

Linguistics

Babelicious!

Jan 25th 2010

From Economist.com

Bigger languages are also simpler ones

WHY do some languages drip with verb endings, declensions that show how a noun is used, and other grammatical bits and pieces, while others rely on word order and context? The former category tends to include languages spoken by small groups in isolated settings like the Amazon or New Guinea. The latter include such languages as English and Mandarin.

This fact has made scholars wonder if languages simplify as they spread. Researchers have wondered if second-language learning of such conquering languages as English have led them to shed grammatical baggage. Many features of grammar are, in linguistic terms, "overspecified"—meaning redundant. The "s" on the end of "the two boys" is overspecified, since "two" shows that more than one boy is concerned. So, the theory goes, as adults learn languages, with abilities that have withered compared to children's native acquisition, the dispensable bits are dispensed with. But some linguists have simply assumed that all languages get simpler over time, or that few social factors correlate with complexity.

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As they describe in the *Public Library of Science*, Gary Lupyan of the University of Pennsylvania and Rick Dale of the University of Memphis set out to find some more solid evidence that expansion simplifies language. They took the 2,236 languages in the World Atlas of Language Structures and looked for correlations with the number of speakers of each language, the size of the area in which it is spoken, and the number of neighbouring languages. They looked for correlations with the languages' inflectional morphology, meaning the mostly obligatory prefixes, suffixes and other parts packed into individual words that carry specific meanings.

They found clear evidence that big, spreading languages have fewer of these features. They have fewer case-markings on nouns. Verbs are less likely to vary with person, place, time and so forth. Mandarin, for example, has no obligatory past tense at all; an extra word can come after the verb to indicate it happened in the past, or this can be left to context. By contrast, Yagua, spoken in Peru, has an obligatory five-way distinction. Past-tense verbs must show whether the event happened a few hours ago, a day before, a week to a month ago,

and so on.

The number of speakers of each language correlated best with morphological complexity, better than the area the language is spread over or the number of neighbours. This makes sense because a language with a large population of speakers has probably already been learned by many non-natives in the past. A language with many neighbours today would be, by this rationale, more likely to become simpler in the future, if the language spreads. Of course, languages in families share certain features, but Dr Lupyan and Dr Dale found that their results were significant even when language family and region were factored out.

This leaves the question of why languages would become complex at all. Dr Lupyan and Dr Dale offer several hypotheses. One involves the different needs of child and adult learners. Complex morphology is especially hard for adults to learn, but it may help children, as the redundancy reduces the need for non-linguistic factors for understanding. (*Las casas blancas* tells a Spanish-speaking child three times that there are multiple white houses.) An alternative hypothesis is that complex morphology improves economy and clarity of expression, something that is desirable so long as it is not too difficult to learn. A final possibility is simply that smaller language groups more faithfully transmit the grammar to their children, overspecification and all, even if it has no use.

One thing is clear. Linguists have long known, despite the prejudices of those in rich societies, that “simple” people with primitive technologies do not speak simple languages. By the definitions used here, the native languages of North America and South America are the most complicated in the world, while Europe’s are the simplest.