Ahm, *uh*, and *um*:

An acoustic study of conversational discourse markers in San Diego CA bilinguals

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We all subconsciously use discourse markers such as *uh,* or *um* when we speak. But, for Spanish/English bilinguals in a bilingual environment, does language contact impact their subconscious pronunciation of the vowel sounds of ***ahm***, ***uh***, and ***um***? If so, how similar are the vowel sounds in both languages? And, are the vowel sounds from Spanish or from English?

There has been linguistic interest in this topic, though it has been studied under many terms. Garcés Gómez (1992) calls them "discursive operators", Swerts (1998) calls them "filled pauses", Tottie (2011) calls them "sociolinguistic markers", and Blas Arroyo (1995) calls them "discourse markers" and says that these are not mere filler words. Clark and Fox Tree (2002) concur that *uh* and *um* are not mere fillers, but rather words that follow all the phonological, prosodic, syntactic, semantic, and pragmatic rules of English. Of the many related studies, Graham (2018) who studied discourse markers in four Latin American areas, and Erker and Brusi (2017) are influential to this present study. Erker and Brusi analyzed the filled pauses (FPs) of bilinguals in Boston MA to see if English impacted the pronunciation of the FPs used when speaking Spanish.

This study acoustically analyzes the informal and spontaneous speech of four bilinguals in San Diego CA to see if language contact impacts the pronunciation of the vowel sounds of ***ahm***, ***uh***, and ***um***. The participants were recruited via social media if they met the target demographic: San Diegan, ages 30-45, and a native speaker of both English and Spanish. There is a lack of linguistic study of bilinguals in San Diego, though it is the largest border crossing and port of entry in the world, the fifth most populous county in the United States, and over a third of the population is Hispanic (US Census Bureau, 2017).

The participants in San Diego were instructed to digitally record two spontaneous monologues on any topic, one in English and one in Spanish, and send them electronically. The recordings were analyzed using Praat.org (Boersema & Weenick, 2018). The vowel sounds of ***ahm, uh,*** and ***um*** were identified and the mean of the first and second formants of each isolated vowel sound were recorded and graphed. The Spanish formants were compared to Bradlow's (1995) Spanish formants, and the English formants were compared to Hagiwara's (1997) Southern Californian English formants, which are divided by sex. Formants 1 and 2 were graphed for all data points using Excel. Using the Pythagorean theorem, the distance between the participants' Spanish and English vowel sounds (Formant1, Formant2) and the reference vowel sounds was calculated. This acoustic study finds that bilinguals subconsciously default to the same vowel sound for ***ahm/uh/um*** in both languages, which is a bit lower than Bradlow's Spanish /a/ and close to Hagimara's male and female English /ɑ/. Future studies with a larger population sample will be conducted in person via long recorded conversations.

Key words: sociolinguistics, discourse markers, filled pauses, bilingualism, Spanish in the US