The phonetic shape of phonological heads

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There is a recognised collection of phonological behaviours that can be considered characteristic of head positions in phonology, including a preference for maintaining contrasts, controlling harmony, resisting lenition or reduction, and promoting fortition. Together these behaviours fall within the general rubric of positional strength. What is perhaps less obvious is whether there is also some general phonetic property that characterises heads.

In this paper, I present a case for saying that phonological heads do indeed have a unified phonetic 'shape', taking my lead from stress accent. A stressed position can reasonably be considered the head of a domain such as the foot or word. Compared to unstressed, a stressed position is characterised by some combination of more radical pitch movement, greater duration, and greater intensity. The overall effect is that a stress head modulates the carrier signal in speech to a greater extent than a stressless non-head.

The same overall phonetic shape can be observed in segmental phonology. The parallel with stress may not appear particularly obvious when segmental effects are described in traditional phonetic or feature terms. However, it emerges more clearly when we focus on the way consonants and vowels modulate the carrier signal. I illustrate with an acoustic analysis of Ibibio, where consonants can be shown to modulate the carrier to differing extents according to where they occur within the stem. There are independent reasons to treat the first syllable of the stem as the head of its domain in Ibibio. In this position, a consonant can be shown to perturb the carrier more radically than consonants in non-head positions, including in ways that are not readily captured using traditional phonetic taxonomy.

The question 'WTF is a head' raises a related question: WTF are heads for? I review evidence that the heightened modulation shape of heads in phonology serves the communicatively useful purpose of helping to delineate morphosyntactic domains.