

# The Acquisition of L2 Laryngeal Features: The Processing of Robust Transitional Phonetic Cues

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Second language learners often have to acquire L2 segments or sequences which are not licensed by their L1 phonology. It is well-documented that not all segments are equally difficult to acquire (see the plethora of work inspired by Flege's Speech Learning Model or Best's Perceptual Assimilation Model). Similarly, not all consonantal sequences are equally easy to acquire as shown by the work of Carlisle 2006, and many others. In this paper/poster, I examine the role of transitional phonetic cues (in the sense of Wright, 2004) to account for the empirical data related to the acquisition of L2 segments and consonantal sequences involving laryngeal features. In looking at the L2 acquisition of ejectives, breathy voice, [h] and homorganic onset clusters, I will argue that the second language learners privilege the processing of certain types of transitional cues (e.g. release burst) over the processing of internal cues (e.g. formant structure). This extends the work of Vanderweide (2005) on first language acquisition to second language acquisition.

Gonzalez (2011) looks at the acquisition of Yucatec Mayan ejectives by native speakers of Spanish. Spanish lacks the phonological feature necessary to represent ejectives ([constricted glottis]) and yet the second language learners are able to acquire the novel segments as attested in both discrimination and lexical selection tasks. The results clearly show that it is the transitional release burst which explains the developmental path when such things as manner (stop, fricative or affricate) and syllable position (onset or coda) are factored in. Jackson (2009) looks at the acquisition of Hindi stops by native speakers of French and English. The English subjects are more accurate on contrast involving the feature [spread glottis] only (found in their L1) while the French subjects are more accurate on contrasts involving the feature [voice] only (found in their L1). One area of exception to this pattern is the surprising accuracy of the French subjects on the contrasts involving voiced aspirated consonants. They are not significantly different from the English subjects on these contrasts. I argue that it is the transitional cue to the breathy voice which accounts for the accuracy. Cardoso (2007) and (2009) reveals an asymmetry between production and perception in the acquisition of branching onsets by Brazilian Portuguese learners of English. Their production accuracy is argued to be best explained by markedness facts (such as the Sonority Sequencing Generalization) while their perception accuracy is argued to be best explained by the frequency of the different clusters in the input. Contra Cardoso (2009) I will argue that it is the difference in transitional cue which accounts for the greater accuracy in the perception of [st] sequences compared with [sn] and [sl] sequences. Finally, the work of Mah (2011) will be discussed in which she demonstrates that Francophone learners of English have difficulty acquiring /h/. The lack of robust transitional cue in the /h/ + vowel sequence explains the difficulty of processing.

Taken together, all of these studies show that second language learners first use transitional cues over internal cues when it comes to processing L2 input. These transitional cues dictate that certain segments and sequences become intake to the processor earlier than sequences relying on internal cues. Such cues must be considered in addition to factors such as phonological features and input frequency in explaining the nature of L2 phonological systems.

## Gonzalez. Accuracy Results on Discrimination of Ejectives

	Native Speakers	Non-Native Speakers
Onset	96.6%	81.3%
Coda	92.7%	59.3%
Foil	100%	100%

## Jackson. Accuracy Results on Discrimination of Voicing & Aspiration

	English	French
[Voice]	68.9%	79.6%
[Spread Glottis]	83.9%	63.5%
Both	85.9%	78.8%

## Cardoso. Accuracy Rankings on sC Clusters

Production	sl > sn > st
Perception	st > sl > sn

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