

Evolutionary Typology of Bound Verbal Person-Number Indexes

Intro: The present paper seeks to identify universal trends in the lengths of person-number affixes of verbs. Instead of *bound pronouns* or *agreement markers* and following Lazard (1998) and Haspelmath (2013) and refer to these as to *bound person-number indexes*. The precise morphophonological realization of indexes is subject to cross-linguistic variation, which, however, has no bearing on the claims to be made here (cf. Haspelmath 2013). For example, I gloss over the morphological differences between affixes and clitics. Given the diachronic perspective of the paper it does make sense to treat these as variants of the same phenomenon. In order to identify universal trends I adopt the *dynamic approach* to universals (since Greenberg 1969) which is in contrast to the more traditional, *static approach*. The *dynamic approach* relies on the comparison of two subsequent historical stages, i.e. a proto-stage and its modern descendant, in order to investigate the *transition* between these two. The crucial question here is whether the relevant mechanisms of change provide evidence for the alleged universal (Bybee 2008) or whether the changes bring about a higher degree of adherence to the alleged universal pattern than before these changes (Bickel et al. 2014). The dynamic approach overcomes a number of shortcomings of the static approach.

Methods and the data: I rely on a database with obligatory intransitive subject indexes from (a) 290 modern languages from 14 unrelated (sub)families covering all macroareas and (b) their proto-forms as reconstructed by the Historical-Comparative Method in the authoritative literature: Indo-European, Uralic, Mayan, Dravidian, Semitic, Oceanic (a subfamily of Austronesian), Bantu (Niger-Congo), Sogeram (Trans-New-Guinea stock), Awyu-Dumut (Trans-New-Guinea stock), Rgyalrongic-Kiranti (Tibeto-Burman), Worroran, Muskogean, Athabaskan and Turkic. The transition is revealed by comparing the lengths of the proto-forms and the respective averaged lengths in the modern languages (approx. 10-50 modern languages per (sub)family).

Claims and discussion: I will make three major claims as regards the lengths of the indexes: (i) there is an attractor state in terms of “the ideal length” of the indexes which modern languages tend to arrive at; (ii) modern languages tend to develop shorter indexes for the third person as opposed to the first and second person but there is no trend for zeros (cf. Bickel et al. 2015; pace Benveniste 1971; Koch 1995; Bybee 1985: 53; Cysouw 2003: 61-2; Siewierska 2010); (iii) modern languages tend to keep plural indexes longer than their respective singular counterparts. Crucially, these universal tendencies are observed despite very diverse prerequisites in the respective proto-languages (some (sub)families such as Proto-Indo-European or Proto-Bantu start with proto-forms that do not adhere to these generalizations) and, what is more, despite very diverse historical changes that the particular indexes undergo (reduction by sound law, analogical restructuring, lengthening, retention, etc.).

Moreover, I will show that index systems considerably violating the lengths predictions (i)-(iii) are either recent innovations (predicted to subsequently develop towards adherence) or the whole indexing system undergoes a functional change into a non-referring and thus largely semantically redundant system (gram-indexing) as, for example, in German *geh-e*, *geh-st*, *geh-t* where the indexes are not referring anymore.

The mechanism that licences these lengths proportions and the attractor state in the long run is crucially based on frequency that drives the adaptation of the more efficient variant from those produced by various historical accidents (shortening, lengthening, analogical replacement, etc.). The lengths asymmetries in (ii) and (iii) fully align with the predictions by Zipf (1939): the more frequent index is coded with less material while less frequent indexes need more material.

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