

Three of a kind: Revealing language's universal essence

November 20 2009, by Peter Dizikes

friendship
友情
obúhugu

Graphic: Christine Daniloff

(PhysOrg.com) -- On the surface, English, Japanese, and Kinande, a member of the Bantu family of languages spoken in the Democratic Republic of Congo, have little in common. It is not just that the vocabularies of these three languages are vastly different; many of their rules of grammar diverge too.

Consider that in English, verbs must agree with their subject: We say, “I write,” or “he writes.” But Japanese has no need for such agreement, while in Kinande, agreement rules spread beyond subject-verb couplings to objects of a verb as well.

Despite such differences, English, Japanese, and Kinande share deep and

previously unrecognized similarities pertaining to the way sentences are formed, says Shigeru Miyagawa, the Kochi-Manjiro Professor of Japanese [Language](#) and Culture, and a professor in MIT's Department of Linguistics and [Philosophy](#). Miyagawa describes these commonalities in a new book, "Why Agree? Why Move?" published by MIT Press this fall.

The existence of similar structures in such otherwise disparate languages, Miyagawa asserts, provides strong evidence that all human languages have a common origin. Miyagawa believes we have an innate faculty for language that shapes the form all languages take, an argument MIT's Noam Chomsky developed in his theory of Universal Grammar, in the 1950s.

In this view, we do not invent languages from scratch. Rather, their eye-catching variation — from English to Japanese to Kinande — has evolved historically within specific limits. "Languages have this wonderful diversity," says Miyagawa, who is also head of the Foreign Languages and Literatures section at MIT. "But language is a biological system. It doesn't vary in some wild way. It cannot just be anything. Language is diverse within a highly defined pathway."

Linguistic layer cake

Miyagawa's book argues that a linguistic phenomenon known as "movement" reveals language's universal nature. Think of a simple sentence, such as "John ate a pizza." We have numerous ways to manufacture more complex variations of that sentence. For example: "Which pizza did John eat?" The subject, verb, and object remain the same. However, the word order changes; that movement helps provide the new meaning of the new sentence.

"If there were no movement in human language, you could not ask

questions,” says Miyagawa. “We would go around all day just making statements: ‘I drink coffee. It is a nice day.’ Movement happens so that human language has this rich expressive power, like asking questions, or giving orders. Without movement, human language would be just a shadow of itself, impoverished.”

Movement provides the same general function across languages. “When you look closely at sentences in any human language, there is a hierarchical structure, like two layers of a cake,” Miyagawa explains. The bottom layer is the “argument structure” of a sentence, and contains its core meaning (the fact that John ate a pizza). The top layer is the “expression structure” and adds complexity (as in, “Which pizza did John eat?”). Movement is one way sentences can distinctively express those more complex ideas.

As a basic rule, says Miyagawa, where there is movement, there are also changes in agreement. In English and Kinande (and the Indo-European and Bantu language families they represent), shifts in agreement are an essential part of a sentence’s movement toward greater complexity. For instance, note the way the verb changes from “ate” to “did eat” in our pizza example. In Kinande, the sentence “Abakali ba-ka-gul-a esyongoko” means, “The women buy chickens.” But an alternate version, “Esyongoko si-ka-gul-a bakali,” introduces movement, and a slightly altered Kinande verb (the middle word in both sentences). This means “the WOMEN buy the chickens.” By emphasizing “women,” the second version adds information: The person forming the sentence finds it especially important to note who is buying chickens.

That leaves a question: If movement is universal and almost always enabled by agreement, how does movement occur in Japanese, which has no agreement? In a novel argument, Miyagawa claims that although agreement does not exist in Japanese, movement occurs through two alternate facets of the language, “topic-marking” and “focus-marking.”

Topic-marking is the mechanism by which a phrase is placed at the head of a sentence; focus-marking uses intonation to do the same thing. These tools allow for greater sentence complexity in Japanese, as agreement does in [English](#) or Kinande.

Take the Japanese sentence “Taroo-mo hon-o katta,” which means, “Taro also bought a book.” In this case, mo is a focus-marking word, emphasizing that it is Taro who bought the book. (“Hon” means book, and “katta” means bought. Verbs come last in Japanese.) An alternate version of the sentence, however, is “Taroo-ga hon-mo katta.” Here, mo comes after “book” and changes the sentence’s meaning to, “Taro bought a book, too.” In this case the alternate construction adds complexity in Japanese by telling us Taro bought a book in addition to other activities.

While topic-marking and focus-marking have long been recognized parts of the Japanese language, other linguists have regarded them as optional parts of sentence composition. Miyagawa believes they are essential in order to generate the full complexity of Japanese, a hypothesis he developed after realizing that topic-marking and focus-marking are considered necessary for movement in Hungarian, too. So although “Japanese seems to be out in left field,” as Miyagawa puts it, by lacking the link between agreement and movement, it also has a “core computational system” that generates movement in other ways.

A case for universalism

Colleagues say “Why Agree? Why Move?” is a significant contribution to comparative linguistics. “What I particularly liked is the three-way comparison,” says Mark Baker, a professor of [linguistics](#) at Rutgers University. “He’s one of the leading experts on [Japanese](#) syntax, and it’s the first time somebody like that has looked at the Bantu languages in such depth.”

If Miyagawa is right, his argument would provide more evidence in support of the Universal Grammar theory. That position has been fiercely debated in recent years, following claims by linguist Daniel Everett of Illinois State University, who contends the Piraha people of Brazil have a uniquely impoverished language, lacking numbers and other standard attributes. The Piraha language, in Everett's view, stems from a unique culture, not a universal language facility. In a 2007 paper, MIT linguist David Pesetsky, along with the linguists Andrew Nevins of Harvard and Cilene Rodrigues of Emmanuel College, disagreed with Everett's claims, arguing many features of Piraha exist elsewhere.

Miyagawa says he thinks the response to Everett "is quite compelling and convincing." Still, he acknowledges, "Science is such that we're always challenged. And whatever we say about the Universal Grammar has to be provisional, with more and more research that we must do with other languages."

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