A Synchronic and Historical Look at Akeanon Phonology

Philip RENTILLO
De La Salle University, Philippines
philip.rentillo@dlsu.edu.ph

Ruchie Mark D. POTOTANON
University of the Philippines Visayas, Philippines
rmpototanon@gmail.com

Abstract

Akeanon features a phoneme unique relative to many Philippine-type languages, which is a reflex of the proto-Bisayan **l* and **-d-*. This was initially described as a voiced velar fricative [ɣ], and later repositioned as both a consonant of an onset and a semivowel of a coda. Half a century later it was reaffirmed as mainly a semivowel. Based on these descriptions of Akeanon, more questions arise as per the true nature of the phoneme in focus. This paper hence provides both a review and reevaluation of Akeanon phonology based on synchronic distribution, dialectology, historical accounts, and acoustic analysis. Results point to the phoneme as a velar approximant [ɰ]. Further recommendations on both descriptive and applied contexts are provided.

Keywords: Akeanon; language documentation; phonology; Philippine languages; Bisayan

Povzetek

Aklanonski jezik se ponaša s fonemom, ki je edinstveno povezan s filipinskimi jeziki preko vizajskih *l in *-d-. Ta je bil sprva opisan kot zveneči mehkonebni pripornik [ɣ], pozneje pa je bil definiran njegov položaj v soglasniškem onsetu oziroma polglasniški kodi zloga. Pol stoletja pozneje so ga ponovno potrdili predvsem kot slednjega. Na podlagi teh opisov aklanonščine ostajajo neraziskana vprašanja glede resnične narave omenjenega fonema. Ta članek ponuja pregled in ponovno oceno aklanonske fonologije, ki temelji na sinhroni distribuciji, dialektologiji, zgodovinskih poročilih in akustični analizi. Na osnovi teh rezultatov opišemo omenjeni fonem kot mehkonebni drsnik [ɰ]. Na voljo so dodatna priporočila tako za opisni kot uporabni kontekst.

Ključne besede: aklanonščina; jezikovna dokumentacija; fonologija; filipinski jeziki; vizajski jeziki

Acta Linguistica Asiatica, 12(1), 2022.
ISSN: 2232-3317, http://revije.ff.uni-lj.si/ala/
DOI: 10.4312/ala.12.1.91–127

1 Introduction

Mention of Akeanon in the historical literature began quite recently relative to its neighboring varieties (and languages), which have been reported or analyzed nearly two hundred years earlier. The first known published reference of the language dates back only to the mid-19th century (de Méntrida, 1841). What makes this case peculiar is that historians and philologists at that time should have long noticed the language, given a presumably sizeable speaker base alongside distinguishable features. One notable innovation in Akeanon—a correspondence with /r-l/ of the Bisayan (henceforth, BIS) group—is what was initially described as a voiced velar fricative [ɣ] (Scheerer, 1920). This was later argued as both a consonant and a semivowel (de la Cruz & Zorc 1968), and then half a century later was reaffirmed as a semivowel (Zorc, 1995, 2005) or more specifically a velar approximant [ɰ] (Zorc, personal communication, September 27, 2019). This innovation has long been represented orthographically with ⟨Ee⟩. Based on current descriptions of Akeanon alongside those of related and adjacent languages, more questions arise as to the true nature of the mentioned phonological feature. This paper attempts to revisit these facets of the Akeanon phonological system through evidence all accumulated from synchronic, dialectological, historical, and acoustic evidence.

1.1 The Akeanon language

1.1.1 Status

Akeanon (ISO 639-3: akl), also called *Aklanon*, *Inakeanon*, *Binisaya*, or *Bisaya (nga Akean)*, is a West Bisayan (henceforth, WBIS) language of the Central Philippine group (Zorc, 1977; Eberhard et al., 2022). It is close to Kinaray-a, the most widely spoken WBIS, and distantly related to Hiligaynon, Waray, and Cebuano. Its speakers are concentrated within the northwestern tip of the island of Panay in the Philippines, particularly within the province of Aklan. Since the last 2000 household population census by the National Statistics Authority[1] (2002) there could be more than 500,000 speakers of the language today. It should be noted as well that this estimate was only based on ethnicity-based self-reports, and not on intelligibility or on language proficiency.

Akeanon according to the Expanded Graded Intergenerational Disruption Scale (EGIDS) is considered an educational language or Level 4, well within the range of languages classified as INSTITUTIONAL, or those used and sustained by institutions from and beyond the native-speaking community. As such, Akeanon is predominantly spoken in radio broadcasts[2] across the province of Aklan, and apart from use on known

[1] Officially named the National Statistics Office when the 2002 census was released.

[2] DYCF 88.5 FM Radyo Todo Aklan, DYYK 89.3 FM Brigada News FM Kalibo, DYRU 92.9 FM Barangay RU Super Radyo Kalibo, DYDJ 101.7 FM Energy FM Kalibo

social media platforms such as Facebook[3] and Twitter, it is available in online news content particularly on the Philippine Information Agency[4]. From time to time, it is used in public signages of both commercial establishments and the local government. Its written presence is also seen to grow with the emergence of academic texts due to the recent inclusion of Akeanon into the Mother Tongue-based-Multilingual Education (MTB-MLE) scheme as a medium of instruction and as a mother tongue subject for primary schools in Aklan as mandated by the Department of Education.

1.1.2 Phonology

Akeanon has a phonological system typical of a Central Philippine language. Its canonical vowel inventory is limited to three, [a~ɐ], [u~o], [i~ɪ], a common 3-vowel inventory among Bis languages, while [ɔ] and [ɛ] are included to accommodate common nouns, and loanwords historically from Spanish, and more recently from Tagalog and English. It features seventeen (17) native consonants, with an additional seven (7) due to both loanwords, and phonological processes. Tables 1 and 2 below illustrate the current phonological system of Akeanon based on the findings of de la Cruz and Zorc (1968) and Zorc (1995).

Table 1: Akeanon vowel inventory

	Front	Central	Back
Close	i ~ ɪ		u ~ o
Open-Mid	(ɛ)		(ɔ)
Open	a ~ ɐ		

We consider Table 2 as the most detailed inventory on the language as to date and thus serves as the benchmark of our current analysis since it combines descriptions from de la Cruz and Zorc (1968) and Zorc (1995).

[3] As of January 2022, existing groups include *Akeanon Language - Panghinambaeang Akeanon*, *Akeanon Lines*, and *Ro Akeanon.*

[4] The PIA website as of January 2022 does not organize articles by language but only by region.

Table 2: Akeanon consonant inventory

	Bilabial	Alveolar	Post-Alveolar	Palatal	Velar	Labiovelar	Glottal
Stop	p b	t d			k g		ʔ
Nasal	m	n			ŋ		
Affricate		(ts) (dz)	(tʃ) (dʒ)				
Fricative	(f) (v)	s (z)	(ʃ)		ɣ?		h
Approximant				j	ɰ?	w	
Tap		ɾ					
Lateral		l					

A distinctive feature of Akeanon roughly described as velarized or guttural is not present in any other languages within its geographic locus. The reflex is described varyingly throughout Akeanon scholarship as a VELAR APPROXIMANT [ɰ][5] or as a VOICED VELAR FRICATIVE [ɣ], which will thus be tentatively labelled as the DISTINCT AKEANON REFLEX (henceforth, DAR). What is very certain, though, is that as per Zorc (1977) DAR is a reflection[6] of the proto-BIS **l* (e.g. **l**a**ŋaw* > ***R**aŋaw* 'housefly,' **ba**l**u* > *ba**R**u* 'widow,' **katu**l*** > *katu**R*** 'itch') and intervocalic **-d-* (e.g. **wa**d**aʔ* > *wa**R**aʔ* 'none, lose').

1.2 The current study

Although Akeanon phonology has been described by de la Cruz and Zorc (1968) in detail, questions remain as to the true nature of its distinct "guttural" phoneme (i.e. DAR), orthographically ⟨Ee⟩. The earliest evidence of the use of the letter for the phoneme could be traced back as early as the late 20th century. It should likewise be noted that the same grapheme is used for proper nouns (e.g. *Teresa*, *Balete*), and for loanwords (e.g. *eroplano*, *puwede*) intended to be pronounced with an open-mid front unrounded vowel [ɛ]. While this already suggests a host of orthographic issues, perhaps a more pressing concern is the lingering notion among common Akeanon folk, in schools, and even among literary intellectuals, that the distinct phoneme is a vowel. This writing convention has been observed as early as the turn of the 20th century by Scheerer (1920), whereby its origin as an orthographic convention remains unclear up to this day. In terms of formal linguistic analysis, the most recent mention of DAR is by Zorc, who

[5] Martínez-Celdrán (2004) raised the issue on the use of this symbol in Spanish, Catalan, and Galician phonetic contexts whereby [ɣ̟] is said to be more appropriate. Likewise, the alternative symbol is also preferred in the transcription tradition of other European languages with a similar phoneme (e.g. Danish, Icelandic, Swedish).

[6] /l/ and prevocalic /d/ are also phonemic in Akeanon (e.g. *bu**l**ag* 'blind' vs *buRag* '[to] separate,' *madajaw* 'elegant,' *pu**l**gada* 'inch') while pre- and postvocalic **d-*, **-d* coalesced into /d/ (e.g. ***d**aRan* 'road,' *buki**d*** 'mountain').

in footnote argued it not to be a voiced velar fricative—the recognized sound class membership for the longest time—but instead an unrounded back semivowel. Zorc (2005, 128) claims such because "…it [the consonant in question] lacks friction" (p. 128).

The points above provide an impetus for this study to take a three-pronged approach to surrounding the DISTINCT AKEANON REFLEX (DAR). Specifically, we problematize on whether DAR is a velar approximant [ɰ] or a voiced velar fricative [ɣ] through the following.

1. A review of recent and past discussions on Akeanon phonology;
2. Historical records relating to the Akeanon language; and
3. Articulatory and acoustic descriptions of DAR.

2 A review of approaches to Akeanon phonology

2.1 Descriptions

The first known published linguistic inquiry on Akeanon dates to Otto Scheerer's (1920) paper entitled *Über einen bemerkenswerten L-Stellvertreter im Dialekt von Aklan auf der insel Panay (Filipinen)*, lit. 'On the remarkable L-variant in the dialect of Aklan in the island of Panay (Philippines).' Scheerer, then working for the American colonial National Museum of the Philippines, was interested in what he calls "einen leicht stimmhaften Gaumen-Reibelaut" (p. 249), lit. 'a slightly voiced velar (palatal) fricative.' He reports that this sound is attested among speakers of a variety of Bisaya found within and around the Aklan River valley, once only a recognized cultural area within the province[7] of Capiz.

Transcribing the phoneme as ê, he compares its distribution patterns to BIS cognates through the RLD (and RGH) laws described by Conant (1911, 1912) among "Indonesian"-type languages. This analysis shows that DAR is the Akeanon non-velar or /l/ reflex found in other BIS varieties such as Hiligaynon. Scheerer further enumerates lexical items with distinct /l/-reflexes in Akeanon in the same phonological environments showing that DAR is phonemic in the language. He also presents morphophonological evidence such as retention of /l/ when a velarized root is inflected (e.g. *eopad* 'fly' > *linupad* 'flown away'). This phonological pattern further substantiates DAR's consonantal yet non-velar origins. From here on the phonological description of DAR as a velar (fricative) persisted in most of Akeanon linguistic scholarship.

Almost fifty years would pass before an extensive description of Akeanon phonology would be published in English. The work in question is part of a two-book series with Zorc as a lead scholar for the United States Peace Corps. The first book is a

[7] Aklan was once considered a mere cultural area within the Capiz Province before it seceded as a separate province on April 25, 1956, through Republic Act No. 1414.

grammatical description, which includes a phonological sketch (de la Cruz & Zorc, 1968). The second book a year later is a dictionary (Salas Reyes, Zorc, & Prado, 1969). In both books, DAR is represented with a minuscule Latin g with a diagonal slash ⟨ǥ⟩ and described as a voiced velar fricative functioning as a consonant and a word-final semivowel. Less than a decade later Zorc (1977) mentions DAR once more and describes it as a "voiced velar spirant (with only some friction)" (p. xvii) transcribed as /ɬ/ in his landmark work on the subgrouping of BIS and reconstruction of proto-BIS. This paper would be followed by Paz (1981), who reconstructed proto-Philippine phonemes and morphemes. Included in her work was a look into velarized features sparsely found throughout genetically and geographically scattered Philippine languages. This was where DAR, described as a "voiced velar fricative" (ibid, p. 23) and represented similarly in Zorc's two-volume series, was among those used as basis for a proposed proto-velar as an additional reflex of her hypothesized Philippine proto *ɬ.

Zorc (2005) later on passingly mentions the decision not to consider the voiced velar fricative entirely as a consonant, but as a semivowel[8]. In his footnote, he says that contrary to his initial interpretation of a voiced velar fricative it is apparently an "unrounded back semivowel" (ibid, p. 128) due to its lack of turbulence. He does not mention any work expounding on such lack of "friction," or acoustic data for substantiation. Later through another correspondence, he reaffirms his stance (Zorc, April 5, 2021, personal communication).

2.2 Historical accounts

While Scheerer's 1920 article is the first known published linguistic inquiry on DAR, there are older written accounts on Akeanon with scant mentions of the reflex in focus. One earlier known text is by Alonso de Méntrida dating back to 1841, where he briefly mentioned such "peculiar feature," which may be surmised to refer to DAR in comparison to other BIS varieties known during that time. There is no older document or artifact within this period that provides a detailed description of DAR let alone a mention of a distinct variety of BIS spoken within what is today the province of Aklan.

Akeanon folk history points to Borneo as the progeny of the Bisayan people, hence including Akeanons. It was believed that their ethnolinguistic ancestry traces back to two datus who were said to have had speech defects and were among the ten Bornean royalties who sailed with their consorts and servants northwards to Panay. This is recounted in various texts from the late 19th century to the early 20th century. The most

[8] He transcribed this as a semivowel in his 1995 chapter with the lateral fricative /ɬ/.

notable is a Hiligaynon[9] narration by Monteclaro in his historical[10] book widely referred as Maragtas[11]:

> *Ang Pulong nga Ila Ginagamit*
>
> *Ang ila pulong amo gid man ang binisayâ nga nasaktan sang hiligaynon kag hiniraya, kay ang mga taga-Bornay nga nag-alabut diri sini nga pulô, gumikan man sa nagasarìsarì nga pungsod sang Bornay, ugaling sang olihe nagpininigpinig ang nagahambal sang hiligaynon kag hiniraya kay ang nagapuyô sa Aklan nga mga pihit kay mga kaliwat ni Bangkaya kag ni Balinganga nga pihit man, dilì matigdà sa pulong nga hiniraya nga sa m[a]sunsun ginagamit ang R kag ang L nga dilì mamitlang sing ma·ayo sang mga pihit; ganì man gumikan sa aklananon ang pulong nga lunsay hiligaynon nga sang olihe naglapnag sa Irong·irong tungud nga maramù nga tagadiri ang nakapangasawa sa Aklan, subong nga madamò man ang taga Aklan nga nakapangasawa sa taga Irong·[i]rong* (Monteclaro, 1957, p. 42).
>
> The Language They Use
>
> Their [Akeanon people's] language is the same as the Binisaya such as those from where the river flows (cf. modern Hiligaynon) and those from the hinterlands (cf. modern Kinaray-a). When the people of Borneo, hailing from various Bornean nations, arrived at the island (of Panay) those who spoke Hiligaynon and Kinaray-a later on grouped together. Meanwhile, those who settled in Aklan had speech difficulties since they were descendants of (Datu) Bangkaya and (Datu) Balinganga, who had speech defects themselves. They were not fluent in Kinaray-a, which usually uses R and L, which in turn cannot be pronounced correctly by people with such defects. From the people of Aklan came words that were essentially Hiligaynon that later spread to Iloilo since many of those who migrated here intermarried with those from Aklan, and the same way many Akeanon people intermarried with those from Iloilo.

An earlier narrative comes from Spanish friar Tomas de Santaren (1856 in Pérez, 1902, p. 392) explaining how ancient Akeanon speakers appropriated the supposed speech defect of their figure head as a linguistic feature:

> *Como Bang-caya era zazoso en el pronunciar, así salió el hijo, y hasta en la actualidad lo sen todos los naturales de aquel partido, (no porque en realidad lo*

[9] In 20th century non-standard orthography.

[10] Although Monteclaro intended his work to be considered valid history, linguistic and archeological (counter-) evidence up to this day relegate the narrative on the Ten Bornean Datus as pure myth.

[11] Full title is *Maragtas: Kon Sayuron (historia) sg pulô nga Panay kag sang mga pumuloyo, tubtub sang pag abut sang mga taga Borneo nga amô ang guin halinan sg mga bisayâ, kag kutob sang pag abut sg mga kastilâ.*

> *sean, pero si, por el dejo ó estribillo quen han tomado y siguen de sus antepasados.)*
>
> Because Bangkaya stutters in speech and so his son, it has become common to everyone native to that place [Aklan] (not because they all stutter as well, which indeed cannot be the case, but because they took it from their ancestors).

de Santaren (1856 in Pérez, 1902, p. 396) further explains the linguistic origins and diffusion of BIS in accordance with the myth of the ten datus from Borneo. His text could be considered as the earliest mention of a certain Akeanon lect distinct from other BIS varieties:

> *De este reparto que hizo el Dato Somacuel, entre loes restantes Datos, procedieron todas las poblaciones, así como de estas poblaciones, y ancianos proceden los que hoy existen, y de aquí la variación ó differencia en algun tanto del idioma Bisaya, y la variación do los nombres como: Aniinjanon, Ilanodnon, Iarajaynon ó Buquidnon, Aclanon, Subuanon, Buluanon, Cagayanon, Coyun-òn etc, etc.*
>
> The divisions created by Datu Sumakwel among the remaining datus resulted in these settlements, which are both ancient and continue to exist until today. Here they have variations and differences in their respective Bisayan language, which are named as [12] Aminjanon, Ilanodnon, Irajaynon or Buquidnon, Aclanon, Subuanon, Buluanon, Cagayanon, Coyun-on and many others.

We then raise two main issues as regards the relatively late report of such feature, which has nonetheless given rise to the subsequent recognition of Akeanon as a distinct BIS variety. First, DAR is linguistically unique based on genetic and areal considerations within and beyond the Bisayan linguistic ecology. As of Paz' (1981) reconstruction of a proto-Philippine[13] phonology, there have only been four geographically and genetically incongruous Philippine-type languages to feature a distinct reflex phonetically similar to that of Akeanon: Itbayat, Kalinga, Virac Bikol, and Bahi Barubu Manobo. Anderson (1958 in McFarland, 1975) also cites Buhinon to feature a voiced velar fricative. Likewise, one can assume that there could have been a sizeable proportion of speakers from and around the Aklan River valley out of approximately 140,000 people living in the province of Capiz during or before 1916, the year when Beyer's (1917 in Scheerer, 1920) census of the Philippine colony was conducted before the split of Aklan in 1956 into a separate province. It would be impossible not to encounter a speaker having this phonemic repertoire even if it could have been considered as an idiolect of low prestige relative to nearby statistically dominant varieties such as Kinaray-a and the much more

[12] Bisayan varieties spoken in present-day coastal Capiz, Jalaur (Halawod) River basin, Panay uplands, Aklan, Cebu, Butuan/Bohol (?), Cagayan de Oro River, and the Cuyo Archipelago, respectively, which may not accurately correspond to documented languages in these respective areas.

[13] Issues on a unified Philippine group under Malayo-Polynesian (cf. Blust, 2005, 2019; Reid, 1982, 2018) are beyond the scope of this paper, and thus merely echoe the subgrouping claimed by Paz.

politically and economically dominant Hiligaynon. Linguistically, de la Cruz and Zorc (1968) who considered[14] DAR as a voiced velar fricative, argue that words in what could have been proto-BIS **l* and **-d-* have been reflexed to /ɣ/ in Akeanon. They deduce that "this change is also a phenomenon which has occurred more recently" (p. 15).

2.3 Distribution

We now discuss both distribution patterns of DAR by taking advantage of initial data from Scheerer (1920), and lexical entries from Salas et al.'s (1969) Akeanon dictionary. Within regular patterns, the phoneme either as onset or coda forms a syllable with either of the two canonical vowels, the open front unrounded [a], the close back unrounded [u] for root words. Only in certain morphological conditions does it emerge with the close front unrounded [i], but specifically within an onset + nucleus patter (i.e. /Ri/). These syllables vary in position: Initial, medial, and ultima. These are compared to cognates with what we call the COMMON BISAYAN REFLEX (CBR). Sound patterns within this section are represented in broad vocal transcription (i.e. /a, u/) for consistency and clarity, while Akeanon cognates featuring DAR are spelled with ⟨Ee⟩.

Table 3: Regular CBR versus DAR correspondences

	Onset + /a/	/a/ + Coda	Onset + /lu/	/u/ + Coda	Onset + /i/
CBR	/la/	/al/	/lu/	/ul/	/li/
DAR	/Ra/	/aR/	/Ru/	/uR/	/Ri/

Note. The *R* in all tables do not represent a proto-R phoneme from any reconstruction, but rather for brevity to represent "reflex" in the "DAR" abbreviation, which represents the modern Akeanon reflex.

2.3.1 /a/ nucleus

This first part provides examples of correspondences between DAR (as either an onset or coda) and cognates with CBRs containing /a/ as nucleus. Syllable patterns with onset DAR and /a/ nucleus occur in lexical items across initial, medial, and ultima positions as provided in Tables 4 and 5, respectively.

[14] Zorc's stand has changed since then into a voiced velar approximant.

Table 4: Onset DAR + /a/ nucleus

Position	CBR cognate	Akeanon cognate	Gloss
Initial	*lawud*	***Ra**wud*	ocean, sea
	landuŋ [CEB]	***Ran**duŋ*	shadow, shade
	lapuk [CEB; WAR]	***Ra**puk*	mud
	laʔín	***Ra**ʔín*	other/s, different
Medial	*kalaju*	*ka**Ra**ju*	fire
	dalagan [HIL; CEB]	*da**Ra**gan*	(to) run
	balaŋaw	*ba**Ra**ŋaw*	rainbow
	hulas	*hu**Ra**guk*	(to) sweat
Ultima	*ŋalan*	*ŋa**Ran***	name
	wala	*wa**Ra***	left (deixis)
	pula	*pu**Ra***	red
	bulak	*bu**Rak***	flower

Note. CEB – Cebuano, HIL– Hiligaynon, WAR – Waray, KRJ– Kinaray-a

Table 5: /a/ nucleus + DAR coda

Position	CBR cognate	Akeanon cognate	Gloss
Initial	*halʔu* [HIL; KRJ]	***haR**ʔu*	mortar
	galʔum	***gaR**ʔum*	overcast, nimbus cloud
	balʔag	***baR**ʔag*	file (tool)
Medial	*kasalʔanan*	*ka**saR**ʔanan*	sin, culpability
Ultima	*hambal* [HIL]	*ham**baR***	(to) speak, tell, speech

2.3.2 /u/ nucleus

This second part provides examples of correspondences between DAR (as either onset or coda) and cognates with CBRs containing /u/ as nucleus. Syllable patterns with /u/ and an onset DAR occur in lexical items across initial, medial, and ultima positions.

Table 6: Onset DAR + /u/ nucleus

Position	CBR cognate	Akeanon cognate	Gloss
Initial	*lubung*	***Ru**buŋ*	(to) sink
	luŋib	***Ru**ŋib*	cave, cavern
	lukus [HIL; KRJ]	***Ru**kus*	squid
	luhaʔ	***Ru**haʔ*	tear (eyes)

Position	CBR cognate	Akeanon cognate	Gloss
Medial	*duluŋgan*	*du**Ruŋ**gan*	ear
	hulubatun	*hu**Ru**batun*	proverb, aphorism
	ʔulunlan	*ʔu**Ru**nlan*	pillow
	pumuluju?	*pumu**Ru**ju?*	citizen
Ultima	*buluŋ*	*bu**Ruŋ***	medicine
	talum	*ta**Rum***	blade, sharp object
	ʔulu	*ʔu**Ru***	head
	(na)pulu?	*(na)pu**Ru?***	ten

Table 7 below shows that similar to /a/, syllables with /u/ + DAR coda only occur within ultima positions.

Table 7: /u/ nucleus + DAR coda

CBR cognate	Akeanon cognate	Gloss
datʔul	*dat**ʔuR***	(to) put on a surface
Habul	*ha**buR***	cloth, blanket, (to) weave
ʔumul [CEB; WAR]	*ʔu**muR***	(to) form, shape
Buŋul	*bu**ŋuR***	deaf

2.4 Other patterns

2.4.1 Morphophonotactics

Inflected roots with DAR reveal their proto-BIS correspondences and are seemingly regular in occurrence as shown in Table 8 below. Zorc (1995) notes how /ɣ/[15] typically changes based on three phonological conditions (see Tables 8 and 9).

Table 8: DAR morphophonemic conditions

Type	Change	Condition
1	/R/ > /l/	If DAR is in a syllable with an apical consonant (i.e. /t, d, n, s/) and undergoes hyperthesis
2	/R/ > /l/	If DAR is followed by a close front vowel /i/ notably via infixing (e.g. *-in-*)
3	/R/ > /d+ʔ/	If onset DAR undergoes hyperthesis with a coda glottal stop /ʔ/ or Ø coda

[15] ɣ is the symbol Zorc used in that particular paper.

Conditions 1 and 2 reveal DAR as a reflex of the proto-BIS **l*. Condition 3 involving an epenthesis permits DAR to revert into proto-BIS **d*.

Table 9: DAR morphophonemic examples

Type	Root	Root gloss	Inflected	Inflected gloss
1	*pu**tuR***	(to) cut	*put**l**a*	cut (imp.)
	*su**Rud***	(to) enter	*sud**l**an*	to be entered
2	***R**agaʔ*	(to) boil	***li**nagaʔ*	boiled
	***R**ubuŋ*	(to) bury	***li**nubuŋ*	buried
3	*wa**Ra**ʔ*	none	*nawa**dʔ**an*	left without
	*ma**Ra**ʔ*	dry	*ma**dʔ**an*	dried out
	*pasipa**Ra***	(to) cuss, curse	*pasipa**dʔ**an*	to be cussed (at)
	***R**a**Ra**ʔ*	smarting pain	***li**na**dʔ**an*[16]	of great pain

2.4.2 Rule exceptions

It was previously mentioned that roots with /a/ or /u/ as collocates feature DAR. The common BIS /-l+V_1-/ infix encoding the abilitative/potentive or emphatic mood is reflexed with the nucleus of the initial syllable /-DAR+V_1-/ in Akeanon. Due to possible regularization tendencies, this applies when inflecting syllables with /i/ as a nucleus.

Table 10: DAR regularization in inflection

Root	DAR	CBR	Gloss
Tipun	*pagti**Ri**pun*	*pagti**li**pun*	Gathering
Hilu	*makahi**Ri**lu*	*makahi**li**lu*	Poisonous

2.5 Variation

Distribution patterns however only represent the common form. In a preliminary dialectological survey, Rentillo (2018) so far identified that this reflex is evident in almost all Akeanon speaking areas, especially in the provincial capital Kalibo and its peripheries along the Aklan River valley, where much of the population is concentrated. One notable outlier would be the northeastern variety in Nabas, which as per folk accounts, is known to possess the /l~r/ reflex of DAR. Enumerated in Table 11 below are examples of lexical items with the Nabas reflex alongside the more common DAR.

[16] Combination of type 2 and 3 conditions.

Table 11: Nabas /l~r/ correspondences

Form	Position	Nabas	DAR form	Gloss
l-form	C-	***l**ambat*	***R**ambat*	Net
		***l**ujʔa*	***R**ujʔa*	Ginger
	-C-	*bu**l**an*	*bu**R**an*	moon, month
		*bu**l**uŋ*	*bu**R**uŋ*	medicine
	-C	*hambal*	*hamba**R***	(to) speak
		bahul	*bahu**R***	big, large
r-form	-C-	*ba**r**as*	*ba**R**as*	sand
		*ʔu**r**an*	*ʔu**R**an*	rain
		*tu**r**ug*	*tu**R**ug*	(to) sleep
l~r-form	-C-	*ta**l**amnan, ta**r**amnan*	*ta**R**amnan*	garden
		*da**l**agan, da**r**agan*	*daRagan*	(to) run
		*(ma)hu**l**ug, (ma)hu**r**ug*	*(ma)huRug*	(to) fall

Based on initial data, Nabas /l/ occurs pre-, post-, and intervocalically while /r/ is confined within intervocalic positions. This /l~r/ reflex suggests an extra-Akeanon (henceforth, EA) influence possibly of Kinarayan or proto-WBIS origins. There are also lexical items where both intervocalic reflexes are in complementary distribution (e.g. *ta**l**amnan*, *ta**r**amnan*) but patterns are inconsistent possibly due to lexicalization brought by said EA variety. For example, 'road, pathway' [17] is *daRan* < proto-Austronesian **zalan* (Blust, 1999) and *ʔaɣagjan* < proto-Bis **qagi* (Zorc, 1977). Compare this with *dalan* and *ʔaragjan* in Nabas.

Figure 1: Location of Northwestern Panay in the Philippines

Historical anecdotes point to cross-generational contact among communities in northwestern Panay (see Figure 1) particularly those in Pandan (Antique), a Kinarayan speaking area, and nearby areas of Aklan (e.g. Nabas, Ibajay). This part of Panay is a key transit route linking northern Antique and the rest of Aklan. The latter serves as a more

[17] Loaned variant is *karsada* from Spanish *calzada* 'paved road' (cf. Tagalog *kalsada*).

important economic and logistical hub for residents of bordering towns of Antique since they are geographically more distant to the provincial center in San Jose de Buenavista, which is 110 km away or nearly a 3-hour drive south. Malay and Kalibo, two major economic centers of Aklan, are just 30 km and 55 km away, respectively.

2.6 Crosslinguistic comparison

As a counterevidence against proposals of a single Philippine subgroup under Malayo-Polynesian, Zorc (2021) argues for an alternative explanation for the current linguistic macro-ecology of the Philippines through what he calls *axes*, or relationships of different languages and subgroups based on areal innovations, but which do not lead to genetic subgroupings. They are rather more related to Sprachbunds and linkages (Pawley & Ross, 1995; Ross, 1988). This may be an important point of discussion on the nature of DAR through its crosslinguistic position amid WBIS and neighboring groups.

Akeanon according to Zorc belongs to the North Bisayan[18] Axis (NBAXIS). Two NBAXIS members with a /j/ reflex of proto-BIS **l*, **-d-* are Romblomanon and Asi[19] (see Table 12). Romblomanon is grouped under Central Bisayan (CBIS), while Asi also called Banton is its own first order branch directly under BIS.

Table 12: Romblomanon, Asi /j/ correspondences

Common Akeanon	Romblomanon, Asi	Other Bisayan	Gloss
*wa**R**u*	*wa**j**u*	*Wa**l**u*	eight
*du**R**aw*	*du**j**aw* [ROM], *ru**j**aw* [ASI]	*du**l**aw* [WAR]	yellow
*ku**R**aŋ*	*ku**j**aŋ*	*Ku**l**aŋ*	insufficient
*da**R**an*	*da**j**an* [ROM], *ra**j**an* [ASI]	*Da**l**an*	road

Note. ROM – Romblomaon, ASI – Asi, WAR – Waray

Both DAR and /j/ in ASI reflect proto-BIS **l*, while ROM /j/ is a reflex of intervocalic and coda **l*. Likewise, DAR and /j/ in both ROM and ASI are reflexes of proto-BIS intervocalic **-d-.* Compare these with reflexes of other Bis varieties within the NBAxis in Table 13 (Zorc, 1977, p. 203).

[18] The North Bisayan Axis covers a geographic perimeter much wider than WBIS spanning across the southern coasts of Mindoro and Calamian Islands across Sibuyan Sea all the way to the Bikol region. NBAXIS includes WBIS, CBIS (excluding Warayan), Asi, Bikol languages, Hanunuo (*Southern Mangyan*), and Kagayanen (*Manobo*).

[19] Data for comparison is from the Bantoanon (BAN), Odionganon (ODG), and Sibalenhon (SIB) dialects.

Table 13: Select NBAxis correspondences reflecting proto-BIS

	BIS Subgroup	**l-*	**-l-*	**-l*	**-d-*
Akeanon[20]	WBIS	R	R	R	R
Asi (ODG, BAN, SIB)	ASI	J	j	j	j
Romblomanon	CBIS	l~j[21]	j	j	j
Hiligaynon, Capiznon	CBIS	L	l	l	l
Kinaray-a	WBIS	L	l	l	r
Inonhan	WBIS	L	l	l	r
Cuyonon	WBIS	L	l	l	r
Ratagnon	WBIS	L	l	l	r
Minasbate	CBIS	L	l	l	r
Northern Sorsogon	CBIS	L	l	l	r
Southern Sorsogon	CBIS	L	l	l	r

Based on the above proto-Bis correspondences, two Akeanon reflexes, both of which velarized as per existing documentations, will be historically and articulatorily analyzed: **l* > *R* and **-d-* > *-R-*. This velarization process in totality could have been facilitated by hypercorrection (Ohala, 1993 in Bybee, 2015) or automatization factors (Bybee & Easterday, 2019). There are two possible intermediate processes leading both proto forms into modern DAR. One is via palatalization and the other via relateralization.

2.6.1 Palatalization to velarization

The first scenario is an intermediary palatalization prior to velarization, thus trajectories of:

1. **l* > /j/ > *R*
2. **-d-* > /-j-/ > *-R-*

Palatalization is crosslinguistically a very common phenomenon as attested in Indo-European (e.g. Romance, Slavic), Chinese, Bantu, and Semitic (Bateman, 2011; Bybee, 2015). Lateral approximants undergoing palatalization are among the most common of this process. An earlier */-*form Akeanon could have independently undergone **l* > /j/ alongside earlier ASI and ROM that recently split from CBIS. All three within NBAXIS could therefore be relics after other neighboring varieties switched to an /l/ reflex. Alternatively, this earlier */-*form may have been influenced by a nearby NBAXIS variety (e.g. ROM, ASI) that palatalized much even earlier. Greater linguistic diversity

[20] Contrastive with /l/ and intervocalic /-d-/ (e.g. ***l**impjo*, *ʔa**l**ima*, *ʔu**l**iŋ*, *suti**l***, *bari**l***, *pulga**d**a*, *si**d**a*) in most of which are recently-introduced words or loans.

[21] See French (1979).

and internal variation in northwestern Visayas surrounding Akeanon may suggest these varieties underwent sound change much earlier and that DAR is a relatively recent development (de la Cruz & Zorc, 1968).

There are sufficient crosslinguistic evidence (cf. Bhat, 1978, Bateman, 2011) pointing to how coronals especially dentals and alveolars (e.g. /d/) are inclined to undergo palatalization, a process which Parrell and Narayanan (2018) refer as *coronal reduction*. This could explain **-d-* > /-j-/ in ROM, ASI, and Surigaonon, and to an extent **-d-*[22] > Ø[23] in Surigaonon and Cebuan varieties (e.g. proto-Bis **ʔu**d**an* > *ʔu**j**an*, *ʔu**(w)**an* 'rain'). Weakening of stops into approximants is an aerodynamically natural process based on the concept of markedness (Nagle, 2014). Voiced stops (e.g. /d/) for example are articulatorily complex to produce due to the required effort in the glottis for vibration and airflow in coordination with oral closure and release. Lenition into, say, an approximant (e.g. /j/) is articulatorily less effortful but is perceptually less marked as a trade-off.

But how could palatalization result in velarization? The interaction of an introduced [DORSAL] /j/ and pre-DAR [CORONAL] /l/ could have led to assimilation based on the need to perceptually and articulatorily "recalibrate" or reanalyze (see Bybee, 2015) both approximants as they started to overlap in the inventory during the initial period of sound change. Keating (1988 in Jaggers, 2018) argues that [j] is *both* [DORSAL] and [CORONAL], which can explain for this tendency to velarize. On another note, Browman and Goldstein (1995) argue that the tip (coronal) and back (dorsal) of the tongue are mechanically interconnected such that "in initial position, the tongue tip and the tongue dorsum gesture are roughly synchronous, whereas word-finally, the wider tongue dorsum constriction precedes the narrower tongue-tip closure" (ibid, p. 2). In the case of Akeanon, coronal articulation might have dwindled due to palatal strengthening until it stabilized with an emphasized velar gesture. This strengthening is analogical to a morphophonemic process in Kimatumbi (*Bantu*) where postnasal glides [w, j] and liquids [l] undergo "hardening" (Odden, 2015, p. 12) into [d, dʒ, gʷ], respectively (e.g. [**j**ʊ́ba] > [n-**dʒ**ʊbɛ́] 'hide [1sg subjunctive]'). Other BIS languages surrounding eastern Bohol Sea are known for a dorsal-to-coronal shift via fortition. Boholano, Leyteño Cebuano, Surigaonon varieties (Zorc, 1977), and Baybayanon (Rubino, 2006) feature a **j-* > /dʒ/ reflex while Porohanon has /z/ (Santiago, 2018; Wolff, 1967) whereby (proto-)BIS **jawaʔ* > *dʒawaʔ*, *zawaʔ* 'devil.'

2.6.2 Relateralization to velarization

This second scenario posits that Akeanon first palatalized regardless of its split from proto-BIS and regardless of the influence by a neighboring *j*-form variety as in §2.6.1. It

[22] Including **-l-*, **-l*

[23] Then resulting to vowel lengthening V: in some lexical items

then relateralized which motivated /j/ reflexes of **l* and **-d-* to move farther back from the hard palate to the velum, hence trajectories of:

1. **l* > /j/ > /j~l/ > *R*
2. **-d-* > /-j-/ > /-j-~-l-/ > *-R*

A palatal-to-velar maneuver in Akeanon could have been prompted by a second phase of EA contact in the nearer past by a different prestige variety, possibly Hiligaynon as it only features the /l/ reflex for both **l* and **-d-*, hence a relateralization stage. ROM and ASI /j/ (or including Akeanon) could then be relics of post-Hiligaynon expansion in Western Visayas. French (1979) reports a recent shift in proto-BIS **l-* reflex in Romblomanon. Townsfolk would tend to add, although irregularly, a prevocalic /l-/ whereby *jaki* 'male' > *ljaki*. This is suggested to be influenced by Hiligaynon, the regional trade language (or Spanish, Tagalog, and English due to loaning). Meanwhile "barrio" speakers (more rural?) maintain the /j-/ reflex, which implies that the original ROM prevocalic reflex of **l-* is /j/. Zorc (1977) on the other hand describes this only as a /l-/ (recall Table 13) which may only speak for the representative dialect he sampled in his study. Alternatively, lateralization could have been transmitted via Capiznon. Aklan for much of its known history was an administrative component of Capiz until only in 1956 when it gained provincehood. This might have been a crucial element in shaping the community life area [24] of Akeanon speakers (cf. Nabas variety in northwestern Panay) and thus their linguistic repertoire. This is assuming that Capiznon is truly a CBIS variety in a very close relationship with Hiligaynon akin to a mini-axis, or it could rather be an old WBIS variety with a Hiligaynon superstratum. Either way, its current status remains highly controversial and necessitates further documentation.

Velarization of liquids has been attested in a wide range of languages such as Italian, Dutch, Portuguese, Puerto Rican Spanish, Sasak (cf. Flynn, 2012), languages of New Guinea, and East Chadic (cf. Lagdefoged & Maddieson, 1996). This may also explain why the velar alveolar lateral [ɬ] widely known as "dark L" is crosslinguistically typical. In one sociophonetic experiment, for example, Moosmüller and colleagues (2015) found an ongoing shift from alveolar lateral [l] to velarized lateral [ɬ] in Viennese German (e.g. [**l**æːd̥ɛr] > [ˈ**ɬ**æːdɑ] 'unfortunately').

2.6.3 Nabas Akeanon reflex

The Nabas variety meanwhile could be a relic after exposure to the *l*-form EA variety. It is not clear though whether Akeanon speaking inhabitants of Nabas were influenced by an EA variety, or their lineage traces to migrants speaking an EA variety

[24] Dialectologists and sociolinguists have extensively documented how human movement and relations (e.g. administrative jurisdictions, transport routes, marriage practices, and cultural events) are important in shaping languages and language attitudes (e.g. Mase, 1999; Gooskens, 2005; Montgomery & Stoeckle, 2013; Jeszenszky et al., 2019).

and had to assimilate with original Akeanon settlers. It is likely however that close contact with Pandan is a plausible explanation for its /l~r/ reflex which aligns with Kinarayan reflexes (cf. Zorc, 1977).

3 Acoustic description

This section now provides a description on the acoustic properties of DAR to help characterize and confirm of whether the velarized reflex is an approximant or fricative.

3.1 Method

Data was gathered through the help of four (4) native Akeanon speakers (male = 2; female = 2). With a mean age of 29.25 years old all subjects have lived either in the towns of Kalibo or Banga in Aklan, and have been speaking Akeanon at home and within the community for no less than 12 consecutive years. Spoken data was captured with a Sony Digital Voice Recorder ICD-UX560 with a 44.1 kHz sampling rate within an unattenuated room. Audacity v. 2.3.0. was used for further background noise reduction. Data were then processed using Praat v. 6.0.49 (Boersma & Weenik, 1992-2022) for waveform and spectrogram segmentation and analyses through spectrogram with the assistance of waveform.

Two (2) tasks were conducted in this study, both of which all participants underwent. The first task was an indirect elicitation, while the second was direct. The first task involved a 22-item questionnaire (see Appendix A) eliciting responses in Akeanon. Sixteen (16) questions—anticipated to be answered with an Akeanon input featuring a DAR—were the primary experimental stimuli (e.g. *eoha* 'tear,' *bakae* '(to) buy'), while an additional set of six distractions lead to an answer without a DAR (e.g. *kulintas* 'necklace,' *guwa* 'outside'). The second task prompted the subjects to read out loud 14 words (see Appendix B) flashed on a computer screen while being voice recorded. Nine items featured DAR (e.g. *sueod* 'inside, contents,' *eapok* 'mud, earth'), while an additional 5 (e.g. *ayam* 'dog,' *panit* 'skin [anat.]') served as distractors. A total of 99 tokens were elicited from the four informants. 51 were used for analysis of the intervocalic DAR and another 48 for the pre- and postvocalic DAR. 8 tokens involving the words *baeay* and *kaeayo* were used to compare /j/ with DAR and vowels.

To describe DAR, this study focused on formant frequency, vocalic duration, and acoustic intensity (cf. Jaggers, 2018). Vocalic context was taken into consideration to see variation in behavior. Based on typical distribution patterns of DAR (§2.3), sequences with /a/ and /u/ were prioritized. To test the argument that it is an approximant (Zorc, 2019, 2005), acoustic data of the palatal approximant /j/ were also compared. Formant frequencies specifically F1 and F2 were used to measure frontness and height, respectively. It is expected that regardless of whether DAR is a fricative or

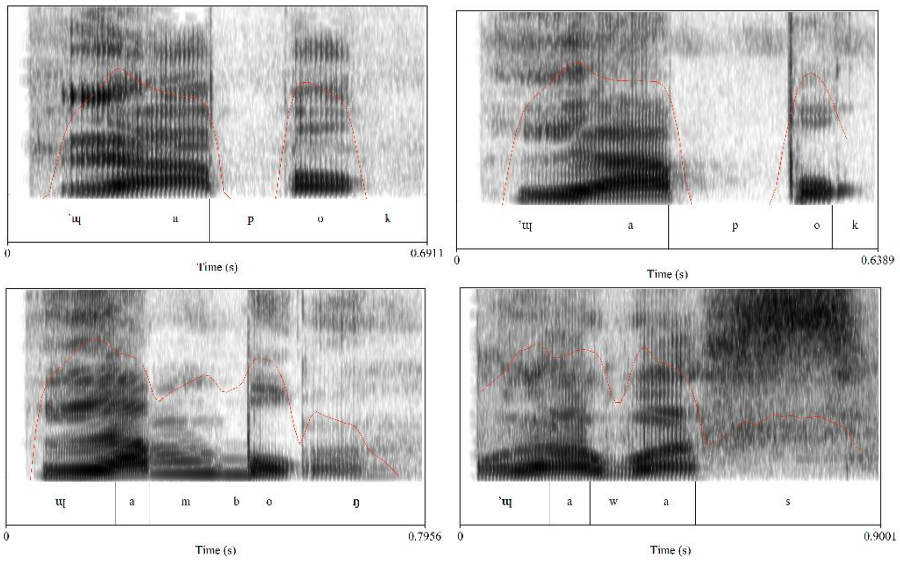
an approximant, its velar placement formant will exhibit a tighter and less anterior articulation compared to vowels, thus respectively lower F1 and F2. Acoustic intensity will be matched with formant to confirm articulatory profiles. Vocalic duration meanwhile was measured using the average absolute length of each realized DAR and relevant phoneme after onset. However, it should be noted that duration is relative due to various factors such as speech rate, pausing. Since this study is descriptive, future experiments sensitive to interaction with formant, sonority, and other (extra-)prosodic factors against a variety of phonemes are very much necessary to explore this phonological facet. Formant, duration, and intensity data between DAR and /a/, /u/, and /j/ were compared through various non-parametric tests in SPSS v. 26.

3.2 Results

Data below is divided into five major parts: The first are spectrograms of examples followed by acoustic analysis of formant, duration, and intensity. The last is a comparison of acoustic properties of velar fricatives.

3.2.1 Spectrogram

Spectrogram of Akeanon words with DAR are shown in Figures 2-5 below. Intensity is also marked (in red line).



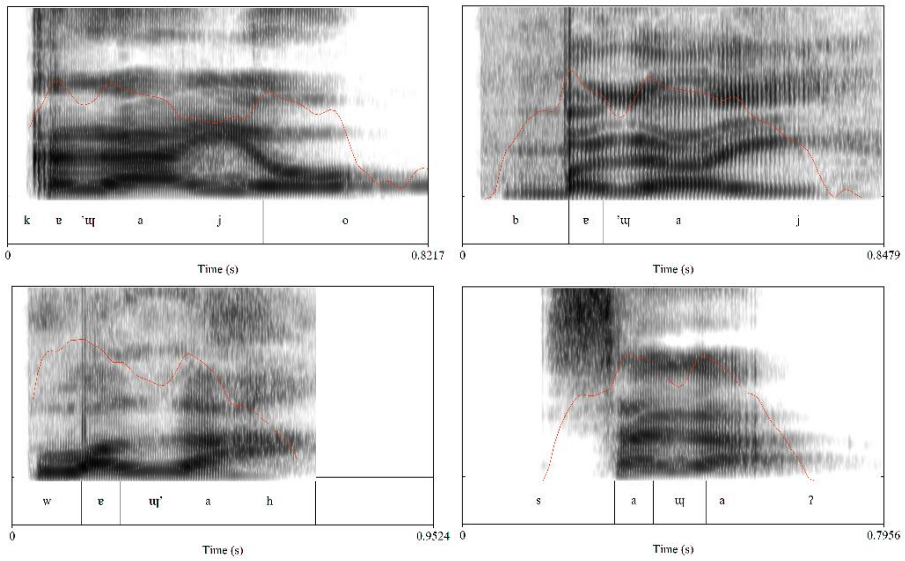


Figure 2: DAR onset + /a/ nucleus[25]

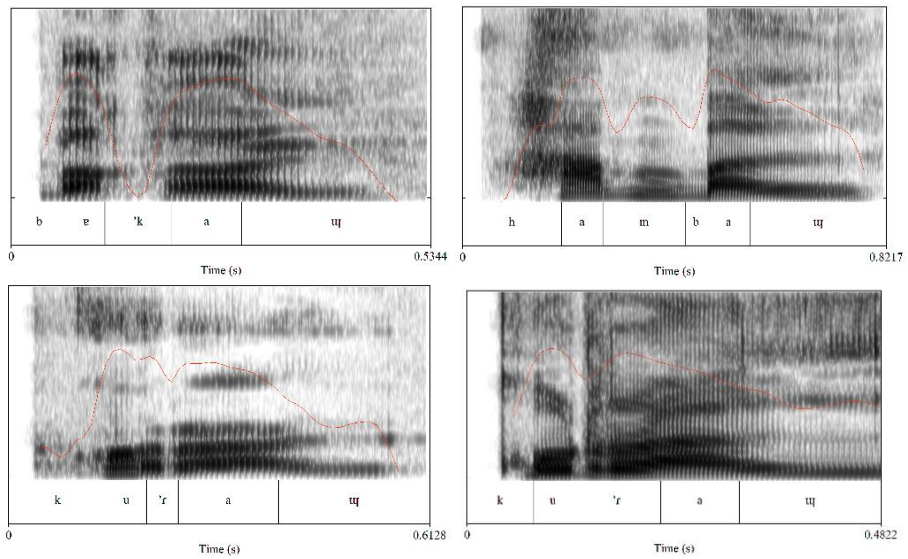


Figure 3: /a/ nucleus + DAR coda[26]

[25] From top L-R: *eapok* 'mud, earth' (M1, F1) *eambong* 'upper garment, clothing' (F1), *eawas* 'body' (M1), *kaeayo* 'fire' (F2), *baeay* 'house' (M1), *waea* 'left (dir.)' (F1), *saea* 'wrong, mistake' (F2)

[26] From top L-R: *bakae* '(to) buy' (M1), *hambae* '(to) speak' (F1), *kurae* 'fence, enclosure' (M2, F1)

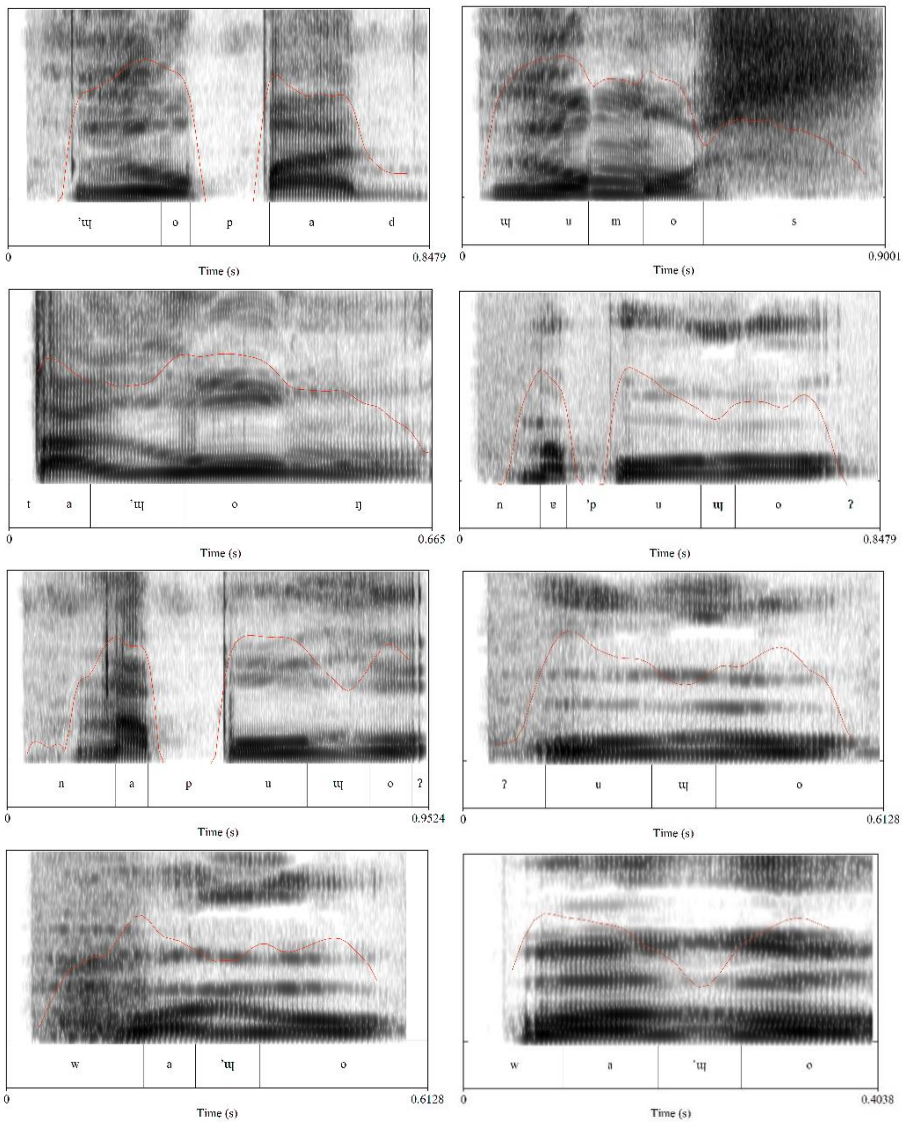


Figure 4: DAR onset + /u/ nucleus[27]

[27] From top L-R: *eopad* '(to) fly' (F1), *eomos* '(to) drown' (F1), *taeong* 'eggplant' (F1), *napueo* 'ten' (M2, F1), *ueo* 'head (anat.)' (M2), *waeo* 'eight' (M2, F2)

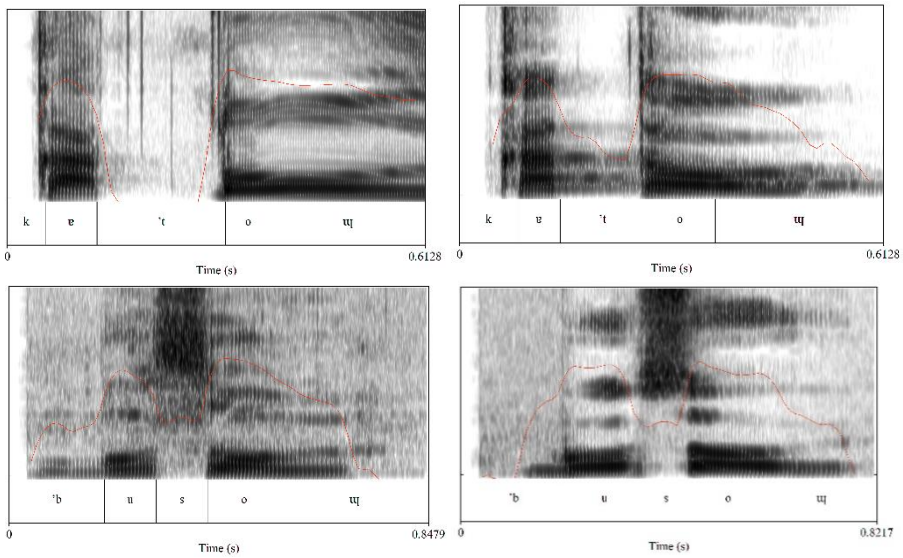


Figure 5: /u/ nucleus + DAR coda[28]

3.2.2 Formant frequencies

Below presents formant frequencies of pre-, post-, and intervocalic DAR with consideration for phonological context (i.e. word position, adjacent phonemes). Figures 7-9 illustrate a boxplot of F1 and F2 values.

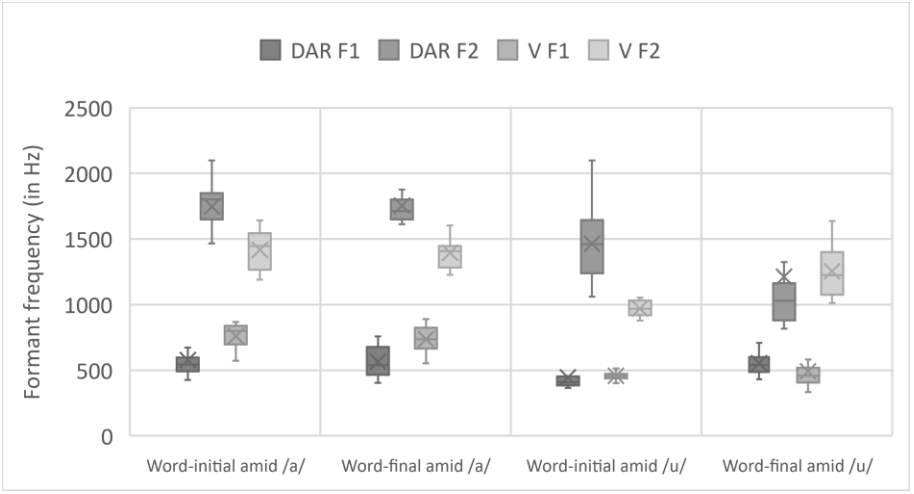


Figure 7: Formant frequencies of pre- and postvocalic DAR with adjacent vowels

[28] From top L-R: *katoe* '(to) itch' (F1, F2), *busoe* 'seed' (M1, M2)

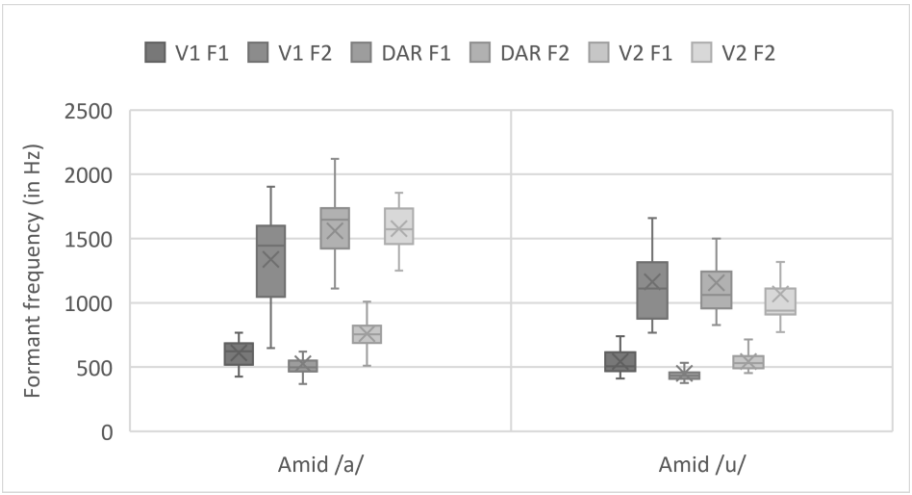


Figure 8: Formant frequencies of intervocalic DAR and adjacent vowels

Within each phoneme, there is a marked F1-F2 difference in pre- and postvocalic DAR compared to vowels. This is seen to be more modest in sequences with /u/. Across phonemes, it can be noted that DAR generally has a lower F1 compared to vowels. However, word-final DAR within /u/ contexts has a higher F1 but lower F2. While the lower F2 can be due to energy shift away from the velar, the higher vocalic F1 could imply tighter constriction compared to vowels. The F2 profiles of vowels in most other sequences are also peculiar since it is expected that higher F2 corresponds to more interior energy concentration which should be associated with vowels more than velars. The syllabic structure and stress-timing of the language could be a factor which is not thoroughly explored in this data. Generally, formant values are significantly lower when DAR and the vowel are positioned in word-initial or word-final syllables containing a close vowel (Table 14).

Table 14: Mean formants and *p*-values of pre- and postvocalic DAR and adjacent vowels

			DAR		V	
			F1	F2	F1	F2
Kruskal-Wallis *p*-value			0.01	0.001	2e-6	7e-6
Mean (in Hz)	Word-initial	Amid /a/	577	1747	761	1417
		Amid /u/	446	1463	457	971
	Word-final	Amid /a/	565	1755	737	1395
		Amid /u/	553	1213	492	1254

A Mann-Whitney test (Table 15) on intervocalic data reveals that there is a significant difference in formant frequency between phonological contexts for the F1 and F2 of both DAR and V2. For example, the mean F1 of DAR when next to an open

vowel is 1559 Hz versus a mean F2 of 1156 Hz if next to a close vowel. The same for the mean F1 of a V2 at 1578 Hz amidst /a/, while a mean F2 of 1069 Hz amidst /u/. This implies that the position of either DAR and V2 and/or phoneme adjacent to them has an effect. It is indeed much less perceptually clear whenever a word with intervocalic DAR is next to a close vowel compared being next to font (e.g. *sueod* vs *baeas*).

Table 15: Mean formants and *p*-values of intervocalic DAR and adjacent vowels

		V1		DAR		V2	
		F1	F2	F1	F2	F1	F2
Mann-Whitney *p*-value		0.06	0.08	0.01	4e-5	7.79e-7	6e-6
Mean (in Hz)	Amid /a/	609	1339	525	1559	759	1578
	Amid /u/	543	1163	451	1156	543	1069

Figure 9 below compares formant frequency between DAR and /j/ in words with the palatal approximant (i.e. *baeay*, *kaeayo*; from 8 tokens). There is a marginally higher F1 for DAR, while on the other hand F2 is marginally higher for /j/ even when compared to vowels. Mann-Whitney test (Table 16) confirms a significant difference in F2 ($p = 0.001$) between DAR and /j/, but not for F1.

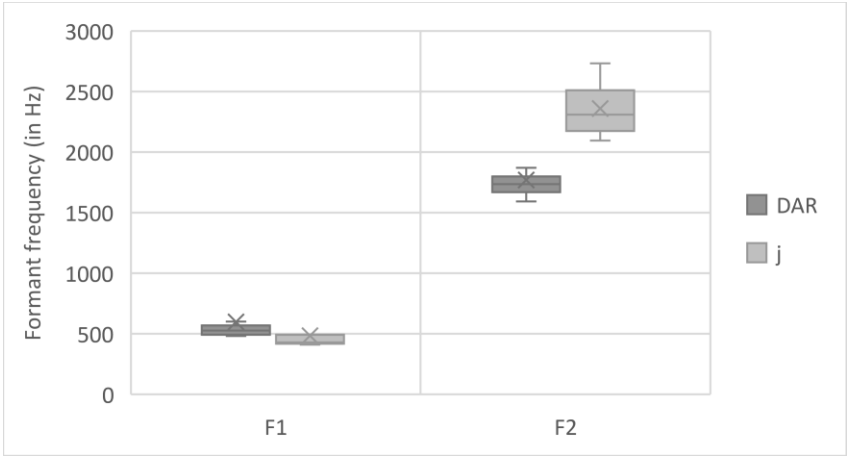


Figure 9: Formant frequencies of DAR and /j/

Table 16: Mean formant frequencies and *p*-values of DAR and /j/

		F1	F2
Mann-Whitney *p*-value		0.07	0.001
Mean (in Hz)	DAR	598	1769
	/j/	484	2360

3.2.3 Acoustic intensity

Below presents acoustic intensity of pre-, post-, and intervocalic DAR with consideration for phonological context (i.e. word position, adjacent phonemes). Figures 10-12 illustrate a boxplot of intensity values.

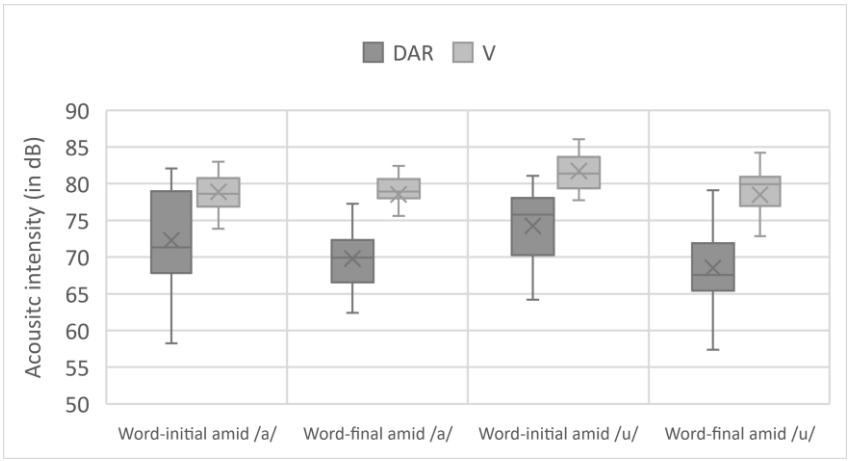


Figure 10: Acoustic intensities of pre- and postvocalic DAR and adjacent vowels

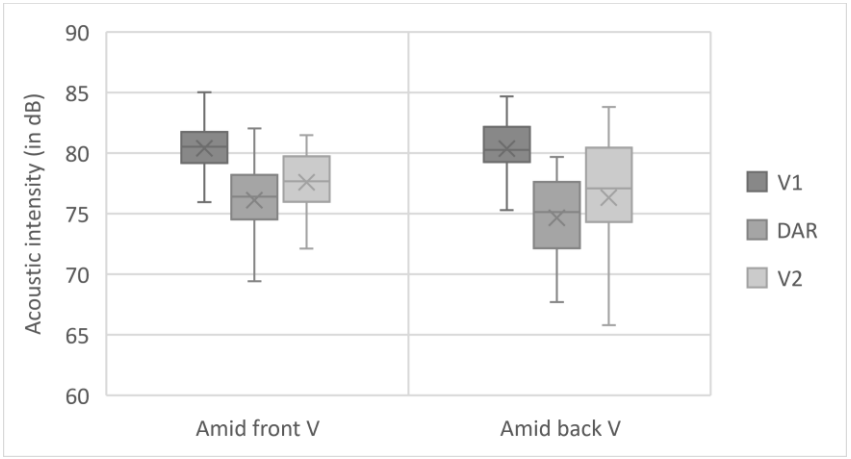


Figure 11: Acoustic intensities of intervocalic DAR and adjacent vowels

There is a minimally greater intensity in vowels compared to DAR as expected. This is a pattern evident in pre-, post-, and intervocalic positions. A Kruskal-Wallis test on pre- and postvocalic data in Table 17 shows that there is no statistically significant difference among DAR and vowels. This is the same in Table 18 where intervocalic data yields no significant difference in distribution of intensity values in both phonological contexts.

Table 17: Mean intensities and *p*-values of pre-and postvocalic DAR and adjacent vowels

			DAR	V
Kruskal-Wallis *p*-value			0.17	0.12
Mean (in dB)	Word-initial	Amid /a/	72	79
		Amid /u/	70	79
	Word-final	Amid /a/	74	82
		Amid /u/	69	78

Table 18: Mean intensities and *p*-values of intervocalic DAR and adjacent vowels

		V1	DAR	V2
Kruskal-Wallis *p*-value		0.83	0.26	0.51
Mean (in dB)	Amid /a/	80	76	78
	Amid /u/	80	75	76

Meanwhile, Figure 12 below shows intensity values of DAR, /j/, and adjacent vowels in words with the palatal approximant (from 8 tokens). Data shows /j/ has a more notable dip (compared to DAR against vowels), a tendency also found by Shaw et al. (2020).

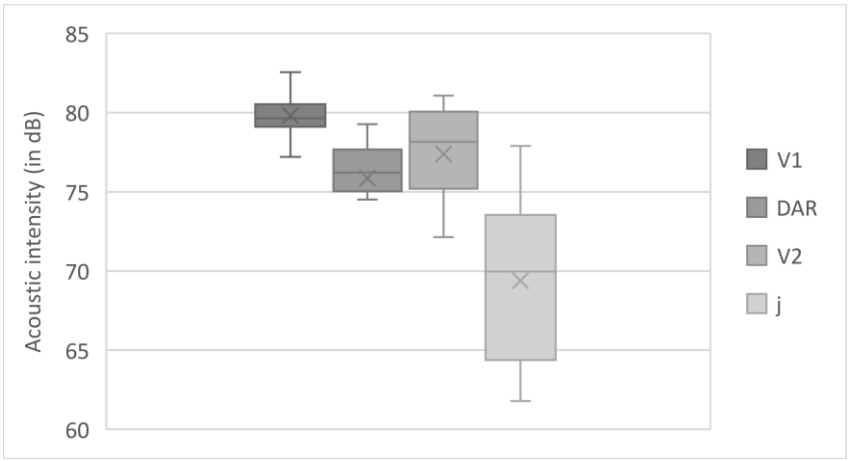


Figure 12: Acoustic intensities of DAR, adjacent vowels, and /j/

Table 19: Mean acoustic intensities of DAR, adjacent vowels, and /j/

	V1	DAR	V2	/j/
Mean (in dB)	80	76	77	69

Through a Kruskal-Wallis test, it was confirmed that there is a significant difference (p = 0.001) in intensity values across phonemes involved. Compared with a significantly higher formant, this demonstrates how loudness does not always go with articulatory energy. A Bonferroni-adjusted post hoc test (Table 20) confirms that /j/ has a significantly lower intensity than both vowel types, but not compared to DAR.

Table 20: Post hoc test on intensities of DAR, adjacent vowels, and /j/

	V1	DAR	V2	/j/
V1	--	0.141	1.000	0.0005
DAR		--	1.000	0.56
V2			--	0.04
/j/				--

3.2.4 Duration

This section now discusses duration of pre-, post-, and intervocalic DAR with consideration for phonological context (i.e. word position, adjacent phonemes). Figures 13-15 illustrate a boxplot of duration values.

Generally, pre- and postvocalic DAR is articulated much longer compared to neighboring vowels. This is in contrast to what Martínez-Celdrán and Reguiera (2008) found in Galician, where spirant approximants show shorter duration than stops and fricatives. Through a Kruskal-Wallis test (Table 21) it was confirmed that only DAR is significantly different across phonological contexts (p = 8.6e-5) where it tends to be articulated much longer when adjacent to close vowels. This could be due to stress-timing of words used for the elicitation, or cross-articulatory effects of a vowel type.

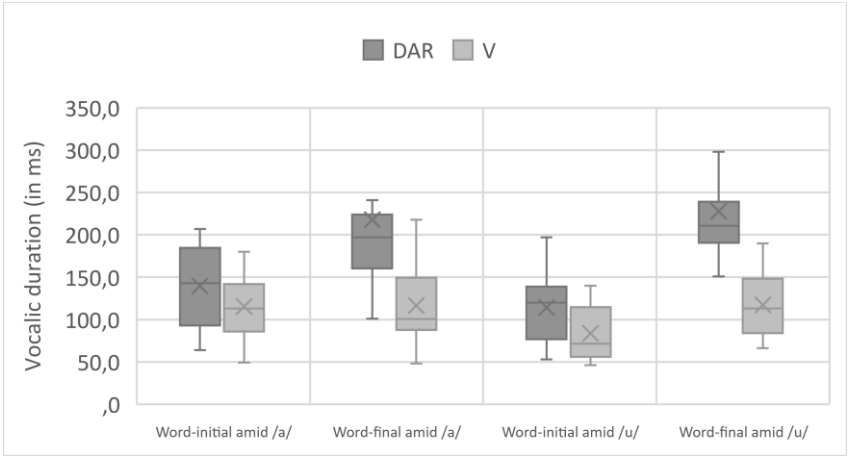


Figure 13: Vocalic duration of pre- and postvocalic DAR and adjacent vowels

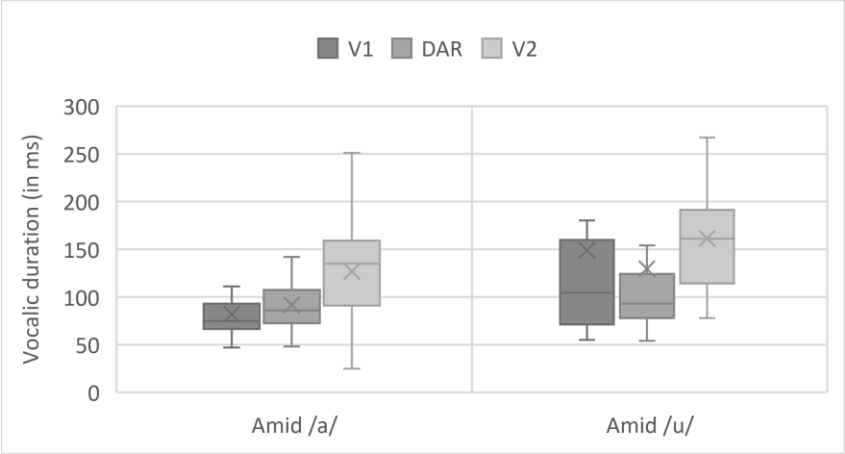


Figure 14: Vocalic duration of intervocalic DAR and adjacent vowels

Table 21: Mean duration and *p*-values of pre- and postvocalic DAR and adjacent vowels

			DAR	V
Kruskal-Wallis *p*-value			8.6e-5	0.11
Mean (in ms)	Word-initial	Amid /a/	139	115
		Amid /u/	218	117
	Word-final	Amid /a/	114	84
		Amid /u/	228	117

On the one hand, it seems that V2 has longer duration compared to V1 and DAR in intervocalic positions. Compared to pre- and postvocalic positions, intervocalic DAR also seems shorter. This could be attributed to the mechanical demands of articulating word-medial phonemes or vowels. A Mann-Whitney test (Table 22) meanwhile reveals a significant difference in distribution of V1 ($p = 0.01$) and V2 ($p = 0.03$) durations amid both an open and a close vowel. This could imply that an intervocalic DAR is stabler in duration regardless of phonological context.

Table 22: Mean duration and *p*-values of intervocalic DAR and adjacent vowels

		V1	DAR	V2
Mann-Whitney *p*-value		0.01	0.23	0.03
Mean (in ms)	Amid /a/	82	92	127
	Amid /u/	149	129	161

Figure 15 below presents the duration of DAR, /j/, and adjacent vowels in words with the palatal approximant (from same 8 tokens). It can be seen that /j/ is articulated much longer than DAR and the vowels.

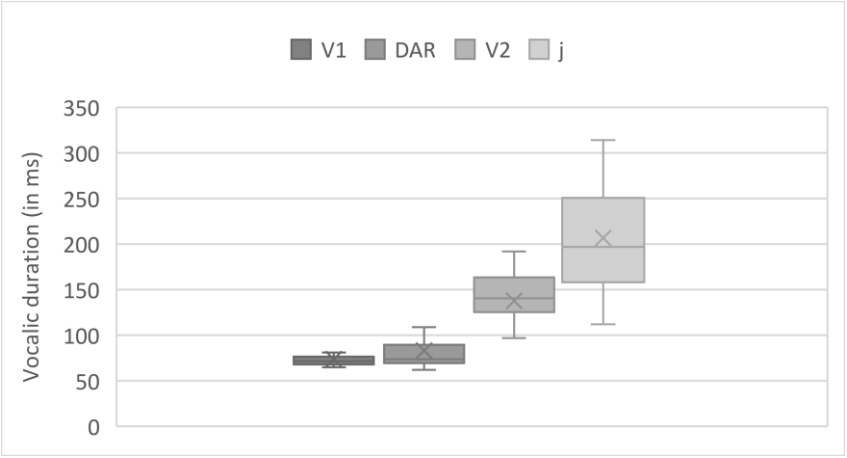


Figure 15: Vocalic duration of DAR, adjacent vowels, and /j/

Table 23: Mean duration of DAR, adjacent vowels, and /j/

	V1	DAR	V2	/j/
Mean (in ms)	74	83	138	207

A Kruskal-Wallis test reveals that there is a significant difference (p = 0.0003) in duration across all phonemes. This is confirmed through a Bonferroni-adjusted post hoc test (Table 24) showing that /j/ has significantly longer duration than V1 and DAR.

Table 24: Post hoc test on intensities of DAR, adjacent vowels, and /j/

	V1	DAR	V2	/j/
V1	--	1.000	0.09	0.001
DAR		--	0.27	0.005
V2			--	1.000
/j/				--

3.2.5 Compared with velar fricatives

When reviewing spectrograms, it seems that the spectral shape of the approximant is identical to the fricative counterpart. Martínez-Celdrán and Reguiera (2008, pp. 57-58) present examples of open and closed variants of the “spirant approximant [ɣ̞]” in Spanish [laβ̞oˈðeɣ̞a] and Galician [ˈloɣ̞o]. The “close” variant has F1 and F2 concentrated within low frequencies indicating a less anterior, more constricted

articulation characteristic of velars as opposed to the “open” variant. See also Figure 16 below for contrasts between [íˬɯ́] ‘money’ (left) and [èɣó] ‘darkness’ (right) in Urhobo (Rolle, 2013, p. 304). F1 and F2 in both approximant and fricative are quite low which are typical of a velar (Baart, 2010). Our Akeanon samples meanwhile have much wider gaps between F1 and F2 within DAR articulation. Turbulence is also concentrated in higher formant frequencies with less noise at low frequencies.

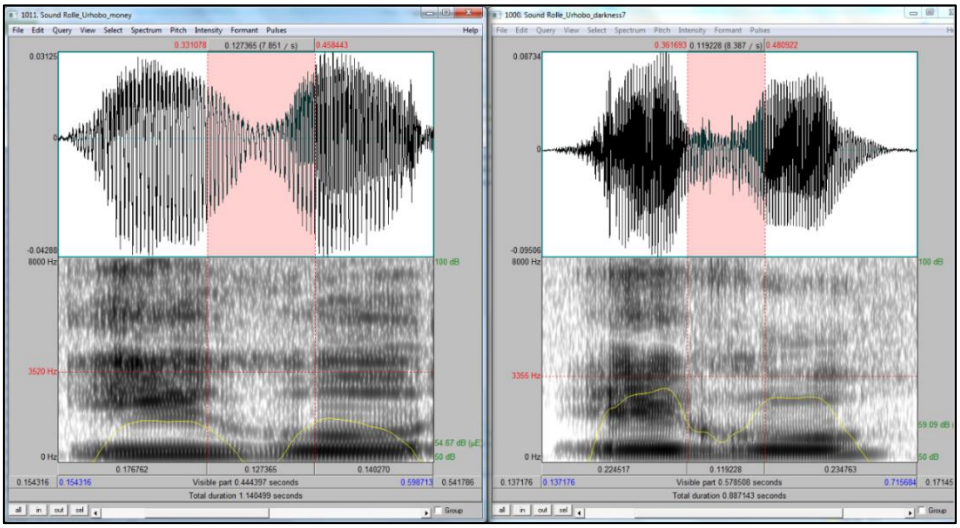


Figure 16: Spectrogram of [ɯ] and [ɣ] variants in Urhobo

Upper formants from our data have less “noisy” spectral shapes in contexts with /a/ compared to those with /u/. They also have slightly higher F2 band than the latter most particularly within word-medial positions. From a perceptual standpoint, DAR within /u/ contexts also have more roundedness. Baart (2010) mentions that F2 behavior varies depending on quality of the adjacent vowel. It is known that non-vocalic variability is largely affected by the vowel context which has time and time been observed (Luce & Charles-Luce, 1985; Nearey & Rochet, 1994; Weglarski et al., 2000; Staroverov & Tebay, 2021) including semivowels in a notable crosslinguistic observation by Maddieson and Emmorey (1985).

Speakers note that DAR does not have a “raspy” or “coarse” guttural sound. Zorc (2005) also argues how the phoneme in focus lacks “friction” which can rather be observed in languages featuring a voiced velar fricative [ɣ] such as Modern Hebrew, and certain varieties of German and Dutch. All these articulatory properties corroborate the distinction set by Ball and Rahilly (1991 in Martínez-Celdrán, 2004) for both phonemes of contention in Spanish. Romero (1995 in ibid) also argues that there is no reliable difference in degree of constriction between fricatives and approximants. Rather, the basis of distinction should be the “lack of articulatory tension” (Martinet 1980-1981 in ibid, p. 204) possessed by the latter. From these premises, we adhere to

Martínez-Celdrán's (2004) proposed definition which effectively fits the properties attested in DAR whereby APPROXIMANTS are:

> "…segments that, having a certain degree of constriction, lack a turbulent airstream, either due to the non-existence of the necessary articulatory precision required to produce it, or because the vocal tract is not narrow enough, or because these conditions occur simultaneously" (p. 208).

It can be presumed that this approximant quality identical to Spanish semivowels prompted its early codification into ⟨Ee⟩. It is known that much of modern written traditions in the Philippines trace their roots to the Spanish language and Spanish-based education[29] of the colonial period. It is undoubted that the earliest writing practice of modern Akeanon was started by those who received formal education through a Spanish orthographic perspective.

4 Conclusion

In this paper we provide an extended description of Akeanon phonology by describing the distinct Akeanon reflex (DAR). Acoustic data reveal that DAR has a distinct property compared to vowels and the approximant /j/. DAR has a generally lower F1 than that of vowels but greater than the glide /j/. Its F2 is significantly greater than vowels but less than /j/. Phonemic context may also play a role since DAR formants are lower if admist /u/ than amidst /a/ in any position. Duration-wise, pre- and postvocalic DAR is also articulated longer than vowels especially if it is within the context of /u/ although this is not seen intervocalically. Meanwhile, /j/ has a significantly longer duration than V1 and DAR. In terms of intensity, DAR and vowels have no significant difference, but /j/ has a significantly lower intensity than DAR and V2.

Based on historical accounts and descriptions, it is clear that DAR is a reflex of the proto-BIS **l* and **-d-*. Its distribution appears as an onset and a coda with /a/ or /u/ as a nucleus. Few examples, possibly lexically motivated, permit its operations alongside /i/. We posit that its velarization (whether from a palatal or a relateralized form) may have been triggered either independently or by another prestige variety. Physiological and perceptual restrictions nonetheless should have played a crucial facilitative role. Meanwhile, its relative infrequency in phonological inventories of Philippine-type languages may be explained by the Obligatory Contour Principle (McCarthy, 1986 in Bailey, 2020), which argues that a sequence of two identical features is susceptible to a high perceptual variability. DAR is a reflex of a coronal and dorsal, and their articulatory mechanisms are relatively close if not intertwined. This may explain the

[29] Prior to American introduction of public education in the 20th century, an extremely small portion of the population made of landed elites gained access to formal education.

diachronic instability (e.g. coalescence) or inability to stabilize, which may explain the **-d-* > /j/ > Ø/V: reflex in other BIS varieties such as Cebuan.

Spectrogram shapes of phonemes with nearly similar articulation such as Urhobo velars, and Spanish and Galician spirant approximants somewhat resemble those of DAR. However, its perceived reduced turbulence and other acoustic qualities (e.g. spectral shape) further provide evidence that the reflex is not a fricative. We concur with Zorc's reevaluzation that DAR is rather a velar approximant [ɰ] and therefore propose an updated chart of Akeanon consonants as seen below.

Table 25: Akeanon consonant inventory

	Bilabial	Alveolar	Post-Alveolar	Palatal	Velar	Labiovelar	Glottal
Stop	P b	t d			k g		ʔ
Nasal	m	n			ŋ		
Affricate		(ts) (dz)	(tʃ) (dʒ)				
Fricative	(f) (v)	s (z)	(ʃ)				h
Approximant				j	ɰ	w	
Tap		ɾ					
Lateral		l					

From this realization, there are two major issues that could be addressed in the future. First, the analysis relies on acoustic documentation. More thorough extrapolation of phonological environment with consideration to contrast, syllabicity, stress, pausing, and perceptual distance (e.g. Padgett, 2008), experimental or otherwise, is advisable to provide more comprehensive documentation. Ultrasound analysis of constriction and positioning is also ideal.

Second is to acknowledge the pedagogical implications of a revisited Akeanon phonology in orthographic and grammatical instruction. As far as orthography is concerned, there is no need to reappropriate the use of ⟨Ee⟩ which represents both the front vowel and the approximant. Looking for an alternative in computers would foremost be an added challenge; most widely available keyboards in the Philippines do not have accessible special characters or accents that would effectively and conveniently exemplify its phonetic property. The closest could be ⟨Jj⟩ whereby *baeay* would be written as *bajay*. However, this grapheme has long been used in many loanwords and proper nouns representing varying phonemes. This defeats the purpose if the goal is orthographic transparency. Nevertheless, there is a need to rectify existing texts describing the language, which would normally emphasize the phoneme as an important feature in distinguishing Akeanon from other Bisayan varieties and as something unique apart from Philippine languages in general. Current public Akeanon understanding treats [ɰ] as a vowel and is taught as such in many local schools. We

recommend that pedagogical approaches and instructional materials be reevaluated towards the more accurate phonetic character. This is not mere pedantry on phonology. Better awareness may have positive implications to grammatical instruction given that Akeanon, like other Philippine languages being strongly agglutinative, has a complex and diverse affix system.

References

Baart, J. (2010). *A field manual of acoustic phonetics*. SIL International.

Bateman, N. (2011). On the typology of palatalization. *Language and Linguistics Compass*, *5*(8), 588-602. https://dx.doi.org/10.1111/j.1749-818x.2011.00294.x

Bhat, D. N. S. (1978). A general study of palatalization. In J. H. Greenberg, C. A. Ferguson, & E. A. Moravcsik (Eds.), *Universals of human language* (Vol. 2, pp. 47-92). Stanford University Press.

Blust, R. (1999). Subgrouping, circularity and extinction: Some issues in Austronesian comparative linguistics. In E. Zeitoun & P. J.-K. Li (Eds.), *Selected papers from the Eighth International Conference on Austronesian Linguistics* (pp. 1-54). Academia Sinica.

Blust, R. A. (2005). The linguistic microhistory of the Philippines. In H.-C. Liao, & C. R. G. Rubino (Eds.), Current issues in Philippine linguistics: *Parangal kay Lawrence A. Reid* (pp. 31-68). Linguistic Society of the Philippines & SIL Philippines.

Blust, R. A. (2019). The resurrection of proto-Philippines. *Oceanic Linguistics*, *58*(2), 153-256. https://doi.org/10.1353%2Fol.2019.0008

Browman, C. P., & Goldstein, L. (1995). Gestural syllable position effects in American English. In F. Bell-Berti, & L. J. Raphael (Eds.), *Producing speech: Contemporary issues* (pp. 19-34). American Institute of Physics.

Bybee, J. (2015). *Language change*. Cambridge University Press.

Bybee, J., & Easterday, S. (2019). Consonant strengthening: A crosslinguistic survey and articulatory proposal. *Linguistic Typology*, *23*(2), 263-302. https://doi.org/10.1515/lingty-2019-0015

Conant, C. E. (1911). The RGH law in Philippine languages. *Journal of the American Oriental Society*, *31*(1), 70-85. https://doi.org/10.2307/3087491

Conant, C. E. (1912). The Pepet law in Philippine languages. *Anthropos*, *7*(4), 920-956.

de la Cruz, B. A., & Zorc, R. D. (1968). *A study of the Aklanon dialect. Volume one: Grammar*. Peace Corps.

de Méntrida, A. (1841). *Diccionario de la lengua bisaya hiligueina y haraya de la isla de Panay*. Imprenta de D. Manuel y de D. Felis S. Dayot.

Eberhard, D. M., Simons, G. F., & Fennig, C. D. (Eds.). (2022). *Ethnologue: Languages of the world* (24th ed.) SIL International.

Flynn, D. M. (2012). Vocalic dorsality in Articulator Theory. *School of Languages, Linguistics, Literatures and Cultures*. University of Calgary.

French, R. A. (1979). The phonology of Romblomanon [Manuscript]. *SIL International*. https://www.sil.org/resources/archives/43456

Gooskens, C. (2005). Travel time as a predictor of linguistic distance. *Dialectologia et Geolinguistica*, *13*, 38-62. http://dx.doi.org/10.1515/dig.2005.2005.13.38

Jaggers, Z. S. (2018). Evidence and characterization of a glide-vowel distinction in American English. *Laboratory Phonology*, *9*(1), 1-27. https://doi.org/10.5334/labphon.36

Jeszenszky, P., Hikosaka, Y., Imamura, S., & Yano, K. (2019). Japanese lexical variation explained by spatial contact patterns. *International Journal of Geo-Information*, *8*. http://dx.doi.org/10.3390/ijgi8090400

Luce, P. A., & Charles-Luce, J. (1985). Contextual effects on vowel duration, closure duration, and the consonant/vowel ratio in speech production. *Journal of the Acoustic Society of America*, *78*(6), 1949-1957.

McFarland, C. D. (1975). *The dialects of the Bikol area* [Doctoral dissertation]. Yale University.

Maddieson, I., & Emmorey, K. (1985). Relationship between semivowels and vowels: Cross-linguistic investigations of acoustic difference and coarticulation. *Phonetica*, *42*, 163-174. https://doi.org/10.1159/000261748

Martínez-Celdrán, E. (2004). Problems in the classification of approximants. *Journal of the International Phonetic Association*, *34*(2), 201-210. https://doi.org/10.1017%2FS0025100304001732

Mase, Y. (1999). On dialect consciousness: Dialect characteristics given by speakers. In D. R. Preston (Ed.), *Handbook of perceptual dialectology* (Vol. 1, pp. 101-114). John Benjamins.

Monteclaro, P. A. (1907). *Maragtas kon sayuron (historia) sg pulô nga Panay kag sang mga pumuloyo, tubtub sg pag-abut sg mga taga Borneo nga amo ang ginhalinan sg mga bisaya, kag sg pag-abut sg mga katsila / Ginsulat ni gino-ong Pedro Alcantara Monteclaro pumuluyo sa Miag-ao, Ilong-ilong, siling sg iya nabasahan sa mga tolon-an nga iya na-ayop sa mga tigulang*.

Montgomery, C., & Stoeckle, P. (2013). Geographic information systems and perceptual dialectology: A method for processing draw-a-map data. *Journal of Linguistic Geography*, *1*, 52-85. http://dx.doi.org/10.1017/jlg.2013.4

Moosmüller, S., Schmid, C., & Kasess, C. H. (2015). Alveolar and velarized laterals in Albanian and in the Viennese dialect. *Language and Speech*, *59*(4), 488-515. https://dx.doi.org/10.1177/0023830915615375

Nagle, C. (2014). *A longitudinal study on the role of lexical stress and motivation in the perception and production of L2 Spanish stop consonants* [Doctoral dissertation, Georgetown University]. DigitalGeorgetown. https://repository.library.georgetown.edu/handle/10822/761009

National Statistics Office. (2002). *Aklan: Population growth rate up to 2.05 percent in 2000 (Results from the 2000 census of population and Housing, NSO)*. Philippine Statistics Authority. http://web0.psa.gov.ph/content/aklanpopulation-growth-rate-205-percent-2000-results-2000-census-population-andhousing-nso

Nearey, T. M., & Rochet, B. L. (1994). Effects of place of articulation and vowel context on VOT production and perception of French and English stops. *Journal of the International Phonetic Association*, *24*(1), 1-18.

Odden, D. (2015). Bantu phonology. *Oxford handbooks online*. Oxford University Press. https://dx.doi.org/10.1093/oxfordhb/9780199935345.013.59

Ohala, J. J. (1993). The phonetics of sound change. In C. Jones (Ed.), *Historical linguistics: Problems and perrspectives* (pp. 237-278). Longman.

Padgett, J. (2008). Glides, vowels, and features. *Lingua*, *118*, 1937-1955.

Parrell, B., & Narayanan, S. (2018). Explaining coronal reduction: Prosodic structure and articulatory posture. *Phonetica*, *75*(2), 151-181. https://dx.doi.org/10.1159%2F000481099

Pawley, A., & Ross, M. D. (1995). The prehistory of Oceanic languages: A current view. In P. Bellwood, J. Fox, & D. Tryon (Eds.), *The Austronesians: Historical and comparative perspectives* (pp. 39-74). Australian National University.

Paz, C. J. (1981). *A reconstruction of proto-Philippine phonemes and morphemes*. University of the Philippines.

Pérez, A. (1902). *Igorrotes: Estudio geográfico y etnográfico sobre algunos distritos del norte de Luzon*. El Mercantil.

Reid, L. A. (1982). The demise of proto-Philippines. In A. Halim, L. Carrington, & S. Wurm (Eds.), *Papers from the Third International Conference on Austronesian Linguistics, volume 2: Tracking the travellers* (pp. 201-216). Australian National University.

Reid, L. A. (2018). Modeling the linguistic situation in the Philippines. *Senri Ethological Studies*, *98*, 91-105. http://doi.org/10.15021/00009006

Rentillo, P. (2018). Preliminary dialectology of Aklanon [Conference presentaton]. 2018 Linguistic Society of the Philippines - National Conference and General Meeting, Balanga, Philippines.

Rolle, N. (2013). Phonetics and phonology of Urhobo. *UC Berkeley Phonology Lab Annual Report*, *9*(9), 281-326. https://escholarship.org/content/qt2q6685k5/qt2q6685k5.pdf

Ross, M. D. (1988). *Proto Oceanic and the Austronesian languages of western Melanesia*. Pacific Linguistics.

Rubino, C. (2006). Utudnon, an undescribed language of Lyete. In H.-C. Liao, & C. R. G. Rubino (Eds.), *Current issues in Philippine linguistics and anthropology: Parangal kay Lawrence A. Reid* (pp. 306-337). Linguistic Society of the Philippines & SIL Philippines.

Salas Reyes, V., Zorc, R. D., & Prado, N. L. (1969). *A Study of the Aklanon dialect. Volume two: Dictionary (of root words and derivations)*. Peace Corps.

Santiago, V. (2018, October 25). Some notes on Porohanon, a Bisayan variety spoken in the Camotes islands, Cebu [Conference presentation]. 1st College of Social Sciences and Philosophy Graduate Students Association (CSSP GSA) Brown Bag Session, University of the Philippines Diliman, Quezon City, the Philippines.

Scheerer, O. (1920). Über Einen Bemerkenswerten L-Stellvertreter im Dialekt von Aklan auf der Insel Panay (Filipinen) [On the remarkable L-variant in the dialect of Aklan in the

island of Panay (Philippines)]. *Zeitschrift für Eingeborenen-Sprachen* [Journal of Native Languages], *11*, 241-259.

Shaw, J. A., Caringan, C., Agostini, T. G., Mailhammer, R., Harvey, M., & Derrick, D. (2020). Phonological contrast and phonetic variation: The case of velars in Iwaidja. *Language*, *96*(3), 578-617. https://doi.org/10.1353/lan.2020.0042

Staroverov, P., & Tebay, S. E. (2021). Velar lateral allophony in Mee (Ekari*). Journal of the International Phonetic Association*, 1-31.

Weglarski, A., Sewall, A., Schiavetti, N., Metz, D. E., & Whitehead, R. L. (2000). Effect of vowel environment on consonant duration: An extension of normative data to adult contextual speech. *Journal of Communication Disorders*, *1*(1), 1-10. https://doi.org/10.1016/s0021-9924(99)00022-2

Wolfenden, E. (1975). A description of Hiligaynon syntax. In I. Davis (ed.), *Linguistics and related fields*, *46*. Summer Institute of Linguistics.

Wolff, J. U. (1967). History of the dialect of the Camotes Islands, Philippines, and the spread of Cebuano Bisayan. *Oceanic Linguistics*, *6*(2), 63-79.

Zorc, R. D. (2021). Axis relationships in the Philippines – When traditional subgrouping falls short [Conference presentaton]. 14th Philippine Linguistics Congress, Facebook Live.

Zorc, R. D. (2005). Aklanon tag- and extra-systemic linguistic phenomena. In H.-C. Liao & C. Rubino (Eds.), *Current issues in Philippine linguistics and anthropology: Parangal kay Lawrence A. Reid* (pp. 124-135). Summer Institute of Linguistics & Linguistic Society of the Philippines.

Zorc, R. D. (1995). Aklanon. In D. T. Tryon (Ed.), *Comparative Austronesian dictionary: An introduction to Austronesian studies* (pp. 343-350). De Gruyter Mouton.

Zorc, D. P. (1977). *Bisayan dialects of the Philippines: Subgrouping and reconstruction*. Australian National University.

Appendix A

List of words for the indirect elicitation task

1. eawas
2. kulintas
3. eambong
4. eoha
5. guwa
6. eomos
7. bueak
8. baeas
9. tueog
10. Malay
11. taeong
12. puea
13. saea
14. kuring
15. ueo
16. waeo
17. bakae
18. lima
19. kurae
20. katoe
21. relo
22. busoe

Appendix B

List of words for the direct elicitation task

1. pispis
2. baeay
3. hambae
4. eapok
5. igkampod
6. kaeayo
7. waea
8. panit
9. haboe
10. eopad
11. ayam
12. sueod
13. napueo
14. suba