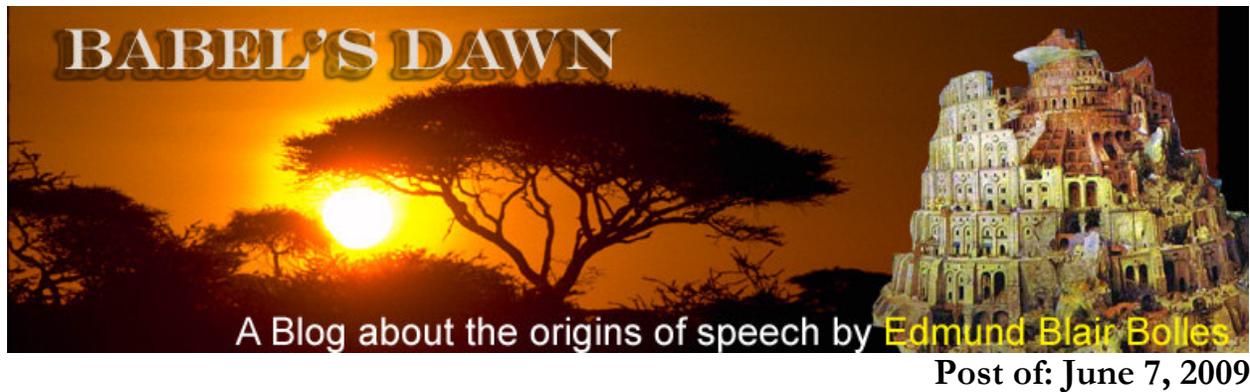
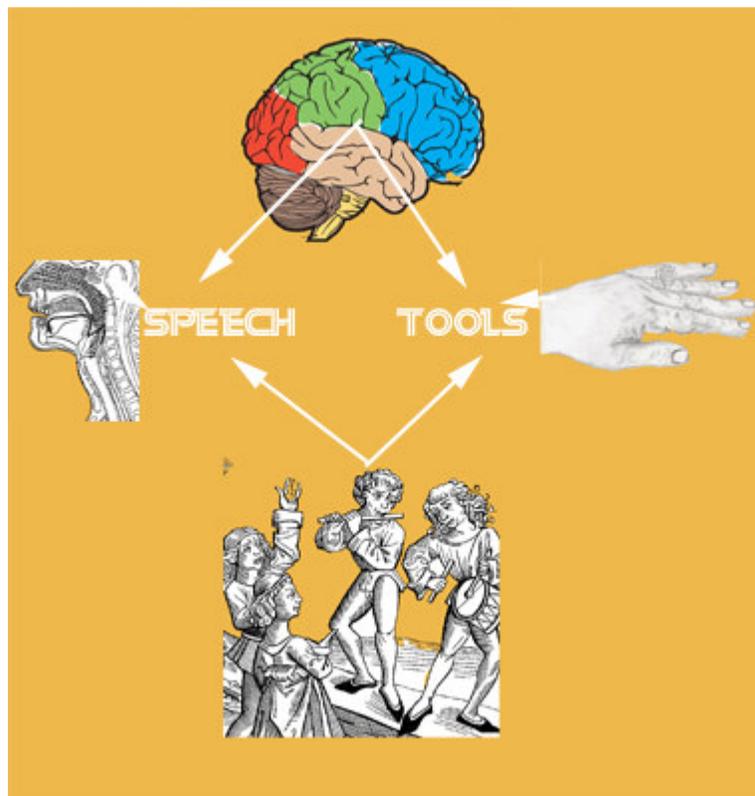


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## The Idea of Language



**The ingredients of speaking and toolmaking are similar.** Both require a brain capable of complex imitation and a community that wants to share information. Toolmaking also requires hands capable of shaping tools, while speech requires a throat capable of vocalization.

I've been reading a longish paper that contributes much to the dispute on this blog over who was closer to the truth:

- [Edward Sapir](#) who said that speech is a non-instinctive, cultural function, or
- [Steven Pinker](#) who insists that language is not a cultural invention.

The subtleties of distinction in such a debate can become confusing as each side concedes this or that element without giving up the main point. I think I've run across the cutting question that

separates the two sides. Was language preceded by an idea or a mutation?

I put the question while reading an essay by [Michael Arbib](#), “Invention and Community in the Emergence of Language: Insights from New Sign Languages;” which is included in a book published this past March, [Foundations in Evolutionary Cognitive Neuroscience: Introduction to the Discipline](#).

Arbib is most famous for his notion of “the language-ready brain” and, to make things clear from the start of this post, he is on the side of language as an invention. His position, if I understand him, is that we evolved a brain that was ready to use language, but we had to come up with the idea of language by ourselves. Perhaps we can agree that if language began with an idea it was invented, while, if it did not it is biological.

Arbib offers as an example, the introduction of writing. The people who invented writing had brains that were like the brains of their illiterate parents and grandparents. The birth of writing does not reflect an improved brain but a new idea. It happens, of course, that there were precursors to writing, but that just means writing depended on at least two ideas, the idea for the precursor and the idea that the precursor could be transformed into words.

Omitted from Arbib’s discussion is another requirement for writing: the writing-ready community. Writing was not invented in a literate society, but it emerged in a place that could put it to immediate use and let cultural evolution take its course. I think we can say that likewise, if speech was invented by a fellow with a speech-ready brain, a speech-ready community already had to exist.

Arbib also omits the very great difference between the ease of learning to talk and the work at learning to read. Our brains are much more language-ready than they are writing-ready. This difference surely has something to do with how much older speech is than writing. The brain and speech have co-evolved for scores of thousands of generations. Meanwhile, literate and illiterate members of society have lived side-by-side for thousands of years and yet the descendants of the literate families still have to work to learn to read, while in the neighboring school desk a young Abe Lincoln, the product of untold illiterate generations, seems to be doing equally well.

Arbib suggests that what made our brains language-ready was our long experience with toolmaking. Tools take us right back to *Homo habilis*, two and a half million years ago. The human lineage learned to make tools by imitating the process of more skilled toolmakers. Arbib calls this kind of learning “complex imitation” and distinguishes it from the “simple imitation” found among apes.

- **Simple imitation:** the ability to acquire some novel actions by extensive observation and repetition.
- **Complex imitation:** the ability to observe a novel performance and see, to a first approximation, the key subgoals it involves and the actions which appear to achieve them.

If apes can see the point of an action, they may imitate it, but imitating procedures that build on a series of achievements are beyond them.

Arbib's assumption appears to be that the complex imitation that permitted the creation of the so-called [Olduwan toolkit](#) took more imitation than an ape can muster, but less than speech requires. But why should that be so? (I ask as one who always did better in English class than in shop.)

Manual skills have been handed down from master to apprentice for a very long time, likely for millions of years. Most of the teaching relies on showing and practicing, but the master has to butt in from time to time with some verbal instruction, particularly at exactly that point where the apprentice is slow to grasp the point of the subgoal. ("Your flakes are too thick.") Was there ever a time when the point of the subgoal was so transparent that the inattentive apprentice could just see it? And if it was that self-evident, was it really beyond the ape? After all, gorillas can master the multi-step task of turning nettles into edible food. Furthermore, the practical point of making a cutting tool is much more obvious than the need for language. If we didn't need speech of any sort to develop a tool-based culture, when did we need it?

I get the idea that supports tool making: a sharper stone would cut better. But what is the idea of language? Is it naming? Many people seem to think so, but what, by itself, is the good of naming? If you listen to infants beginning to speak, it is some time before they say anything that seems necessary. They call the names of things they see. So what? Mothers like to hear their babies say mama, but the baby does not know that. Why does it bother? Later on they start saying the names of things they want, but they had already gotten pretty good at expressing their desires by crying.

Some people say the idea of language is to organize words into sentences, but as a first principle that suggestion surely gets ahead of itself. St. John tells us In the beginning was the word and nobody is going to think of creating sentences before they think of speaking words.

On this blog, I argue that the idea of language is to create a shared perception through joint attention. This notion fits in nicely with Arbib's notion of learning through complex imitation. Master and apprentice attend to the same task and the apprentice learns how to do it. But if that's the idea of language, why should manual imitation precede verbal imitation? Both imitative activities require the same basic brainpower.

There is a difference, however, in the body requirements. Toolmakers need tool-ready hands while speakers need speech-ready throats.. We know that apes already have the hands because they can make simple tools. It's their brains, not their hands that lag behind. But apes do not have vocalization-ready throats. If *Homo habilis* worked side by side for a million years making chopping tools, they might have gotten the right sort of brain for imitating speech but they would not have gotten the right sort of throat.

I think Arbib is on the right path with his attention to manual crafts, but his logic is too linear: (1) Make tools by imitation; (2) Brain evolves to and becomes language ready; (3) somebody got the idea of language and created protowords.

I believe the birth of language was the product of many evolutionary lines that interacted in ways we are unlikely to ever disentangle. Part of that co-evolutionary dance probably included vocalization and toolmaking, but before either of those two could get started the human lineage needed a communal willingness to share knowledge that would permit experts to tolerate

prolonged observation and imitation and novices who were motivated to learn from (be like) the experts. For speech to begin our lineage needed a vocalization-capable body, a sharing-tolerant community, and eager-to-learn instincts, and once we had all that a protolanguage of some form seems inevitable. Then came the poets with their many deliberate ideas.

Links:

Edward Sapir [http://www.mnsu.edu/emuseum/information/biography/pqrst/sapir\\_edward.html](http://www.mnsu.edu/emuseum/information/biography/pqrst/sapir_edward.html)

Steven Pinker <http://pinker.wjh.harvard.edu/>

Michael Arbib, <http://www.usc.edu/programs/neuroscience/faculty/profile.php?fid=16>

*Foundations in Evolutionary Cognitive Neuroscience: Introduction to the Discipline*

<http://www.amazon.com/gp/product/0521711185?ie=UTF8&tag=tellingitcom-20&linkCode=xm2&camp=1789&creativeASIN=0521711185>

Olduwan toolkit <http://www.lithiccastinglab.com/gallery-pages/oldowanstonetools.htm>