Postlabial raising and paradigmatic leveling in A'ingae: A diachronic study from the field

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Overview

- A'ingae (or Cofán, ISO 639-3: con): an understudied and endangered Amazonian isolate

  FOCUS: variation between the diphthongs *ai* and *ii*

  – by comparing data reported in Borman's (1976) dictionary (B76)
  – with contemporary productions collected in the author's fieldwork

- in B76: *ai* does not appear after labial consonants $f, p^h, p, {}^mb, m, v$ (henceforth P);[1] the distribution of *ii* is not restricted

  POSTLABIAL RAISING (PLR): $*ai \rightarrow ii / P\_$

- some modern productions: postlabial *ai* is allowed when the diphthong crosses a morpheme boundary (Pa+i)

  PARADIGM LEVELING: $a : ai :: Pa : \boxed{Pai}$

- new productively-formed words: PLR is speaker-specific, i.e. it has been variably grammaticalized

- post-labial raising lacks phonetic motivation; result of two changes:
  1. POSTLABIAL ROUNDING: $*ai \rightarrow *ui / P\_$
  2. UNCONDITIONED UNROUNDING: $*u \rightarrow i$

- philological methods and migration history make sense of contemporary variation in an isolate with a short history of literacy

Background

- A'ingae is an endangered isolate spoken by ca. 1,500 Cofán people in Ecuadorian and Colombian Amazonia

- ca. 16th century, the Cofán used to live in the Andes (Lucitante, 2019)

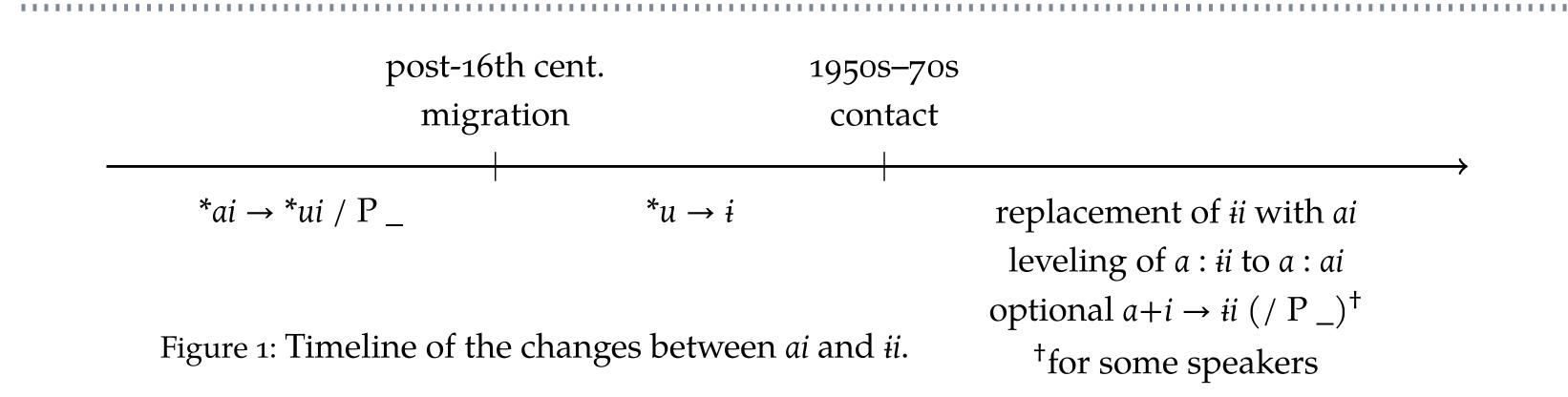- many are bilingual with Kichwa and/or Spanish (Dąbkowski, 2021)

Methodology

- comparing the distribution of *ai* ~ *ii* between B76 and three contemporary speakers: JXM (36 y.o.), RGQ (34), and SIA (23)

- B76 collected data since 1954; differences between B76 and contemporary A'ingae = language change in the past 50~70 years

- each consultant was asked
  – for judgments on realizations with *ai* and *ii*,
  – if they were aware of variation in the speech community

- elicitation was chosen over more naturalistic methods due to the rarity of relevant forms in uncontrolled discourse

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[1] The only exception is 'incline,' reported by B76 with two realizations: $p^h\tilde{a}\tilde{\imath}\tilde{n}\tilde{a}$ and $p^h\tilde{\imath}\tilde{\imath}\tilde{n}\tilde{a}$ (2f). All three consultants accept $p^h\tilde{\imath}\tilde{\imath}\tilde{n}\tilde{a}$. RGQ and SIA note that other speakers could use $p^h\tilde{a}\tilde{\imath}\tilde{n}\tilde{a}$.

Data set

	SOURCE/ROOT	B76	JXM	RGQ	SIA
(1)	Diphthong *ii* appears after velars, coronals, and labials				
a.		k^hiivo 'catfish'	k^hiivo	k^hiivo	k^hiivo
b.		kiiʔ- 'drink'	kiiʔ-	kiiʔ-	kiiʔ-
c.		siiʔvo 'twist'	siiʔvo	siiʔvo	siiʔvo
d.		fi^ndii 'sweep'	fi^ndii	fi^ndii	fi^ndii
e.		fiite 'help'	fiite	fiite	fiite
f.		opii 'cover up'	opii	opii	opii
g.		viiki 'calm down'	viiki	viiki	viiki
(2)	Diphthong *ai* appears after velars and coronals, but not labials				
a.		^{n}gãĩnã 'scatter'	^{n}gãĩnã	^{n}gãĩnã	^{n}gãĩnã
b.		otʃ^{h}ai 'smack'	otʃ^{h}ai	otʃ^{h}ai	otʃ^{h}ai
c.		^{n}dʒai 'sit'	^{n}dʒai	^{n}dʒai	^{n}dʒai
d.		ts^{h}ai 'punch'	ts^{h}ai	ts^{h}ai	ts^{h}ai
e.		nãĩʔ- 'river'	nãĩʔ-	nãĩʔ-	nãĩʔ-
f.	(an exception →)	$p^h\tilde{a}\tilde{\imath}\tilde{n}\tilde{a}, p^h\tilde{\imath}\tilde{\imath}\tilde{n}\tilde{a}$ 'incline'	$p^h\tilde{\imath}\tilde{\imath}\tilde{n}\tilde{a}$	@$p^h\tilde{\imath}\tilde{\imath}\tilde{n}\tilde{a}$	@$p^h\tilde{\imath}\tilde{\imath}\tilde{n}\tilde{a}$
(3)	In loan words, postlabial *ai* is adapted as *ii* or replaced with *ai*				
a.	airo (Secoya)	airo 'mountain'	airo	—	—
b.	waita (Kichwa)	(si)miita 'vanilla'	(si)miita	—	—
c.	waita (Kichwa)	(rosa)viita 'marigold'	@(rosa)viita, (rosa)vaita	*(rosa)viita, (rosa)vaita	(rosa)viita, @(rosa)vaita
d.	paitʃe (Spanish)	paitsi, piitsi 'paiche'	paitsi	paitsi	paitsi
(4)	In conventionalized forms derived with *-ite* PRD, postlabial *ai* changed to *ii*, and then was leveled to *ai* for som[e]				
a.	na 'fruit'	naite 'fruit season'	naite	naite	naite
b.	sãfã 'San Juan'	sãfiite 'winter'	sãfiite, sãfãite	*sãfiite, sãfãite	@sãfiite, sãfãite
c.	taʔva 'cotton'	taviite 'Aug–Nov'	@taviite, tavaite	tavaite	taviite, @tavaite
d.	koehefa 'sun ray'	koehefiite 'summer'	koehefiite	koehefaite	koehefiite, @koehefaite
e.	tʃarapa 'turtle'	tʃarapiite 'Dec–Jan'	@tʃarapiite, tʃarapaite	*tʃarapiite, tʃarapaite	tʃarapiite, @tʃarapaite
f.	oʔma 'peach palm'	omiite 'Feb–Apr'	@omiite, omaite	*omiite, omaite	@oʔmiite, oʔmaite
(5)	In fully compositional forms derived with *-ite* PRD, the availability of raising depends on the speaker				
a.	¬Pa-final roots				
i.	fetʰa 'open'		fetʰaite	fetʰaite	fetʰaite
ii.	ʃaka 'miss'		ʃakaite	ʃakaite	ʃakaite
iii.	tsõsĩnã 'ear'		tsõsĩnãite	tsõsĩnãite, *@tsõsĩnĩite	tsõsĩnãite
iv.	ŋgasorĩnã 'gasolina'		ŋgasorĩnãite	ŋgasorĩnãite, ^{n}gasorĩnĩite	ŋgasorĩnãite
v.	kʰaʔja 'swim'		kʰaʔjaite	kʰaʔjaite, *@kʰajiite	kʰaʔjaite
b.	Pa-final roots				
i.	ʃakapa 'debt'		ʃakapaite	ʃakapaite, @ʃakapiite	ʃakapaite, ʃakapiite
ii.	sẽmã 'work'		sẽmãite	sẽmãite, *sẽmĩite	sẽmãite, sẽmĩite
iii.	seheʔpa 'medicine'		sehepaite	seheʔpaite, seheʔpiite	seheʔpaite, seheʔpiite
iv.	ajaʔfa 'language'		ajafaite	ajaʔfaite, ajaʔfiite	ajaʔfaite, ajaʔfiite
v.	tʃava 'buy'		tʃavaite	tʃavaite, @tʃaviite	tʃavaite, tʃaviite
vi.	jajaʔpa 'lard'		jajaʔpaite	jajaʔpaite, @jajaʔpiite	jajaʔpaite, jajaʔpiite

Timeline of the changes between *ai* and *ii*

Figure 1: Timeline of the changes between *ai* and *ii*.

post-16th cent. migration — 1950s–70s contact

$*ai \rightarrow *ui / P\_$ — $*u \rightarrow i$ — replacement of *ii* with *ai* — leveling of $a : ii$ to $a : ai$ — optional $a+i \rightarrow ii$ (/ P_)†

†for some speakers

Legend

no superscript indicates the speaker's only or preferred realization
@ marks a dispreferred realization, but available to other speakers
* marks a realization identified as archaic
— marks unrecognized items
___ marks contemporary judgements which differ from B76

Discussion

NATIVE ROOTS the distribution of *ii* not restricted: *ii* can appear after velars (1a-b), coronals (1c-d), and labials (1e-g)

- the distribution of *ai* is restricted: *ai* can appear after after velars (2a) and coronals (2b-e), but sequences P*ai* are missing

PROPOSAL: $*ai \rightarrow ii / P\_$ (a diachronic change of postlabial raising)

BORROWINGS a few borrowings where *ai* appears after a labial in the donor language corroborate PLR (3)

- in B76, postlabial *ai* is adapted as *ii* (3b-d); the borrowings must have taken place before or during PLR

- contemporary speakers recognize forms with *ai* as well as *ii*

PROPOSAL: *vaita* replaced *viita* and *paitsi* replaced *piitsi* to reflect the pronunciation of the source language more accurately

– plausible: many Cofán speak Kichwa/Spanish (Dąbkowski, 2021)

CONVENTIONALIZED *ITE*-FORMS (SEASON NAMES) the periodic suffix *-ite* PRD appears in conventional season names (4)

- for P*a*-final roots, B76 reports PLR for all the season names (4b-f)
- contemporary consultants recognize forms with and without PLR

PROPOSAL: the forms with PLR (P*ii*) are older, whereas the forms without PLR (P*ai*) are analogical innovations (*na* : *naite* :: *tʃarapa* : *tʃarapaite*)

PRODUCTIVE *ITE*-FORMATIONS *-ite* PRD productively derives time period nouns and adverbials (5); consultants show different patterns:

- JXM did not acquire PLR as a productive phonological rule
- SIA acquired PLR as an optional rule: $a+i \rightarrow ii / P\_$ (optional)
- RGQ generalized the raising beyond P_: $a+i \rightarrow ii$ (optional)

Analysis

- post-labial raising lacks phonetic motivation; result of two changes:

1. POSTLABIAL ROUNDING: $*ai \rightarrow *ui / P\_$

REASON: the pressure to round postlabial vowels is independently attested in A'ingae: $ae \rightarrow oe / P\_$ (optional) (Dąbkowski, ms.)

2. UNCONDITIONED UNROUNDING: $*u \rightarrow i$

REASON: *u* is common in Andean inventories and *i* is common in the Amazon (Moran et al., 2019); a plausible contact-induced shift