

## A GRAPHO-PHONOLOGICAL HISTORY OF THE ‘SIXTH VOWEL’ IN MAPUDUNGUN: EPENTHESIS, STRESS AND RULE INVERSION

The vocalic system of Mapudungun (ARN, isolate, Chile/Argentina) consists of six phonemes: the (near) cardinal vowels /i, e, a, o, u/ and a ‘sixth’ vowel, alternatively characterised as [i̠], [u̠] or [ɔ̠]. Contemporary descriptive work on the language has been particularly interested in the phonetic realisation of this latter vowel (for convenience: <ü>) as well as its contextual and diatopic variation (Alvar et al. 1997, Sadowsky et al. 2013, Soto-Barba et al. 2016, Mena et al. 2019, Henríquez and Fuentes 2021, Llanquiman and Hasler 2024). Attempts to correlate mid ([ɔ̠]) v. high ([i̠, u̠]) realisations with particular phonotactic or prosodic contexts has proved difficult, as have proposals to establish dialectal patterns. However, a key omission in most of these sources, despite being described throughout the historical and contemporary record, is the role and distribution of a ‘zero’ allophone of <ü>, as illustrated in Table 1.

Orthography	Sadowsky et al. 2019	Lenz 1897	Havestadt 1777	Valdivia 1606	Gloss
<fūta>	[f̄.ʔ̄]/[f̄.ʔ̄]	fta/f̄ta	vùta	vùta/vuca	‘big’
<tūfa>	[t̄f̄.ʔ̄]/[t̄f̄.ʔ̄]	tfa/t̄fa	tva	tva/va	‘this’
<müna>	[m̄.ʔ̄.n̄]/[m̄.ʔ̄.n̄]	mna/m̄na	mna/m̄na/mùna	m̄na/muñna	‘very’
<mülen>	—	m̄len/mülen	m̄len	m̄len	‘be’

Table 1: ‘zero’ attestations of <ü> across the historical record of Mapudungun

Although present-day accounts view the zero variant as resulting from interconsonantal deletion of <ü> in *allegro* speech, it is our contention that at least some of these alternations can be described as the reflexes of a productive system of epenthesis in older stages of the language. We will argue, furthermore, that these epenthetic vowels were eventually lexicalised or morphologised, yet remained variable in unstressed position, as a result of a process of rule inversion: an erstwhile <ü>-epenthesis rule has become a <ü>-elision rule. Relying on the 400-year textual history of the language, represented in the *Corpus of Historical Mapudungun* (Molineaux and Karaiskos 2021), we will present orthographic, morphological, prosodic, and loanword-adaptation evidence for this reversal.

### Phase 1: Productive epenthesis and underlying <ü>

The earliest records for Mapudungun (Valdivia 1606, 1621) present a system with abundant consonant clusters both within morphemes and across their boundaries, a pattern that the author of these works, the Jesuit Luís de Valdivia, explicitly identifies as default (cf. 1606: 8v). However, his spelling of individual morphemes (1), and complex verbs (2) evidence alternations indicative of incipient or sporadic inter-consonantal epenthesis (<ù> and <i>, equivalent to contemporary <ü>). In parallel, furthermore, we see cases of invariant <ù> both intervocalically (<cùdau> ‘work’) and at word edges (<ùj> ‘name’; <antù> ‘sun/day’) likely representing an underlying form of the vowel (e.g. /i̠/).

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|---|---|---|
| <p>(1) a. &lt;p̄llu&gt; ~ &lt;p̄ùllu&gt;<br/>‘soul’</p> <p>b. &lt;m̄amll&gt; ~ &lt;m̄amùll&gt;<br/>‘wood’</p> | <p>(2) a. &lt;kim-i-n&gt; ~ &lt;kim-n&gt;<br/>know-(EPENTH)-ISG:IND</p> <p>c. &lt;con-ù-m-bu-y&gt;<br/>enter-(EPENTH)-CAUS-FRUST-IND3</p> | <p>b. &lt;elu-n&gt;<br/>give-1SG:IND</p> <p>d. &lt;pra-m-bu-iñ&gt;<br/>mount-CAUS-FRUST-IND2P</p> |
|---|---|---|

Further evidence for early epenthesis in Mapudungun comes from the first instances of nativised Spanish loanwords with clusters. Indeed, in the 18th-century materials we find spellings like <p̄ùlata> ‘money/silver’ (<Spanish *plata*>) or <patiru> ‘priest/father’ (<Spanish *padre* cf. Febrés 1765).

## Phase 2: Stressing of epenthetic vowels

Given the double status of <ü> in the early materials for Mapudungun – as an underlying and an epenthetic element –, we argue that, on the surface, there was some inconsistency in the positioning of stress. Following Molineaux (2018), early Mapudungun would have had strict penultimate stress, yet under epenthesis, this would have resulted in surface forms like final-stressed [p(ɨ)'ʌɨ] ‘soul’ side by side with stress-initial [ˈmam(ɨ)ʌ] ‘wood’. This surface inconsistency would have eventually been resolved by making epenthetic vowels stressable, thus ordering stress after epenthesis in the derivation. The result is what we find in present-day Mapudungun: an invariant stress on erstwhile epenthetic vowels which are in stress position, as shown in (3).<sup>1</sup>

## Phase 3: Lexicalisation/morphologisation and <ü>-elision

The final stage in our analysis is the eventual re-interpretation of all <ü> vowels as underlying. This is the result of epenthetic vowels surfacing more consistently under stress, while the unstressed positions alternate with zero more frequently. We contend that this pattern emerges when learners exposed to this new alternation system come to take stress as the key factor for the persistence of the <ü> vowel, leaving aside the original pattern with both epenthetic and underlying vowels. We claim that the reanalysis of the alternating vowels not as epenthesis, but as deletion, is a form rule inversion (Vennemann 1972). This historical pattern, furthermore, accounts for the clear restriction of the elision rule to intervocalic positions and to the ‘sixth vowel’ and no other. Furthermore, by virtue of being in a stressed position, a set of epenthetic vowels which emerged as a result of morphological concatenation (see 2a-c, above), would eventually be interpreted as underlyingly part of the relevant morphemes (i.e. [-ɨn] ‘INDIS’ and [-im] ‘cause’ in 3a-b), becoming subject to deletion in post-vocalic position, as in (4c-d).

(3) a.	[ˈpi.ʌɨ]	(4) a.	[ki.ˈm-ɨn]	c.	[e.ˈlu-n]
	‘soul’		know-1SG:IND		give-1SG:IND
b.	[ma.ˈmiʌ]	b.	[kon.ɨm-fu-j]	d.	[pɨa-m-fu-ˈjiɨ]
	‘wood’		enter-SUBJ-EPENTH-FRUST-IND3		mount-CAUS-FRUST-IND2P

**Keywords:** Mapudungun; epenthesis, grapho-phonological study

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<sup>1</sup>Note that there is a change in the stress system, such that stress assignment becomes weight sensitive, falling on a final closed syllable or on a penultimate syllable if the final is open (Molineaux 2018).

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