From Greenberg's U(niversal) 20 to language acquisition: new considerations.

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There are several works which tentatively analyze Greenberg's (1966 [1963]) U(niversal) 20, thus making a cross-linguistic comparison of the syntactic arrangements of Noun, Adjective, Numeral and Demonstrative. After an analysis of various works on the matter, I claim that one should focus on the lexical elements of each category that have the least cross-linguistic variation and feature as few functional, semantic and syntactic properties as possible. As an example, I argue that only non-complex numerals that do not change their function over time (so that for example *one* and *two* are excluded, because they tend to be used as an article and as a mark for dual number, respectively) should be considered, and similar criteria should apply to the other categories as well. In particular, I conclude that not all adjectives should be considered for such a universal: only the ones that are not recursive (see Roeper 2011§2.2) should be accounted for. This implies that strong differences between the acquisition of recursive and non-recursive elements could be tackled by determining what belongs to U20, and why.

For the sake of such goals, I concentrate on the works by Roberts (2017) and Medeiros (2018): the former notices that the syntactic string *[Numeral Noun Demonstrative] tends to be systematically avoided and therefore claims that a *F(inal-) O(ver-) F(inal) C(onstraint)* (see Biberauer *et alii* 2014) applies to U20, while the latter shows that one can predict the orders that are never attested within Cinque's (2005) data by applying a stack-sorting processing algorithm to the four elements of U20, so that a strict ban on two linear orderings emerges: *[Numeral Demonstrative Noun] and *[Adjective Numeral Noun]. In my MA thesis I proposed to account for both the quantitative variation and the updates of the data given by Dryer (2018) by stating that a second FOFC co-operates with Roberts's one. Such a move implies a reworking of Medeiros's approach as well. Even if one assumes that the mechanisms of his algorithm are tenable, one can still question the nature of the hierarchy of categories ruling the process, so that the *f(unctional)-seq(uence)* he posits is no longer immutable and exceptions can be accounted for. Put differently, while Medeiros (2021§2) claims that the generative procedure he posits is fixed, universal, and applicable to any string of any language, I am lead to think that it is not. First of all, I argue that the hierarchy governing the mapping between input strings and *f-seq* in specific circumstances could apply not only from the top down, but from the bottom up as well. In this way exceptions to Medeiros's bans for U20 can be accounted for, and such an alternation between top-down and bottom-up could be a crucial tool for distinguishing between embedded and non-embedded domains within a string (in a fashion that resembles the *Alternating Phase Constraint* described in Roeper 2011§2.2). If this were actually the case, future research would need to tackle what are the factors that allow such a mirroring in the hierarchy during the acquisition of a specific grammar. Secondly, the hierarchy that Medeiros posits for his stack-sorting algorithm could either be innate or be modified through time due to the exposure to certain linguistic data. If children can modify such a hierarchy during their language acquisition, an explanation for the differences between different grammars would be straight-forward: one could hypothesize that different languages recognize and hierarchize different sets of categories, with striking differences in the subsequent ability to parse them.

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