

## How language did not evolve

Sverker Johansson

School of Education & Communication, Jönköping University, Sweden, lsj@hik.hj.se

Innumerable scenarios exist for the evolution of language, and direct empirical data on language origins are scarce. But the plausibility of many scenarios can still be estimated from general principles and indirect data.

Some principles apply to any unique evolutionary transition (cf. Poole & Penny 2006):

- Parsimony implies that the transition likely took place along the stem lineage, between the last common ancestor (LCA) with an outgroup, and the LCA of the crown group.
- Biological processes that demonstrably occur today are preferable to unique causes (cf. Lyell 1830).
- Is the scenario congruent with phylogenetic and fossil data?
- Would the postulated selective pressures actually lead towards the right end result (Johansson et al 2006)?
- The “chimp test”: are the postulated selective pressures *absent* in relatives that didn't make the transition (Bickerton 2002, Johansson 2005)?

Some constraints are more language-specific:

- The actual end result of language evolution (modern language) is imperfectly known. Is the postulated end result plausibly evolvable (Kinsella 2009, Johansson 2009)?
- Language evolved in a cultural context – is the scenario congruent with what is known, archeologically and otherwise, of the parallel evolution of culture and mind?
- Language is an evolving cultural entity in its own right – is the coevolution of language and language capacity taken into account (Johansson 2005, 2009)?
- Is the implied organisation of language congruent with neurological data (Kyriacou & Johansson, in press)?
- Is the ontogeny of language and the human mind taken into account?
- Do postulated intermediate steps and stages make linguistic sense (Stade 2009)?
- Can the scenario be simulated? With what results?

This list of points will be used as a reality check for a number of scenarios of language evolution. Among the scenarios to be evaluated are Locke & Bogin (2006), Bickerton (2009), Mithen (2006), and Zlatev et al (2005).

## References

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