





• origin of the universe

• origin of life

- origins of language
- a mere mystery
- speculative

#### **Contents**



- 1. Inquiries of the origins of language in history
- 2. Questions asked in the study of language origins
- 3. An empirical study

- 1. Classical Age
- Name any philosophers?
- debate on the origins of words
- natural (fixed)
- conventional (arbitrary/ agreement of the society)



- 2. The Enlightenment
- Rousseau and Condillac
- gestures and instinctive cries
- articulate sounds
- The Berlin Academy
- a prize contest on the origin of language (1769)
- Johann Gottfried Herder



- 3. 19<sup>th</sup> century
- Wilhelm von Humboldt
- denied a continuous origin of language
- rejected needs-motivated origin of language
- not invented by humans, but put in them immediately



- two well-reasoned empirical plans!
- 1) searching for early-stage humans
- 2) comparative studies of languages from a historical perspective

- Most early theories were nothing but speculations!
- Lack of direct evidence
- In 1866, the Linguistic Society of Paris (founded in 1865) imposed a ban against papers on language origins. (> a century)

In 1865 the Société de Linguistique de Paris was founded. Its constitution and bylaws were approved by the government the following year. The first two bylaws specifically limited the scope of papers that could be presented before the Society:

Article 1: The Society of Linguistics has as its object the study of languages, and of legends, traditions, customs and documents which could clarify ethnographic science. All other subjects are rigorously forbidden.

Article 11: The Society will accept no communication dealing with either the origin of language or the creation of a universal language (as quoted in Stam 1976).

The London Philological Society followed suit in 1873.

In 1873 the Philological Society of London was addressed by its president, Alexander J. Ellis. He declared that questions about the origin of language were 'out of the field of philology proper'. He continued:

We have to investigate what is, we have to discover, if possible, the invariable unconditional relations under which language as we observe it, forms, develops, changes, or at least to construct an empirical statement of definite linguistic relations, and ascertain how far that statement obtains in individual cases. ... We shall do more by tracing the historical growth of one single work-a-day tongue, than by filling wastepaper baskets with reams of paper covered with speculations of the origin of all tongues (as quoted in Stam 1976, emphasis in the original).



- 4. Contemporary period
- 1) evolutionary, adaptationist approach
- gestures, cries or ape's communication system
- 2) **Chomskyan** approach
- highly complex structure
- genetic mutation(s)
  evolved for reasons other than language
- 3) adaptationist Chomskyan position
- Pinker, Bloom, Newmeyer, Jackendoff, etc.
- the proto from of language
- the transition from a proto language to language







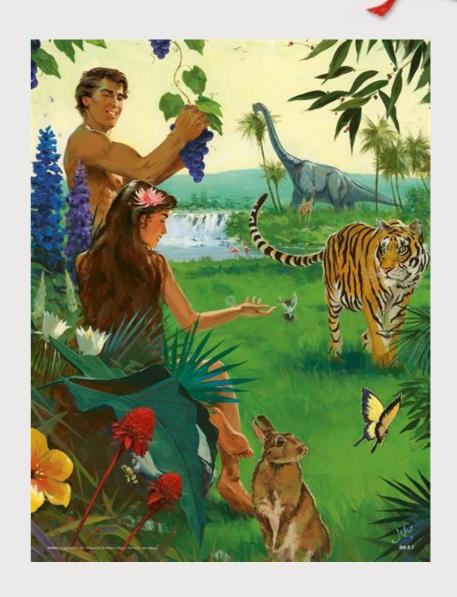
• 2. Questions asked in the study of language origins

#### **Questions to ask**

- Question 1: created vs not created?
- If created, by whom?
- Divine origin of language

#### The divine source

• The Genesis of The Holy Bible



#### The divine source



 In this sense, God or Adam created human language (probably, Hebrew). But why are there so many different languages in the world?

The Babel Tower



#### The divine source



- The words those children uttered might happen to resemble the sound of a certain language.
- More cases of children living in isolation were unable to speak any language.
- Language was unlikely given by God; it emerged.

#### **Questions to ask**

- Question 2: natural vs conventional?
- natural origin of language
- sound symbolism and imitation
- natural necessity account
- conventional origin of language

#### natural origin of language





- 1) The "bow-wow" theory
- Primitive words derived from imitations of the natural sounds that early human heard around them. (bow wow, moo, caw-caw, coo-coo, ...)
- 2) The "pooh-pooh" theory
- Speech comes from the automatic/instinctive vocal responses to pain, fear, surprise, or other emotions.
- Evidence for the theories:
- Evidence against the theories:

#### natural origin of language





- 3) The "yo-he-ho" theory
- Speech started with the rhythmic chants and grunts people used to coordinate their physical actions when they worked together.
- Evidence against the theory:

#### **Questions to ask**



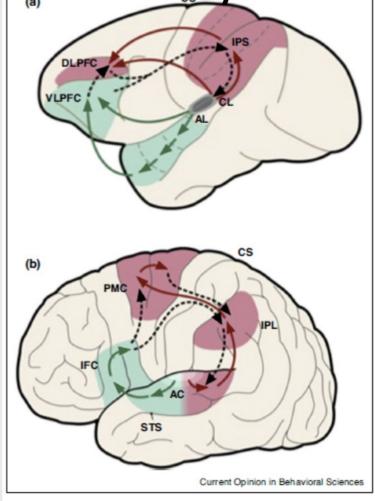
- Question 3: Continuity vs Discontinuity
- Did language emerge gradually or abruptly?
- If language emerged gradually(e.g., by Darwinian evolution),
- the further question to ask is what is the precursor of human language from which it evolved?
- Two alternative precursors, among others:
- vocal communication systems
- gestural communication systems

Did language evolve from animal vocal communication systems

 "...this reveals an amazing similarity in the organization of higher, nonlinguistic auditory cortex in monkeys and humans."

• "... monkey auditory cortex contains all the necessary ingredients for the decoding of speech sounds."

• Rauschecker, J. P. (2018). Where did language come from? Precursor mechanisms in nonhuman primates. *Current opinion in behavioral sciences*, *21*, 195-204.



Dual-stream model of auditory processing. (a) Rhesus monkey [2,102–104]; (b) Human [3]. Abbreviations — CS: central sulcus; AL, CL: anterolateral, caudolateral belt; IPS: intraparietal sulcus; DLPFC, VLPFC: dorsolateral, ventrolateral prefrontal cortex.

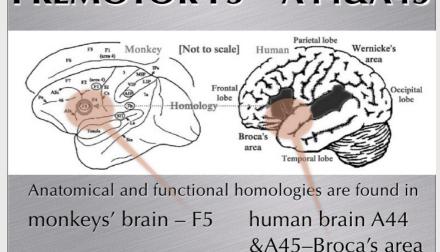
#### Did language evolve from gestural communication systems?

- Language first arose as visible gestures. Supporting evidence:
- 1) gesture being more natural than speech
- 2) the apparently late appearance of a fully modern vocal tract and the early appearance of fully modern upper extremities
- 3) the seemingly greater ability for language-like behavior by apes in the gestural as opposed to the vocal medium

• 4) the discovery of gesturally responsive mirror neurons in the Broca's area homologue in monkeys

5) semantic phonology

• ...



#### **Semantic phonology**



- takete vs maluna: which refers to a sharp/pointed object?
- **Sharp, pointed things** are more likely to be associated with *t* or *k* sounds, while **soft, smooth things** tend to be associated with *I* or *m* sounds.

#### Why a transition from gestures to sounds



- 1. freeing the hands from communication and using hands for tool making and using
- 2. less energy demanding
- 3. less attention demanding
- 4. allowing communication over longer distances
- 5. allowing communication at night or when the speaker is not visible to the listener
- 6. permitting longer and more complex sentences because the short-term memory span for speech is longer than for American Sign Language.

• ...

#### Did language emerge gradually?



- Questions remain:
- Language is a complex system involving several modules: phonological, semantic, syntactic
- So would gradual evolution apply to any of the modules or only to some of them?
- Would these language modules emerge simultaneously or some evolved earlier and faster than others?

#### Did language emerge abruptly?

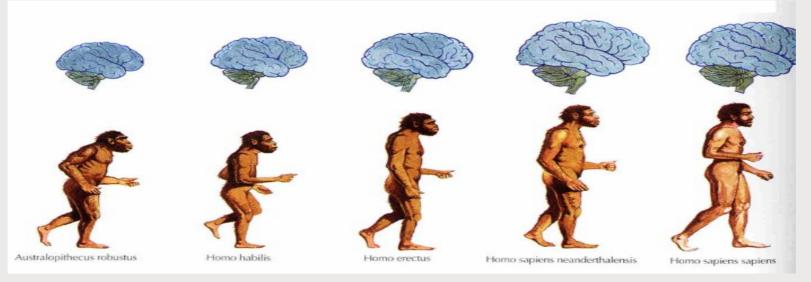
- Language is so different from other communication systems; it must be acquired on an all-or-nothing basis and not through a gradual process.
- "...language is based on an entirely different principle than any animal communication system." (Chomsky 1988: 183)
- In Chomsky's terms (1988: 167), "In the case of such systems as language or wings it is not easy even to imagine a course of selection that might have given rise to them. A rudimentary wing, for example, is not 'useful' for motion but is more of an impediment. Why then should the organ develop in the early stages of its evolution?".
- Chomsky N (1988). Language and problems of knowledge. The MIT Press, Cambridge (Mass)
- Chomsky (1972: 68) remarked, to claim continuity between, say, bee language and human language is to claim 'evolutionary development from breathing to walking.
- Chomsky, N. (1972). Language and Mind. (Enlarged edition) New York: Harcourt Brace Jovanovich.

#### Did language emerge abruptly?



- Chomsky and his supporters have not pursued their inquiry in greater detail: how and when language emerged abruptly.
- Possible causes of the sudden emergence of language:
- Genetic mutation(s)
- •

#### What we know about language origins



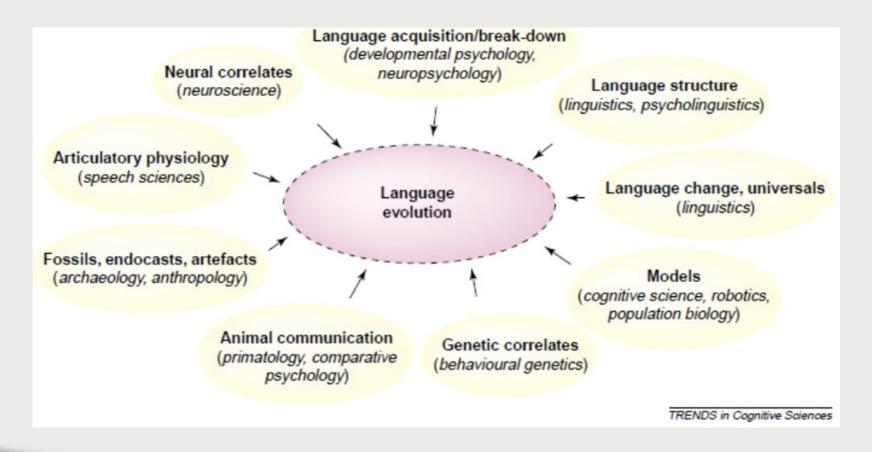
- Humans diverged from chimpanzees 6-13 million years ago.
- Language emerged only in the human line.
- Some type of spoken language (e.g., some protolanguage) was suspected to develop between 100,000 and 50,000 years ago, well before written language (about 5,000 years ago).

- We simply didn't, don't, and most likely wouldn't in the near future, know how language originated.
- Language is so complex, and little direct evidence is available.
- Language evolution research requires interdisciplinary collaborations.

#### Inquiry of language evolution/origin



The necessity of interdisciplinary collaborations

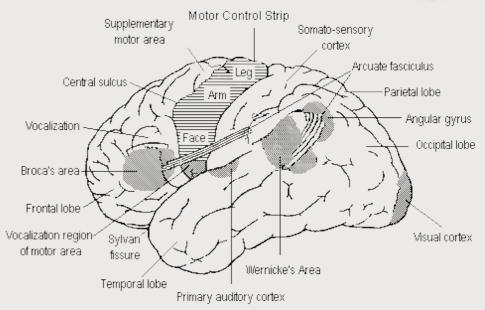


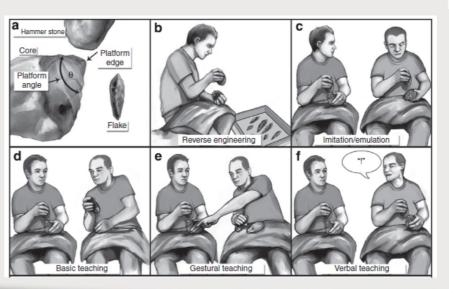


An empirical study on language evolution

#### tool-making and language evolution

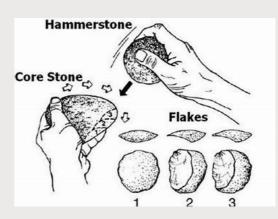
 The cortex responsible for complex vocalization (speaking) and object manipulation (making or using tools) are very close to each other, implying an evolutionary connection between the language-using and toolusing abilities of humans.

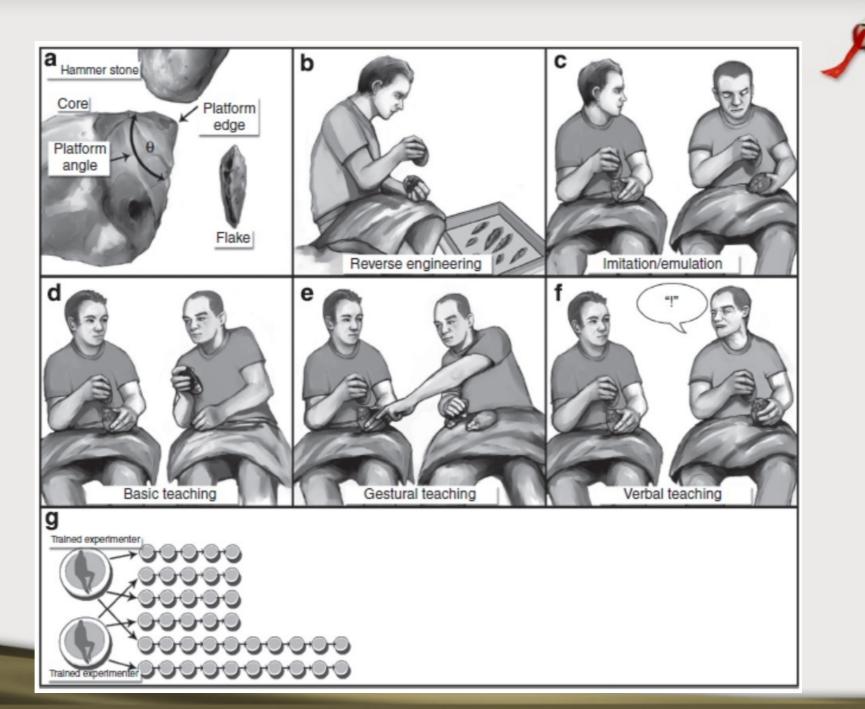


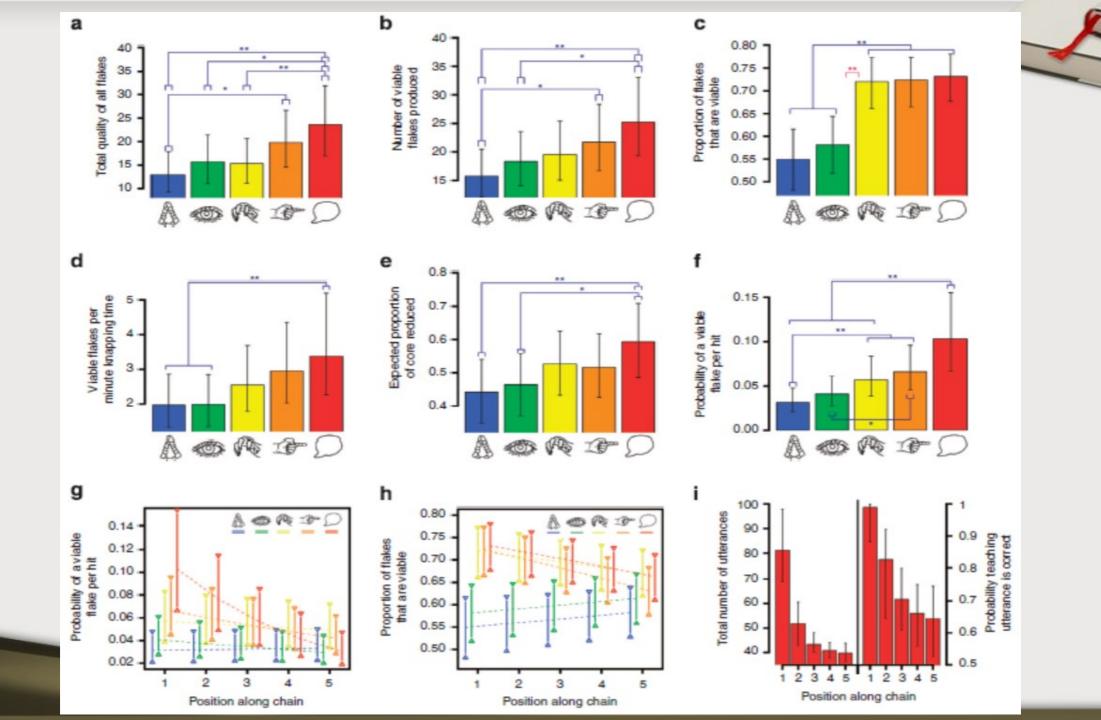


#### An interesting study

- Oldowan stone tools were used between 2.5 mya to 1.7 mya.
- the evolution of language:
- a gradual emergence beginning 2 mya
- a relatively sudden appearance 50–100 kya
- Tool making could generate selection.
- fittest social transmission of tool making skills
- Is that possible that language is the means selected in this natural selection process?











#### **ARTICLE**

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# Experimental evidence for the co-evolution of hominin tool-making teaching and language

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- Chapter 2: Animals and human language
- Chapter 3: The sounds of language



## Thank you!