CHAPTER 7

The Role of Prominent Prosodic Positions in Governing Laryngealization in Vowels: A Case Study of Two Panoan Languages

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1 Introduction

There exist languages in which both tones and types of phonation contrast. In these languages, when vowels in non-modal phonation bear a contrastive tone, portions appear in modal voice. An illustrative case is Yalálag Zapotec, spoken in the state of Oaxaca, Mexico. According to Avelino-Becerra (2004), Yalálag Zapotec has three contrasting tones: high, low, and falling (e.g. /já/ ‘sweathouse’, /jà/ ‘bell’, /jâ/ ‘cane’). With regard to phonation types, Yalálag Zapotec contrasts modal vowels versus laryngealized vowels (e.g. [ze] ‘each’, [zə] ‘wall’).

In minimal pairs of Yalálag Zapotec words that have laryngealized vowels but differ in terms of high, low or falling tone, those laryngealized vowels present portions of their duration in modal voice. Figure 7.1 shows the case of the minimal pair: /bà̰/ ‘animal’ versus /bá̰/ ‘smooth’. Both words have the same laryngealized vowel /a̰/. In the former case, there is a low tone while in the latter, a high one. The laryngealization in both vowels can be observed by looking at the vertical striations in the spectrogram. They indicate that the glottal pulses occur at a much slower and non-periodic rate. Interestingly, both vowels show sections of modal phonation, particularly from the beginning toward the middle of each vowel.

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1 Avelino-Becerra (2004:77) transcribes Yalálag Zapotec laryngealized vowels with a super-scripted glottal stop that interrupts the vowel. Thus, for instance, the word for ‘wall’ is transcribed as [zeʔe]. In this paper, I will transcribe them as vowels with the subscripted diacritic [˷] to emphasize the idea that these vowels behave as single phonological units.
In his article on laryngeal complexity in Otomanguean vowels, Silverman (1997:257) explains that the presence of modal voice in vowels with a phonological specification for non-modal phonation is a way of facilitating the maintenance and recoverability of other phonological contrasts. This occurs because non-modal phonation weakens the acoustic cues that help the listener recover phonological contrasts (see also similar remarks in Gordon 1998; Gordon and Ladefoged 2001; Blankenship 2002; Avelino-Becerra 2004, among others). Thus, in Yalálag Zapotec, the presence of modal voice in non-modal phonation vowels provides the listener with the opportunity to recover the cues to distinguish between high, low and falling tones.

Although the presence of modal voice facilitates the listener’s recovery of acoustic cues—a task that is certainly more challenging during non-modal phonation—I disagree that the presence of modal phonation in non-modal vowels is necessarily related to the maintenance or recoverability of phonological contrasts. In this article, I will examine the case of two Panoan languages, spoken in the Peruvian Amazon: Capanahua and Shipibo. Neither has tonal or phonation contrasts. However, both behave like Yalálag Zapotec in that non-modal phonation, although non-contrastive, is avoided in places where it can weaken prominent prosodic positions associated with high pitch.

In Section 2, I examine the common phonetic realization of glottal stops as creaky/laryngealized phonation and present evidence for considering the glottal stop a consonantal segment in Capanahua and Shipibo. In Section 3, I provide a detailed characterization of the behavior of glottal stops in both Panoan languages. This section includes a discussion of their stress patterns since the phenomenon of glottal coalescence interacts with the metrical system in both cases. Finally, in Section 4, I discuss two approaches to account for the data presented. I argue in favor of considering prominent prosodic positions as the crucial and unifying force behind the behavior of vowel laryngealization.