

## Mobile Lexical Parentheses in Metrical Grids

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We propose that the Simplified Bracketed Grid (SBG) theory of metrical structure (Idsardi 1992; Halle & Idsardi 1995; Halle 1997) needs to distinguish parentheses associated with lexical markings from other types of parentheses, and must include parentheses that move. In (1), we give sample words in three languages; all have convention Edge Right that assigns a right parenthesis at the right edge of Line 0. (1a) is a language with lexical accent (e.g. Russian). The first syllable of the stem (e.g. *koróv-* ‘cow’) is underlyingly unaccented (mnemonic U), as is the suffix; the second syllable (A) has a lexical accent. Accented syllables project a left parenthesis designated (<sup>L</sup>. Line 0 constituents have Head Left, projected to Line 1. Main stress is projected to Line 2.

|                            |  |                  |           |
|----------------------------|--|------------------|-----------|
| (1) a. Lexical accent      | b. QS                                      | c. QI and ICC    |           |
| x                          | x  | x                | Line 2    |
| (x                         | (x      x                                  | (x      x      x | Line 1    |
| x ( <sup>L</sup> x      x) | x ( <sup>L</sup> x x x ( <sup>L</sup> x x) | x x) x x) x)     | Line 0    |
| U    A + U                 | L   H L L   H L                            | S   S S S S      | Syllables |

In a quantity-sensitive (QS) language like Khalkha (1b), heavy syllables (H) project (<sup>L</sup>, and heads are again adjacent to the parenthesis. Classical SBG does not require adjacency, however. In Maranungku (1c), Iterative Constituent Construction (ICC) from the left puts a right parenthesis after every two grid marks. Line 0 heads are on the left, not adjacent to the ICC parentheses. Dresher (1994, 2016) argues that heads must be adjacent to (<sup>L</sup>, as in (1a, b). Allowing heads of (<sup>L</sup> to be on the opposite side would fail to account for the inherent prominence of A and H syllables, and would result in an unattested kind of ‘anti-QS’ where stress tries to avoid H syllables.

Lexical parentheses must also be allowed to move. There are East Slavic noun paradigms that put stress on the stem in the singular and on the suffixes in the plural, or on the suffixes in singular and on the stem in plural. Osadcha (2019) shows that such ‘shifting stems’ are very common in Ukrainian and Belarusian and also occur in Russian. She proposes to mark such stems with a lexical parenthesis labelled (<sup>S</sup>, which is subject to the rule in (2). Thus, a stem like Russian *gorod-* ‘city’ (3a) has the metrical lexical (underlying) representation (UR) (<sup>S</sup>x x-: it is accented in SG, and post-accenting in PL. The stem *kolbas-* ‘sausage’ has the metrical UR x x(<sup>S</sup> -: it is post-accenting in SG and accented on the final syllable of the stem in PL (3b).

(2) Shifting rule: In the plural, move a (<sup>S</sup> parenthesis minimally to an adjacent morpheme.

|                    |                      |                      |                      |        |
|--------------------|----------------------|----------------------|----------------------|--------|
| (3) a. NOM SG      | NOM PL               | b. NOM SG            | NOM PL               |        |
| ( <sup>S</sup> x x | x x ( <sup>S</sup> x | x x ( <sup>S</sup> x | x ( <sup>S</sup> x x | Line 0 |
| <i>gó rod</i>      | <i>go ro d + á</i>   | <i>kol ba s + á</i>  | <i>kol bá s + y</i>  |        |

There are also edge parentheses that move. Roca (2005) and Doner (2017) show that Spanish stems have lexical edge marks. *almíbar* ~ *almíbares* ‘syrup’ and *carácter* ~ *caractéres* ‘character’ have Edge Right. In (4a), ICC from the right and Head Left apply as expected, but in (4b) edge marking must apply at the word level to yield the PL. We propose that the stem has UR xxx<sup>w</sup>), where <sup>w</sup>) must move to the end of the word. SBG with mobile lexical parentheses is thus a unified framework that can account for the complex stress patterns of E. Slavic and Romance.

|                                   |   |                                     |  |        |
|-----------------------------------|---|-------------------------------------|--|--------|
| (4) a. SINGULAR                   | PLURAL  | b. SINGULAR                         | PLURAL   |        |
| x                                 | x   | x                                   | x      x                                       | Line 1 |
| x (x x)                           | x (x x)      x                                | x (x x <sup>w</sup> )               | (x x (x      x <sup>w</sup> )                  | Line 0 |
| <i>al mí bar]</i> <sub>Stem</sub> | <i>al mí bar]</i> <sub>Stem</sub> + <i>es</i> | <i>ca rác ter ]</i> <sub>Stem</sub> | <i>ca rac tér]</i> <sub>Stem</sub> + <i>es</i> |        |

## References

- Doner, Julianne. 2017. Spanish stress and lexical accent across syntactic categories. *Probus* 29(2): 233–85.
- Dresher, B. Elan. 1994. Acquiring stress systems. In Eric Sven Ristad (ed.), *Language computations (DIMACS Series in Discrete Mathematics and Theoretical Computer Science, v. 17)*, 71–92. Providence, RI: AMS.
- Dresher, B. Elan. 2016. Covert representations, contrast, and the acquisition of lexical accent. In Jeffrey Heinz, Rob Goedemans, and Harry van der Hulst (eds.), *Dimensions of phonological stress*, 231–62. Cambridge: Cambridge University Press.
- Halle, Morris. 1997. On stress and accent in Indo-European. *Language* 73(2): 275–313.
- Halle, Morris and William J. Idsardi. 1995. General properties of stress and metrical structure. In John A. Goldsmith (ed.), *The handbook of phonological theory*, 403–43. Cambridge, MA & Oxford: Blackwell.
- Idsardi, William. 1992. The computation of prosody. Doctoral dissertation, MIT, Cambridge, MA.
- Osadcha, Iryna. 2019. Lexical stress in East Slavic: Variation in space and time. Doctoral dissertation, University of Toronto.
- Roca, Iggy. 2005. Saturation of parameter settings in Spanish stress. *Phonology* 22(3): 345–94.