abstract 095

Word order correlations in the domain of complex sentences: Syntactic processing and/or grammaticalization?

Word order correlations have been a central topic in linguistic typology for 50 years; but despite intensive research some central questions regarding the nature and analysis of word order correlations are still unresolved today (see Special Issue of *Linguistic Typology* 15, 2011). In this paper we analyze new data from a typological project on clause and constituent order in complex sentences in light of some central issues of the word order debate. Specifically, we investigate the correlation between the position of subordinate clauses and the position of the subordinator (i.e. complementizer, relativizer, subordinate conjunction). While this correlation is only indirectly related to the VO/OV typology, it plays an important role in the theoretical literature on word order universals (e.g. Hawkins 2004; Dryer 2009).

Earlier studies observed that the subordinator often occurs at the borderline between main and subordinate clauses (e.g. Grosu and Thompson 1977); but this has never been systematically investigated. Using data from a stratified sample of 106 languages, we examined the subordinate markers of pre- and postnominal relative clauses, pre- and postverbal complement clauses, and pre- and postposed adverbial clauses. In accordance with previous observations we found that postposed subordinate clauses are commonly marked by an initial subordinator, whereas preposed subordinate clauses typically include a final marker. The correlation is highly significant (Fisher exact $p<0.01$); but deviant from the general trend, preposed adverbial clauses (notably *if* and *when* clauses) are also often marked by an initial subordinator and some postposed subordinate clauses include a final marker.

In a first step we analyze these data from the perspective of syntactic processing. Specifically, we show that Hawkins' processing theory of order and constituency accounts for nearly 80 percent of our data; but while this theory implies that processing shapes linguistic structure over time, it does not explain how this correlation may have evolved. In fact, as it stands the theory suggests that there is a set of predefined categories, i.e. subordinate clauses, main clauses, and subordinators, and then processing 'decides' as to how these elements are arranged. But this is not a plausible scenario.

In a second step we argue that our data can also be explained by grammaticalization (cf. Givón 1975). Specifically, we show that the position of the subordinator is determined by its position in the diachronic source. For instance, it is well known that the subordinate markers of (some) complement clauses are derived from quotative verbs. In the grammaticalization literature, this development is commonly described as reinforcement; but syntactically it involves the reanalysis of two recursively embedded subordinate clauses in which the higher level clause, i.e. the quotative clause, is reduced to a subordinator, i.e. a complementizer. Since quotative clauses (often) function as some kind of complement, they typically precede the main verb in OV languages and follow it in VO languages so that preverbal quotative verbs develop into final markers of preposed subordinate clauses, whereas postverbal quotative verbs are reanalyzed as initial complementizers of postposed subordinate clauses.

The analysis we propose is parallel to the one that has been proposed for other word order pairs, notably for the correlation between verb&object and auxiliary&verb (Bybee 1988). But unlike auxiliaries, subordinators evolve from a wide range of sources so that the effects of grammaticalization on word order are not immediately recognizable. Our analysis shows that the developments of subordinate markers are extremely complex and diverse; but there are some very common diachronic paths (for which we will provide quantitative data) that do not only account for the above mentioned correlation between the position of subordinate clauses and the position of the subordinator, but also for the 'deviant cases' that are unexplained by current processing theories (e.g. postposed subordinate clauses with final subordinate markers). Challenging the syntactic processing account, we conclude that the phenomena investigated in this paper are more effectively explained by local diachronic processes than by global processing principles.