<div align="center">Consonant-vowel alternations in Harmonic Serialism

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In Serbian, there is an alternation in which coda /l/ in an unstressed syllable becomes [ɔ], shown be low in (1) (Morén 2006). The key point here is that consonants and vowels rarely alternate with each other. Indeed, in the classic Clements (1985) feature geometry, vowels and consonants are represented with largely unrelated geometric structures. Nonetheless, there must be a way of representing this alternation.

(1) Serbian unstressed coda /l/ vocalization (Morén 2006)
   a. /ˈɔral/   →   [ˈɔ.ra.ɔ]   "eagle"
   b. /ˈval/   →   [ˈval]   "wave"

Furthermore, such an alternation must be analyzable in Harmonic Serialism (HS). HS is a serial-derivational variant of Optimality Theory (OT) in which only one operation may be applied in each step. A consequence of this limitation is that features must be changed one at a time (McCarthy 2010). HS therefore has a far greater need to specify its feature theory than does parallel OT. Without this information HS cannot compete with parallel OT, as it must know in advance the feature structure if it is to model unusual data such as consonant-vowel alternations. The solution is to integrate into HS, as has been proposed for parallel OT, the Parallel Structures Model of Feature Geometry (Morén 2003, 2006). In this model, there are separate vocalic and consonantal PLACE nodes, allowing for the clear and straightforward transformation of consonants into vowels. The use of this system integrates with existing precedents in HS: two-step deletion already relies on a Clements (1985) model of feature geometry, with PLACE nodes being deleted prior to ROOT nodes (McCarthy 2008, 2019). Parallel Structures simply expands upon this system, and shows potential for further empirical predictions regarding the typology of lenition.

This project is an adaptation of Morén's (2006) OT Parallel Structures analysis of Serbian coda vocalization into HS. The original analysis worked perfectly well in OT, which is why the present project seeks to build on it: Morén (2006) provides an excellent foundation for future work. The use of HS ought to predict languages which output forms which are intermediate in this analysis, something the OT analysis would not necessarily predict without use of different constraints.

The alternation of /l/ into [ɔ] specifically, as opposed to another vowel, is driven primarily by the velarized nature of /l/ in Serbian: like coda /l/ in English, Serbian /l/ has a dorsal node (Gick et. al 2006). This project argues that the insertion of a mora drives syllabification and subsequent vocalization of coda /l/. The selection of [ɔ] is held to arise from the dorsal node in coda /l/. The deletion of consonantal PLACE nodes, with vocalic PLACE nodes remaining, parallels, and expands on, the two-step deletion proposed by McCarthy (2019).

This project provides a principled method of analyzing consonant-vowel alternations in HS, and will further the effort to integrate feature geometry into the HS framework. By working with the Parallel Structures Model, this project aims to lay the foundation for a feature-geometric HS capable of elegantly analyzing vowels and consonants both using a single unified system.

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