

UNIVERSITY OF CALIFORNIA

SANTA CRUZ

**PHONOLOGY SHAPED BY PHONETICS:
THE CASE OF INTERVOCALIC LENITION**

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Abby Kaplan

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The Dissertation of Abby Kaplan
is approved:

Professor Jaye Padgett, Chair

Professor Armin Mester

Professor Grant McGuire

Professor Keith Johnson

Tyrus Miller
Vice Provost and Dean of Graduate Studies

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Abstract

PHONOLOGY SHAPED BY PHONETICS:
THE CASE OF INTERVOCALIC LENITION

Abby Kaplan

The goal of this dissertation is to explore the phonetic bases of intervocalic lenition – specifically, voicing and spirantization of intervocalic stops. A traditional understanding of phonological patterns like these is that they involve articulatory effort reduction, in that speakers substitute an easy sound for a hard one. Experiment 1 uses a novel methodology to investigate whether voiced and spirantized productions are truly easier than their unlenited counterparts: the speech of intoxicated subjects is recorded and compared with their speech while sober, on the hypothesis that intoxicated subjects expend less articulatory effort. This experiment thus attempts to observe effort reduction in action in the laboratory. The results of Experiment 1 do *not* provide evidence that voicing and spirantization are effort-reducing; rather, intoxicated subjects exhibit an overall contraction of the articulatory space. Experiments 2 – 4 investigate whether an alternative account of lenition based on perception is viable. Results suggest that attested alternations such as spirantization of voiced stops are preferred on perceptual grounds to unattested alternations such as intervocalic devoicing. Thus, the hypothesis of the P-map (Steriade 2001) can explain the broad strokes of lenition, although differences by place of articulation found in Experiment 3 do not match well with the typology. I conclude with an analysis of intervocalic spirantization couched within Optimality Theory, and particularly Dispersion Theory, using constraints motivated by Experiments 1 – 4. Unlike previous accounts of lenition, this anal-

ysis invokes no constraints that directly favor lenited forms over unlenited ones, since no such constraints were motivated by Experiment 1. The constraints that *are* made available by the experimental results are nevertheless able to account for a sizeable portion of the typology of lenition. I conclude that articulatory factors say less about lenition than traditionally thought, and that perceptual factors say more – and that theories of phonology that are committed to taking phonetics seriously must take notice.

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