

## Re: Both SAT and AAT have failed

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  - *Date:* Sun, 17 Aug 2008 17:32:35 +0200
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netloon:

Why don't you tell us how  
water was involved with the selection of language.

don't you know??  
what do you know, my boy?  
ever heard of Elaine Morgan?

Possible Preadaptations to Speech – a Preliminary Comparative Approach  
M Verhaegen & S Munro 2004 Hum.Evol.19:53-70

Human language is a unique phenomenon and its evolutionary origins are uncertain. In this paper we attempt to explore some of the preadaptations that might have contributed to the origin of human speech.

The comparative approach we use is based on the assumption that all features of a species are functional, and that all features can be compared with those of other animals and correlated with certain lifestyles. Using this method we attempt to reconstruct the different evolutionary pathways of humans & chimpanzees after they split from a common ancestor ...

This paper presents comparative data suggesting the various human speech skills may have had their origins at different times and may originally have had different functions. Possible preadaptations to speech include, eg,

- musical skills present in a variety of primate species (sound production);
- airway closure and breath-hold diving for collecting seafood (voluntary breath control);
- suction feeding adaptations for the consumption of fruit juice or certain seafoods (fine control of oropharyngeal movements).

The different evolutionary pathways of chimpanzees & humans might explain why chimpanzees lack language skills and why human language is a relatively recent phenomenon.

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In short: human speech is composed of different elements:

- musicality (gibbons, bonobos...),
- voluntary breathing (uniquely human),
- mouth closure at different places = labial, dental, palatal, velar etc.

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consonants (only humans),  
– symbolic meanings (apes & other mammals).

More in detail:

- Darwin already described the musical abilities of gibbons (song, dialog, duet, rhythm, tone... = "vowels" produced by glottis) cf. hoots of chimps etc.: probably predates the ape LCA c 18 Ma. Possibly related to monogamy (birds, gibbons, indris, tarsiers...).
- Elaine Morgan described how voluntary breath-hold for diving & pre-dive hyper-ventilation were preadaptations to voluntary breathing control for speech.
- The different airway closing mechanisms in humans (probably after the Homo/Pan split c 5 Ma: ext.nose, nasal cycle, velum, lips, tongue, glottis...) are typical of (parttime) diving mammals. Consonants & breathing control.
- Roger Crinion noticed the resemblances in human oral anatomy with different spp of suction-feeders (for fruit juice, slippery foods, seafoods etc.): parabolic closed tooth row (incl.incisiform canines), smooth palate (few ridges only dentally), vaulted palate & globular tongue, descended tongue & hyoid etc. = voluntary production of consonants (esp.clicks etc.).
- Subsequent brain enlargements since H.erectus (facilitated by abundant brain-specific fatty acids: DHA etc.from seafood) suggest further integrations of these voluntary sound productions with other brain centers during the Pleistocene. Integrations of symbolic sounds. Progressively more complex grammar, see work of Martin Nowak: at first 1 sound = 1 word = 1 meaning; then combinations of phonemes=sounds into morphemes=words; then combinations of words into sentences (word order, grammar etc.).