Tongue Shape and Aistream Contrasts in N|uu Clicks: Predictable information is phonologically active

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I present quantitative ultrasound data on the production of 4 clicks in the [u] context by 3 female speakers of the endangered South African language N|uu. Data were recorded in the field using novel head and transducer support methodology. Two clicks contrast in anterior and posterior place: alveolo-uvular for [!], and post-alveolar-upper pharyngeal for [ǂ]. Neither has a velar posterior closure, as advocated by Beach (1938) and Ladefoged (1975). [!] is characterized by a convex mid tongue and concave posterior tongue shape, involving retraction of the mid tongue root. [ǂ] is characterized by high flat mid tongue shape, and advanced and raised upper tongue root similar to the high back vowel [u] (Esling 2003). Tongue shape differences in clicks are carried over into the following [u] vowel. High back vowels accommodate co-articulation in place, while high front vowels do not, resulting in co-occurrence constraints known as the Back Vowel Constraint (Traill 1985; Miller-Ockhuizen 2003; Miller 2007). Posterior tongue shape is predictable from anterior tongue shape, but is phonologically active.

[!͡q] and [ǂq] were previously called uvular clicks, contrasting with velar clicks (Traill 1985; Ladefoged and Traill 1994; Bell and Collins 2001; Nakagawa 2006). N|uu [!͡q] and [ǂ͡q] clicks do not differ in posterior place from [!] and [ǂ]. Pairs show the same tongue shapes, and differ only in airstream. The [!͡q], and [ǂq] clicks are linguo-pulmonic contour segments. Airstream is not predictable from place as claimed by Sagey (1986).

Overall, N|uu data show that phonetically predictable information is phonologically active.

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