

QUICHEAN (MAYAN) GLOTTALIZED AND NON-GLOTTALIZED STOPS:  
 A PHONETIC STUDY WITH IMPLICATIONS FOR PHONOLOGICAL UNIVERSALS

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Investigators have noted that ejectives exhibit a preference for back articulations while implosives exhibit the opposite preference. A counterexample to Greenberg's implicational hierarchies for ejectives and implosives has been offered from the Quichean languages which have a glottalized set of stops consisting phonologically of "ʔb, t', k', ʔq". This counterexample and the lack of information about the phonetic nature of glottalized stops, particularly uvulars, led to the present phonetic study of Quichean glottalized and non-glottalized stops.

5 Quichean languages were investigated in Guatemala using portable equipment to get intra-oral air pressure and audio recordings. 27 male subjects were recorded, 15 of these from rural and urban K'ekchi speaking areas. The inventory consisted of 10 tokens each of 16 real language minimal pairs containing the stop contrasts for bilabial, alveolar, velar and uvular places of articulation in word initial and medial positions.

The extent of the phonetic variation across these languages shows that the identification of stops as "glottalized" by no means indicates their phonetic nature. Bilabial implosive variants are: ɓ, a voiced, negative pressure implosive; ɓ̥, a voiced, zero pressure implosive; b, a voiced, non-glottalized variant; p<, a voiceless implosive. Alveolar implosive variants are: d̥, a voiced, negative pressure implosive; t<, a voiceless implosive. The dialectal variation for the glottalized uvular stop in K'ekchi (Carcha K'ekchi - q' in all word positions; Chamelco K'ekchi - q< in all word positions; Coban K'ekchi - q' word initially, q< intervocalically) suggests that further work is needed to determine if there is a necessary phonetic relationship between the ejective and the implosive variants. The difference between voiceless and voiced implosives in these languages suggests that the best generalization about place of articulation preferences for glottalized stops is that voiced glottalized stops have a preference for front articulations and voiceless glottalized stops have a preference for back articulations.