

## **A Puzzle for the Effort-based Approach: Spirantization in North-Central Peninsular Spanish**

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With the emergence of phonetically-grounded approaches in Optimality Theory (OT) (Hayes *et al.* 2004), the notion of ‘effort’ has acquired a central explanatory role. However, effort-based constraints are largely motivated by articulatory properties with scant attention being paid to other sources of production difficulty. This presentation addresses the articulatory bias in Kirchner’s (1998, 2000) Effort-based Approach to lenition by exploring how speech aerodynamics can further the conceptualization and implementation of ‘effort’. I will present an analysis of a rather understudied case of spirantization in North-Central Peninsular Spanish (hereinafter, NCS) which provides empirical evidence that Kirchner’s ‘effort’ falls short in formally explaining the difficulty of producing certain manner-voice combinations (i.e. voicing plus frication).

In NCS, the spirantization of voiced stops /b d g/ in NCS produces (a) voiced approximants [β̞ ð̞ ɣ̞] in onsets between vowels, after [r] and [l] <sup>(\*)</sup> (like in most Spanish varieties), and (b) voiceless fricatives [f θ x] in word-medial and final codas (Gonzalez 2002, 2006a; Morris 2002). Kirchner’s Effort-based Approach has successfully predicted lenition that originates from variations in articulators’ displacements such as spirantization into voiced approximants (e.g. Kirchner 1998, Piñeros 2002). Yet, as I will show, Kirchner’s approach cannot satisfactorily explain cases of lenition that involve aerodynamic changes such as spirantization into non-strident voiceless fricatives. This presentation will offer a phonetically-grounded OT solution to NCS spirantization that builds upon Kirchner’s Effort-based Approach. I will argue that the optimal candidates of NCS spirantization result from the interaction of articulatory as well as aerodynamic effort-based constraints. I will also examine the role of perception, and propose a constraint inducing the enhancement of place contrasts in codas. Finally, I will discuss some implications of my proposal, and potential research applications.

<sup>(\*)</sup> Except for /d/ which typically remains a stop after [l].