

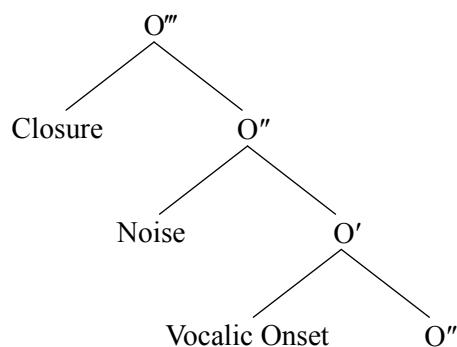
Melody vs. Structure – auditory considerations and segmental specification

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In the prosodic licensing (e.g. Ito 1986) vs. cue licensing (e.g. Steriade 1997) debate that has raged in the literature for over a decade, most phonetically inclined theorists have favored the cue-based approach, arguing that phonological contrasts are licensed when their perceptual cues are salient. While surveying the literature on cue-based licensing of consonantal contrasts, we may notice that most such studies make reference to acoustic cues that are spectral in nature: formant transitions on neighboring vowels, and the spectrum of obstruent aperiodic noise. In the articulatory-acoustic relationship, spectral properties are associated with place of articulation.

Manner of articulation, on the other hand, is cued by more general auditory properties: silence associated with stop closures, amplitude rise time, and the presence or absence of aperiodic noise, robust formant structure, or periodicity. These acoustic properties, which allow us to delineate speech into identifiable chunks, give structure to the signal – without them we would not know where to concentrate measurements of any spectral properties. Without ‘structure’ in the signal it would have been impossible for researchers to identify that, for example, Low F3 is a cue to retroflexion. As far as licensing is concerned, we might therefore say that licensing is cue-based, but cues themselves are both prosodic (structural) as well as spectral (melodic). From this perspective on the speech signal we arrive at the following insight: place of articulation is melodic, while manner of articulation is structural.

A similar insight is put forward in the most recent version (Pöchtrager 2006) of Government Phonology, which proposes that phonological constituents are arranged in binary branching structures. One nice aspect of Pöchtrager’s trees is that they allow us to define skeletal positions as inherently ordered auditory cues of a structural nature. This presentation builds on this insight, proposing the onset structure below, in which the hierarchy of onset nodes represents inherently ordered auditory properties to which spectral specifications may be linked.



In this environment we may implement both structural and melodic specifications for segments that reflect the realities of the acoustic signal, providing insights into consonantal strength, phonotactics, and the effects of constituent structure on phonological processing.

Ito, J. 1986. *Syllable Theory in Prosodic Phonology*, UMassachusetts, Amherst Ph.D. Dissertation. New York: Garland Press 1988.

Pöchtrager, M. 2006. *The Structure of Length*. Ph.D. Dissertation. University of Vienna.

Steriade, D. 1997. *Phonetics in phonology: the case of laryngeal neutralization*. Ms. UCLA.