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Research Article

Vowel perception by native Media Lengua, Quichua, and Spanish speakers



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ABSTRACT

This study explores mid and high vowel perception in and across Ecuadorian Spanish, Quichua, and Media Lengua (a mixed language containing Quichua systemic elements and Spanish lexicon). Quichua and Media Lengua were originally considered three vowel systems comprised of /i, u, a/. However, recent production results reveal that mid vowels /e, o/ may have entered these languages through Spanish lexical borrowings. The aim of the present study is to test listener perception with minimal pairs containing different mid and high vowels to determine how listeners identify them. A two-alternative forced choice (2AFC) identification task experiment with paired stimuli, gradually modified along 10-step continua, revealed that listeners of all three languages demonstrate a relatively high degree of consistent response patterns with the exception of older Quichua listeners. The results of this study coupled with the 'intermixed' acoustic spaces in which the vowels are produced also call into question the predictions that might be made in theoretical models of L2/non-native speech perception.

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1. Introduction

In the Ecuadorian highlands, a well-defined language contact continuum exists between Standard Spanish and Unified Quichua. In the middle of this continuum, an intertwined 'mixed language' known as Media Lengua, or Chaupi-shimi (literally translated as "half-language"), was formed through various processes of lexification and code-switching (see Gómez-Rendón, 2005; Muysken, 1980, 1981, 1997; Shappeck, 2011; Stewart, 2011). Impressionistic observations and traditional phonological analyses of Media Lengua and Quichua's vowel systems have produced varied claims regarding the degree of integration of historically Spanish origin vowels through lexical borrowings (see Cole, 1982; Gómez-Rendón, 2005, 2008; Muysken, 1997; van Gijn, 2009). However, a recent phonetic analysis of Media Lengua and Quichua vowel production revealed that historically Spanish origin vowels have been integrated into Media Lengua and Quichua, yet they exist in highly overlapping acoustic spaces with native Quichua vowels

1.1. Quichua

Imbabura Quichua (ISO 639-3: qvi), a highly agglutinating language with SOV word order, is a member of the Quechuan language family, which extends from southern Colombia to northern Argentina, primarily along the Andean mountain range. Quechua was the language of the former Incan empire, yet it was only introduced into what is now modern-day Ecuador just a couple of generations before the Spanish invasion in 1532 CE. Therefore, Quechua in this region has been in constant contact with Spanish for nearly 500 years (Adelaar & Muysken, 2004, p. 167). It is documented that nearly every semantic field, "from kinship and household to religion, education and administration" is influenced by Spanish lexical borrowings (Gómez-Rendón, 2008, p. 517). Contact with Spanish has also had a large influence at the syntactic level of Quichua.²

⁽Stewart, 2014). The first section of this paper introduces Quichua (1.1), Media Lengua, and its position as a mixed language (1.2), the vowel inventories of Media Lengua's source languages (1.3), previous analyses of Quichua and Media Lengua vowels (1.4), and background information on speech perception as it pertains to Quichua and Media Lengua (1.5).

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¹ The principle processes involved in creating the lexicon of Media Lengua include: relexification (the transfer of just the phonological shell of the lexifier language on to the semantic representation of the systemic language), translexification (the transfer of two or more elements from the lexifier language into the substrate language, e.g., the phonological shell and syntactic features) (Muysken, 1981), and adlexification (the lexical item from both the lexifier and substrate language co-exist) (Shappeck, 2011).

² In Ecuador, Quechua is known as Quichua (or Kichwa).

1.2. Media Lengua

Media Lengua (ISO 639-3: mue) is an endangered mixed language spoken by approximately 2000 people in the Ecuadorian province of Imbabura. Media Lengua was originally documented in the 1970's by Pieter Muysken (see 1981; 1997) in the province of Cotopaxi, but recent surveys by Shappeck (2011) and Stewart (2011) suggest that it has since been replaced by Spanish. In Imbabura, Media Lengua is spoken in the community of Piial, where this study was conducted, and in four interlinked communities near the town of San Pablo (Angla, Casco Valenzuela, Ugsha, and El Topo). Based on surveys and speaker testimonies, Media Lengua spread to the San Pablo communities from Pijal through inter-community marriages (Stewart, 2011) and merchant contact (Gómez-Rendón, 2007; Jarrín Paredes, 2014) in the 1960's and as recently as 2000 in Ugsha (Müller, 2011). In Pijal, Media Lengua is moribund and in the San Pablo communities it is threatened as it slowly loses ground to Spanish. While researchers have yet to uncover any written documentation about the development of Media Lengua in the region, statements from elder speakers regarding the language of their parents and grandparents suggest that Media Lengua developed or was introduced to Pijal by the beginning of the 20th century and was used as an L1 during the 1910s (Stewart, 2011).

Mixed languages, as described in Meakins (2013) and Meakins and Stewart (2019), as distinct from other forms of language contact such as jargons, pidgins, creoles, or lingua francas. They often appear, not out of communicative necessity, but rather as a way of marking a new ethnic identity. Therefore, the originators of mixed languages are often competent bilinguals of the source languages. This aspect is often reflected in a mixed language's structure in that there is no reduced vocabulary nor simplification in the morphosyntactic structure. Moreover, mixed languages are often only used internally among members of a speech community (Bakker, 1997) while the source languages are used externally. Media Lengua is the result of mixed linguistic elements from two typologically unrelated languages, Spanish and Quichua. Nearly its entire lexical base (\sim 90%) is of Spanish origin while its morphosyntax is essentially Quichua (see Deibel, 2017 accepted, for experimental evidence of Media Lengua's lexical-functional split). Example 1 illustrates a sentence in Media Lengua, with the Spanish origin elements displayed in italics.

(1) Yotaka kirinimi nievekunaka cayichun.
jo-ta-ka kiri-ni-mi nieβe-kuna-ka kaji-tʃun.
1-ACC-TOP like-1s-VAL snow-PL-TOP fall-DS.SUBJ
Me gusta que caiga la nieve. (Spanish)
Ñukaka munanimi rasukunaka urmachun. (Quichua)
'I like it when the snow falls.'

1.3. Vowel inventories of Media Lengua's source languages

This section introduces the vowel inventories of Media Lengua's source languages. Section 1.3.1 discusses the Quichua vowel system and Section 1.3.2 discusses the Spanish system. Section 1.3.3 compares the two source languages.

1.3.1. Quichua

All Quechuan languages make productive use of three vowels consisting of /i/, /u/, and /a/, which are preserved from Proto-Quechua (Adelaar & Muysken, 2004, p. 196). Additionally, southern varieties have an allophonic rule that lowers the high vowels to [e] and [o] when preceded by a uvular consonant (/q/) (e.g., Cuzco [kuzqo]). However, in the northern Ecuadorian varieties, /q/ merged with /k/ nullifying the allophonic lowering rule (Adelaar & Muysken, 2004, p. 196). Because of this merger, Imbabura Quichua has no evidence of allophonic mid vowels.

1.3.2. Spanish

Like nearly every dialect of Spanish, Ecuadorian Spanish makes productive use of five vowels consisting of /i/, /u/, /e/, /o/, and /a/. However, Spanish spoken by Quichua-dominant bilinguals show mid vowel raising (Guion, 2003) and the use of a broad acoustic space with no bimodal clustering (i.e., categorical separation) for mid and high vowels (Lipski, 2015).

1.3.3. Comparison of Quichua and Spanish

On the surface, both source languages appear to have relatively small vowel inventories. Spanish with its five-vowel inventory contains two additional mid vowels not found in Quichua's three corner vowel system. From a phonological standpoint, Media Lengua speakers should have either adopted the Spanish mid vowels into the Quichua system or simply maintained Quichua's three vowel system by assimilating Spanish origin mid vowels. However, claims presented in Section 1.4 suggest that these scenarios may not be adequate to describe what is happening at the phonetic level.

1.4. Analyses of Media Lengua and Quichua vowels

This section introduces claims put forth by numerous researchers who have described Media Lengua and Quichua's vowel systems. Section 1.4.1 details impressionistic claims and 1.4.2 details acoustic studies of Media Lengua and Quichua vowel inventories.

1.4.1. Impressionistic claims

Two impressionistic observations of Media Lengua show mixed results in terms of the realisation of historically Spanish mid vowels. In the seminal paper on Media Lengua by Pieter Muysken (1997), he stated that, "...mid vowels /e/ and /o/ are collapsed with the high vowels /i/ and /u/, respectively..." (p. 383). This description suggests that Media Lengua vowels are essentially Quichua-like. However, Gómez-Rendón (2005) stated that, "...vowels [e] and [o], appear in Media Lengua almost exclusively in relexified roots and interjections...[yet there are] cases [where] one vowel is raised (vendi-, ofreci-)" (p. 48).³

For Quichua, impressionistic observations are more consistent. Cole (1982) stated that, "...the mid vowels /e/ and /o/ are borrowed from Spanish. [However], the mid vowels are found only in unassimilated Spanish words. Monolingual speakers generally pronounce borrowed mid vowels as high vowels"

³ Translated by the author.

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