

Historical context guides language development

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Not only do we humans enjoy talking -- and talking a lot -- we also do so in very different ways: about 6,000 languages are spoken today worldwide. How this wealth of expression developed, however, largely remains a mystery. A group of researchers at the Max Planck Institute for Psycholinguistics in Nijmegen, the Netherlands, has now found that word-orders in languages from different language families evolve differently.

This contradicts the common understanding that word-order develops in accordance with a set of universal rules, applicable to all languages. Researchers have concluded that languages do not primarily follow innate rules of [language processing](#) in the brain. Rather, sentence structure is determined by the historical context in which a [language](#) develops.

Linguists want to understand how languages have become so diverse and what constraints language evolution is subject to. To this end, they search for recurring patterns in language structure. In spite of the enormous variety of sounds and sentence structure patterns, linguistic chaos actually stays within certain limits: individual language patterns repeat themselves. For example, in some languages, the verb is placed at the beginning of the sentence, while with others it is placed in the middle or at the end of the sentence. The formation of words in a given language also follows certain principles.

Michael Dunn and Stephen Levinson of the Max Planck Institute for

[Psycholinguistics](#) have analysed 301 languages from four major language families: Austronesian, Indo-European, Bantu and Uto-Aztecan. The researchers focused on the order of the different sentence parts, such as "object-verb", "preposition-noun", "genitive- noun" or "relative clause-noun", and whether their position in the sentence influenced the other parts of the sentence. In this way, the researchers wanted to find out whether the position of the verb has other syntactic consequences: if the verb precedes the object for example ("The player kicks the ball"), is the preposition simultaneously placed before the noun ("into the goal")? Such a pattern is observed in many languages, but is it an inevitable feature of how languages develop?

"Our study shows that different processes occur in different language families," says Michael Dunn. "The evolution of language does not follow one universal set of rules." For example, the "verb-object" pattern influences the "preposition-noun" pattern in the Austronesian and Indo-European languages, but not in the same way, and not in the other two language families. The researchers never found the same pattern in word-order across all language families.

Since the 1950s, the American linguist Noam Chomsky has been defending the view that there are universal similarities between all languages. He claims that this is due to an innate language faculty that functions according to the same principle in any human being. On the other hand, the linguist Joseph Greenberg does not put forward the existence of a genetically determined "universal grammar", but does speak of a "universal word-order", whereby the general mechanisms of language-processing in the brain accordingly determine word-order and sentence structure. These new results are inconsistent with both of these views. "Our study suggests that cultural evolution has much more influence on language development than universal factors. Language structure is apparently not so much biologically determined as it is shaped by its ancestry," explains Stephen Levinson.

The next step for the scientists is to examine the evolutionary processes governing language structure in other language families, as well as to examine the diversity of other linguistic features within this evolutionary perspective.

More information: Michael Dunn, Simon J. Greenhill, Stephen C. Levinson, Russell D. Gray Evolved structure of language shows lineage-specific trends in word-order "universals" *Nature*, Advance Online Publication, 13 April 2011

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