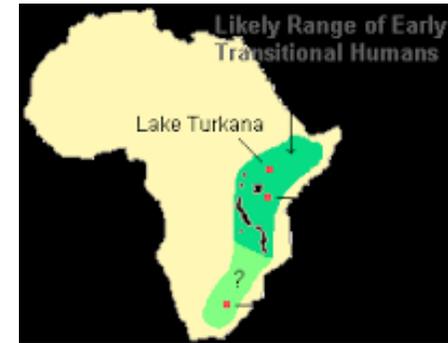


Why is Karabo an important find?

- The most complete early human ancestor skeleton ever discovered
- Appear to have fallen into a deep cave, landing on the floor where they remained trapped.
- Bodies were later washed into an underground lake most likely by a large rainstorm.
- Didn't travel far –few metres –became solidified into the rock, as if thrown into quick-setting concrete.
- Modern hand with precision grip : tool making

Homo habilis

- One of earliest members of genus Homo
- Means “*handy man*”
- Lived in eastern and southern Africa
- H habilis had extreme brain lateralization - supports the capacity for tool making and also some level of linguistic development (Tobias).
- Controversy, but if Prof Tobias is correct, it allows the possibility of some of the neurological hardwiring that controls the vocal tract muscles was developed already 1-2 million years ago in H habilis.
- The fine-tuned sequencing of full-blown spoken language is estimated to be a late H sapiens development



Picture: Smithsonian museum

Homo habilis (cont´d)



- Neanderthals lacked this muscles and hence, the capacity for the articulatory sequencing in sound production that modern humans have.
- Some linguistic vocal development at the stage of H habilis is also possible without the full-blown articulatory capability of modern humans.
- H habilis had a much larger brain than the australopithecines, but the rest of its body is more like them: a fairly small creature, maybe 4 - 6 foot, with long arms, more ape-like than other hominids ([Louis and Mary Leakey](#)).
- Recently H habilis viewed as 'aunt/uncle' species to humans, not in the direct human line.

Picture: Smithsonian museum

Homo erectus

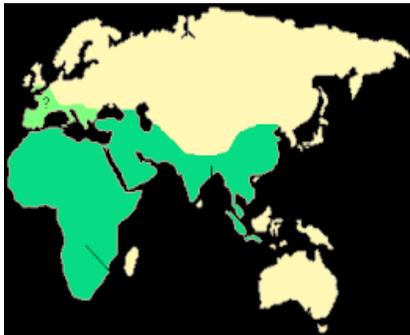
- Lived in northern, eastern, and southern Africa; Western Asia (Dmanisi, Republic of Georgia); East Asia (China and Indonesia)
- H erectus had double the brain capacity of H habilis
- Use of fire – found fire hearths
- Hearth suggests coming together to eat : does this suggest social interaction?
- Sitting around a fire making stuff (using tools) gives further opportunity for social interaction



Picture: Smithsonian museum

Homo erectus (cont'd)

- Suggests the possibility of a pre-language, e.g. with simple symbols and no grammar
- Could “language system” have helped with tool developments help with survival in the new environments?
- Many people think H erectus had some kind of language, even if not full-blown.



Homo neanderthalensis

- Lived in Europe and southwestern central Asia
- Their bodies were shorter and stockier - adapted to living in cold environments.
- Brains were just as large as modern humans
- Made and used a diverse set of sophisticated tools, controlled fire, lived in shelters, made and wore clothing, were skilled hunters of large animals and also ate plant foods, and occasionally made symbolic or ornamental objects.



Picture: Smithsonian museum

Homo neanderthalensis



- Deliberately buried their dead and even marked their graves e.g. flowers.
- No other primates (or earlier human species), showed this sophisticated and symbolic behavior.
- Shanidar Neanderthal fossil, shows that he experienced a crushing blow to his head. It damaged his left eye socket and the brain area that controlled the right side of his body, leading to a withered right arm. He lived until 35–45 years of age. His group must have looked after him.

Picture: Smithsonian museum

Denisova Cave

Bracelet found in Denisova Cave, Ann Gibbons, Science, 2011:1084

- Altai Mountains in southern Siberia
- Important : Stone tool technology
- Are the 30,000-50,000 year human rem Neanderthals or modern humans?
- DNA genome mapping : Distinct group!
- Contributes to understanding the remarkable genetic similarity of human populations around the globe.



Открытый из кости, найденных здесь, не отказалась бы и современная модница (фото сверху). Каменный браслет, которому больше 40 тысяч лет, поразила ученых тонкостью обработки

Was there just 1 language?

- Linguists are unsure – limited information about the origins of language
- Different theories
- Did early people imitate sounds they heard in the environment?
- Did they babble until certain sounds took on meaning?



Languages evolved to match the culture...



- Languages evolved along geographical lines.
- Different groups of people living apart from one another slowly started to speak differently until they could no longer speak with each other.
- Languages evolve and change at a rapid pace.
- Continually adding new words – colloquialisms develop - becomes incomprehensible to other speakers of the original language
- Globalization impact – no more “new languages”

Languages evolved to match the culture... cnt'd



- **Theory:** Languages evolved to meet the needs of people living in a particular area, e.g. Japanese doesn't really doesn't have a clear future tense.
- Easier to think about certain concepts in certain languages, they've kind of evolved for that, e.g. Fika!
- Many linguists predict that at least half of the world's 7,000 or so languages will be dead or dying by the year 2050....

Tower of Babel

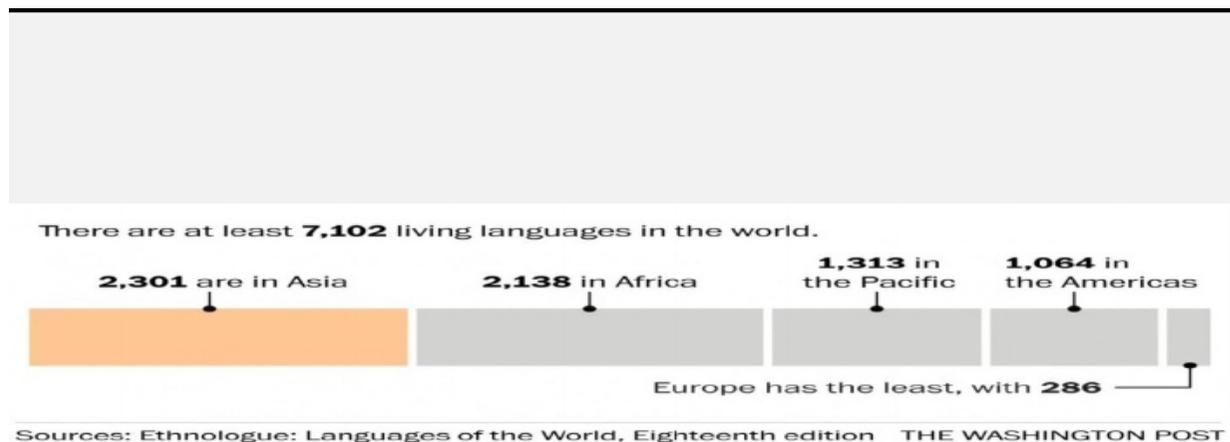
- City Babel founded by a warrior named Nimrod in ancient Babylonia.
- Babel means **confusion**.
- Aim was to build a tower, “whose top may reach unto heaven” (Genesis 11)
- Archaeologists know this tower as a as a ziggurat: a multilevel pyramid-like tower with a ramp to its temple on top.

Great Ziggurat at Ur
in Sumer.



The world's languages

- 7,413 primary languages in the world (Lewis, 2009)
- 41,186 languages if all dialects are considered

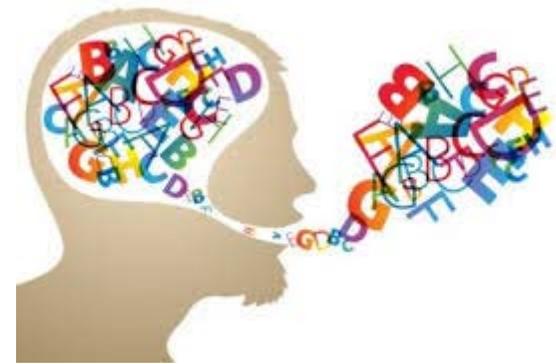


- Many linguists predict that at least $\frac{1}{2}$ of the world's 7,413 languages will be dead or dying by 2050.

The world's languages

Most frequently spoken 1st languages:

- Chinese (1,300 million speakers)
- Spanish (700 million speakers)
- English (500 million speakers)



Hindi – Arabic – Bengali – Portuguese – Russian....

Youngest language in the world

- South Africa: second highest number of official languages in the world
- Home to the youngest of them all: Afrikaans!
- Afrikaans became official in 1925.
- Afrikaans is a mixture of 18th Century Dutch, Bantu, Khoisan, Portuguese and Malay!
- Cultural diversity all in one! [\(Thijssen, 2014\)](#)

Is there one word that can be understood universally ?



Huh?

- 3-letter word to express confusion or unclearness
- From Ghana to Iceland! (Dingemans, Torreira & Enfield, PLOS One)
- 'Huh?' is a real vocabulary word – has slightly different spelling but same pronunciation in each language, e.g.

- English = 'Huh?'
- Mandarin = 'A?'
- Spanish it's 'E?'



Why do people use “huh?”

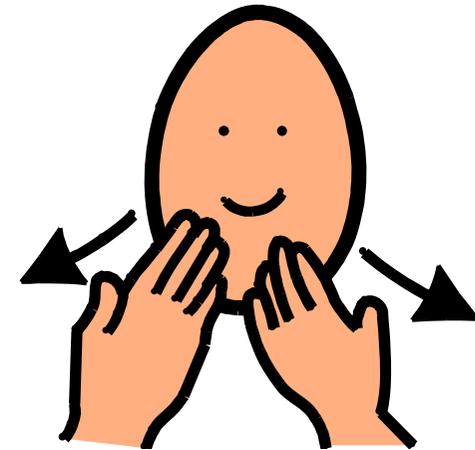
- Linguists believe that when humans are unable to respond appropriately to anything that is said, they look for a quick way out
- 'Huh?' is quick to say when you cannot think of what else to say...
- All humans inherently use language in the same way - thus they use a similar solution when they are confused, and use the minimum number of letters to pronounce the questioning syllable 'Huh?'

Thank you!

Ke ya leboga!

Tack!

Dankie!



Ngiyabonga!



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