The Left Edge Ban: a prosodic requirement governing stress patterns and word order

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(1) **The Left Edge Ban:**
* ((L **H** …
where L means "light"
and **H** means "heavy"

I propose a ban, (1), which rules out a type of unbalanced constituent from appearing at the left edge of a larger constituent. I argue that two crosslinguistic trends—a skewed distribution of fixed stress patterns and the unavailability of certain disharmonic word orders—receive a unified explanation under this ban, which holds at different levels of the prosodic representation.

The LEB at the word level: Large-scale surveys of fixed stress systems [Hyman (1977), Gordon (2002), Goedemans et al. (2015)] find that five systems are attested. The distribution of these patterns is skewed. *Initial*, *Final*, and *Penultimate* patterns predominate [∼90% in total] whereas Peninitial [∼6%] and Antepenultimate [∼4%] patterns are considerably rarer. **The LEB allows us to understand this skew**, given a simple stress placement algorithm. Suppose first that syllables [or morae] are grouped into feet. Suppose also that the principles of stress assignment pick out the left- or right- most element in a domain to assign stress, and that this choice is made successively down the domains until a stressable element is found. Given two levels of embedding—namely the foot and word—we predict four of the five attested patterns, where **H** = stressed and L = unstressed. **The peninitial structure**, (5), **is ruled out by the LEB**, (1).

(2) **Final** …(L **H**)$_{ft}$)$_{\omega}$

(3) **Penultimate** …(**H** L)$_{ft}$)$_{\omega}$

(4) **Initial** ($_{\omega}$($_{ft}$ **H** L) …

(5) **Peninitial** *($_{\omega}$($_{ft}$ L **H**) …

The current system undergenerates: it cannot generate peninitial or antepenultimate stress systems, which are attested but rare. Allowing extrametricality of no more than one syllable/mora into the system allows us to generate antepenultimate stress [penultimate stress + rightmost extrametricality] and peninitial stress [initial stress + leftmost extrametricality]. Postpenitial stress is still correctly still ruled out by (1), analogous to (5).

(6) **'Antepenultimate' stress** …(**H** L)$_{ft}$)$_{\omega}$ L

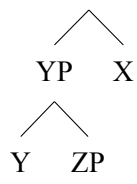
(7) **'Peninitial' stress** L ($_{\omega}$($_{ft}$ **H** L) …

(8) **'Postpeninitial' stress** *L ($_{\omega}$($_{ft}$ L **H**) …

We can therefore understand the relative rarity of peninitial and antepenultimate stress as a consequence of these patterns being generable only with the help of an additional mechanism: extrametricality.

The LEB at the sentential level: Much work [Greenberg (1963), Vennemann (1974), Hawkins (1983), Sheehan et al. (2017), a.o.] finds that harmonic word orders—those where heads are linearly adjacent to the head of their modifying elements—are preferred over disharmonic word orders. Roberts (2000), Biberauer et al. (2014), Sheehan et al. (2017) find that one disharmonic word order—with a corresponding syntactic structure, (9)—is crosslinguistically unattested. They propose **the FOFC**, a condition on syntactic structure, which bans the structure in (9). Note the similarity between the banned syntactic structure in (9) and the sort of prosodic structure ruled out by the LEB in (1): both rule out a constituent—here, YP—containing a 'light' element —here, a head, Y—followed by a 'heavy' element—here a phrase, ZP—from appearing at the left edge of some larger constituent. I suggest that **many of the word orders ruled out by the FOFC are ruled out by the LEB**. Assuming a theory of the syntax-prosody mapping proposed in [Selkirk (2009 et. seq, a.o.)], in which XPs are mapped to phonological phrases, ϕ, and X^0 are mapped to phonological words, ω, we expect the structure in (10) to be ruled out by the LEB. The structure contains an (L **H**) constituent—here, [$_{YP}$ Y ZP] = ($_{\phi}$ ω ϕ)—at the left edge of a larger ϕ, corresponding to XP, which the LEB bans.

(9) *



One of the original motivations for FOFC (Holmberg 2000) is the unavailability of V-O-Aux word orders in Finnish. Now consider (10), where we see that **FOFC-violating orders are allowed in Finnish** (Sheehan et. al (2017) [ch. 6, 10]), **when the object is phonologically light**.

(10) Kyllä minä ($_{\phi}$($_{\phi}$ lukenut sen) olen)
PRTCL I read it AUX
'I have indeed read it.' *Sheehan et. al (2017)*

Such facts challenge classical formulations of the FOFC: on this view, there is no clear sytactic difference between (9-10) and comparable sentences with non-pronominal direct objects/adjuncts. The LEB, which is defined over prosodic structure, leads us to expect such contrasts. **If the object in these cases is demoted from a ϕ to an ω**—because is a destressed pronominal element [Selkirk (1996 a.o.)]—**then the structure will be admissible given the LEB**. The phrase in danger of violating the LEB—that which contains the verb and object/adjunct—would be a (L L) constituent, which are not restricted by the LEB.

Object position in VP-fronting languages: Another difference between the LEB and the FOFC is that the LEB makes no direct reference to headedness: a FOFC-like restriction emerges under the LEB since the syntactic structure can map to a LEB-violating configuration only when a phrase is leftmost in some larger phrase, as in the structure ruled out by the FOFC. **Given we LEB, we expect there to be cases where a $(_\phi\,(_\phi\,\omega\,\phi$ … configuration is ruled out in the absence of a following head**, in contrast to the FOFC.

Recent work on the syntax of verb-initial languages has unearthed a set of facts that fall neatly in line with this expectation. van Urk (2019) investigates the distribution of verbal complements acros unrelated V-initial languages, from which the generalization in (11) emerges.

(11) *van Urk's Generalization:* In mixed VXO/VOX languages, VOX is tolerated only when O is light.

The effect of (11) can be seen in Ch'ol [Mayan], (12-13). In (12), we see that a VOX order is in principle allowed if the object consists of a single word. However, in (13), we see that the VOX order is disallowed when the object consists of more than one word; only VXO is allowed with a definite object like that in (13).

(12) Mi [$_{VP}$ j-k'ux$_\omega$ waj$_\omega$] tyi kosina
IMPF A1-eat tortilla P kitchen
'I eat tortillas in the kitchen.'

(13) * Mi [j-k'ux$_\omega$ [jiñi$_\omega$ waj$_\omega$]$_\phi$] tyi kosina
IMPF A1-eat DET tortilla P kitchen
'I eat the tortillas in the kitchen.' *Coon (2010)*

The LEB explains (12-13) in a fairly straightforward fashion: **a heavy object cannot phrase together with the verb, since the structure violates the LEB**. Only the word order in (13) will result in the $(_\phi\,(_\phi\,\omega\,\phi\,)\,\ldots$ structure that the LEB rules out. The lightness of the preverbal object in (12) results instead in a $(_\phi\,(_\phi\,\omega\,\omega\,)\,\ldots$ structure, which the LEB allows.

I furthermore argue that different languages respond to van Urk's generalization — in turn, an effect of the LEB — differently. Another way to avoid an LEB violation while VP fronting is to pronounce the verb in a non-initial position. Warao [isolate, Peru] — a language with canonical OSV word order (14-15) — is a potential example.

(14) [~~abu~~ erike]$_{VP}$ [hube] abu-ae
Enrique snake bite-TAM
'A snake bit Henry.'

(15) [~~nao~~ ma hanoko-mo]$_{VP}$ [ine] nao-te
1sg.pos house-ABL I come-TAM
'I come from my home.' *Romero-Figueroa (1997)*

This analysis explains a striking fact about Warao word order: in ditransitives, all VP-internal arguments precede the external argument, (16-17). Similar facts hold for structurally low adjuncts.

(16) [~~ribu~~ ma saba]$_{VP}$ [tamaha] [rieko] ribu-ae
1sg.O DAT this.one D. say-TAM
'Diego said this to me.'

(17) [~~V~~ noboto-mo saba]$_{VP}$ [arukobo] [ine] obono-ya
child-PL DAT manioc I want-TAM
'I want manioc for the children.' *R.-F. (1997)*

We can similarly understand the difference in the position of causees demonstrated in (18-19). Causees which originate outside VP — like the external argument of *eat* — appear to the right of the causer, as in (18). Causees which originate inside VP — such as the internal argumnet of *die* — are part of the fronted VP, and appear to the left of the causer, as in (19).

(18) [~~V~~ wahabu-ma]$_{VP}$ baretira [ka] e-nahoro-ae
venison-DAT nuns 1pl CAUS-eat-TAM
'The nuns made us eat venison.'

(19) [~~wab~~ tir isaka]$_{VP}$ tobe i-wab-ae
woman one jaguar CAUS-die-TAM
'The jaguar caused the woman to die.' *R.-F. (1997)*

Selected References: Gordon (2002) "A factorial typology of quantity-insensitive stress.", *NLLT 20.3* • **Greenberg (1963)** "Some universals of grammar with particular reference to the order of meaningful elements", in *Universals of grammar.* • **Sheehan, Biberauer, Roberts and Holmberg (2017)** *The Final-Over-Final Condition: A syntactic universal.* • **van Urk (2019)** "VP-fronting in Imere and the stranding problem."