Evolutionary constraints on language and speech

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All peoples today have language and speech. Long ago, our distant pre-human ancestors did not have language, and could not speak. Between then and now, our language faculties must have evolved. We do not know as much as we would have liked about this evolutionary process, and we do not have answers to a lot of questions about language evolution. But the mere fact that our language faculty and speech capabilities are the result of evolution can be used to constrain our theories about language and speech.

In evaluating any large-scope linguistic theory, a number of aspects are normally considered, to ensure that the theory is consistent with what is known about our language and speech capabilities. Typically, some or all of the following points are considered:

(1) language acquisition and other developmental issues
(2) cross-linguistic comparisons, especially universal patterns
(3) cognitive/mental processes of a language user
(4) neural/anatomical basis

These questions are basically synchronic. To the extent that diachronic issues are considered at all, it is often confined to historical language change. But there are more long-term diachronic aspects that can be fruitful to consider as well.

As noted, we do not know much about language evolution, but biologists do know a lot about evolutionary processes in general, and do understand quite well what kind of systems are plausible, or implausible, outcomes of evolutionary processes. Paleoanthropologists also know a fair bit about human evolutionary history. Many of our theories about the workings of language and speech entail hypotheses, explicit or implicit, about their history and biological underpinnings. This implies two questions that may, or perhaps even should, be added to the list above:

(5) are the hypothesized or implied biological systems evolutionarily plausible?
(6) is the hypothesized history consistent with paleoanthropology?

A third question that can be added concerns selective effects on language itself, as a cultural entity. There may have been natural selection acting on humans to make us better learners of language – but there may equally well have been natural selection acting on language, to make it more learnable by humans:

(7) is the proposed linguistic model consistent with both the selective forces acting on language users, and on language?

Two examples of areas where these additional questions may be fruitful:

- The monolithic perfection of syntax, postulated in Chomsky’s Minimalist Program
- The patterns of sound use in human languages: why are our speech sounds spread out in phonetic space the way they are, and why does our phonetic space look the way it does in the first place?

1 Adapted from Anna Kinsella (PhD thesis 2006 Edinburgh (as Anna Parker), and forthcoming book from Cambridge UP: Language evolution and Syntactic Theory)