

Prosodic Recursion as a Consequence of Cyclic Spellout

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This paper aims to show that phonological recursion above the syllable may arise as a consequence of the way syntactic structure is spelt out cyclically. The analysis is situated in the Mapping and Pruning (MaP) model of Perry (2016, ms) The MaP model divides prosodification into two sequestered sets of processes – an invariant ‘mapping’ component which proceeds deterministically from a given syntactic structure, and a ‘pruning’ component which enforces phonological well-formedness (cf. Richards 2016). In this paper, it is shown that at least some attested cases of phonological recursion can be accounted for solely by cross-linguistically motivated properties of the ‘mapping’ component.

The assumptions of the MaP model (slightly simplified) which are important for this paper are the following. 1. Phonological spellout of syntactic structure at the phase level is bipartite, with early (pre-VI) processes applying to the whole phase, including the phase edge. Prosodification is an early process of this type. 2. In the absence of language-specific pruning processes, if a syntactic element is associated with a prosodic constituent in one phase, it must be associated with that constituent throughout the derivation, with further elements associated by extension, only at the phase edge. 3. If a phonological phrase *can* be extended, it is extended obligatorily. As Perry (ms) shows, assumptions like these allow us to reproduce cross-linguistic properties of prosodification, such as the alignment of lexical projections with the edges of prosodic constituents.

The bipartite structure of spellout means that syntactic operations such as movement can be interleaved with early postsyntactic operations (for some evidence to this effect, see e.g. Martinović 2019 on Wolof), including prosodification. Suppose we have an initially headed transitive vP, with an internal argument in CompVP and an external argument in SpecvP. We can assume that V undergoes head-movement to v, placing it in the phase edge. We also assume that DPs are phases and are already associated with p-phrases (labelled φ_1 for the EA, φ_2 for the IA). When the vP is spelt out, φ_2 is extended at the phase edge to include the v head. If in the next phase v moves further (e.g. to T), it will remain associated with φ_2 – but φ_1 now intervenes between v and the internal argument – this can only be realised as a nested structure.

As (1) shows, this is exactly the situation that emerges in VSO languages such as Irish, and indeed Elfner (2012, 2015) shows that Irish displays recursive prosodic phrasing. The resulting phrasing is not quite what Elfner proposes but lets us to capture the tonal facts very simply – structures closer to Elfner’s can be obtained, if necessary, using pruning operations.

Recursive prosodic phrasing also emerges in ditransitives in Bantu languages, including Chimwiini (Kisseberth and Abashaikh 2011) and Kimatuumbi (Truckenbrodt 1999), diagnosed by e.g. failures of processes sensitive to p-phrase edges. This recursion may also be reproduced very simply – one of the objects moves to the vP phase edge, with the verb raising over it (e.g. to an intermediate functional projection below T). This is illustrated for Kimatuumbi in (2). A high verbal position and object extraction are both independently motivated in Kimatuumbi – the former by e.g. postverbal negation and the latter by variability in object ordering.

To conclude, if the assumptions of the MaP model are correct, various attested instances of phonological recursion can be derived predictably from syntactic properties – this opens up the possibility of using phonological recursion as a diagnostic for syntactic movement.

- (1) **Irish:** Assume H-L pitch accent maps to word at right edge of φ , L-H to left edge.

Díolfaidh rúnaí dathúil blathanna áille (Target sentence)

will.sell secretary attractive flowers beautiful.PL

L-H L-H H-L H-L (Observed accents)

‘The attractive secretary will sell beautiful flowers’ (Elfner 2012, 2015)

vP phase:

[_{VP} [_{DP} D ...] v+V [_{VP}-V [_{DP} D ...]]] (Initial syntactic structure)

(φ_1 rúnaí dathúil) (φ_2 blathanna áille) (Initial Prosodification)

(φ_1 rúnaí dathúil) (φ_2 blathanna áille) (Extension of φ)

[_{VP} [_{DP} D ...] v+V ...] (VI [vacuous], PIC)

CP phase:

[_{CP} C [_{TP} V+v+T [_{VP} [_{DP} D ...] ...]]]

(φ_2 (φ_1 rúnaí dathúil) blathanna áille) (Head movement)

(φ_2 (φ_1 rúnaí dathúil) blathanna áille) (Extension of φ)

[_{CP} C ...]]]

(φ_2 **díolfaidh** (φ_1 rúnaí dathúil) blathanna áille) (VI, PIC)

L-H L-H H-L H-L (Tone Association)

- (2) **Kimatuumbi:** There is a process of vowel shortening which applies to words which are *not* at the right edge of φ , whereas high tone insertion applies before left edge of φ .

Target sentence (failures of processes highlighted, with implied phrase-boundaries):

naampéi kikóloombe [*([*mambóondo*)] (no right boundary before *mambóondo*)

I.gave the.shell Mamboondo

‘I gave Mamboondo the shell’ (Odden 1994, Truckenbrodt 1999)

vP Phase:

[_{VP} [_{DP} D ...] v+V [_{VP}-V \emptyset P [_{DP} D ...]]] (Initial syntactic structure)

(φ_1 kikóloombe) (φ_2 Mambóondo) (Initial Prosodification)

(φ_1 kikóloombe) (φ_2 Mambóondo) (Extension of φ)

[_{VP} [_{DP} D ...] v+V ...] (VI [vacuous], PIC)

CP phase:

[_{CP} C [_{TP} T [_{FP} V+v+F [_{VP} [_{DP} D ...] ...]]]

(φ_2 (φ_1 kikóloombe) Mambóondo) (Head movement)

(φ_2 (φ_1 kikóloombe) Mambóondo) (Extension of φ)

[_{CP} C ...]]]

(φ_2 **na-a-m=pé-i** (φ_1 kikóloombe) Mambóondo) (VI, PIC)

Shortening and HTI processes are blocked as required by this prosodic structure.

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