

# **“Linking” morphology in Tupían, Cariban, and Macro-Jê languages**

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- 1 Linking morphology and the TuCajê hypothesis
- 2 Tupí
- 3 Carib
- 4 Macro-Jê
- 5 TuCajê revisited

# TuCajê

- suggested long distance relationship
- Tupí and Carib: Rodrigues (1985)
- Tupí, Carib, and Jê: Rodrigues (2000, 2009)
- most suggestive evidence is **linking morphology**

# The phenomenon

occurs with

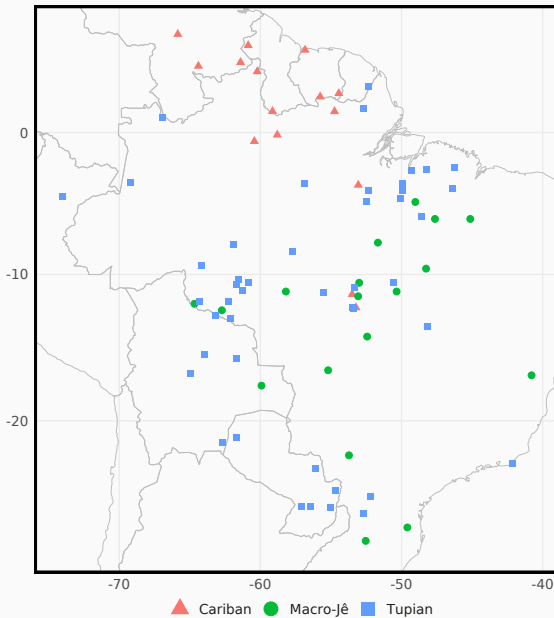
1. possessor – possessum
2. object – verb<sub>TR</sub>
3. subject – verb<sub>INTR</sub>
4. complement – postposition

# An example

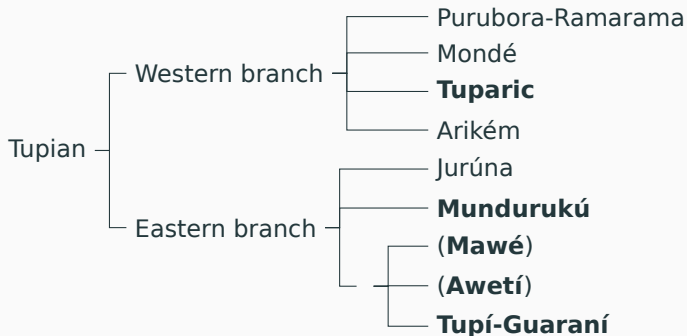
(1) Tapirapé (Tupí-Guaraní) (Neiva Praça 2007: 57, 33)

- a. **t-ãʔir-a**  
 3-son.of.man-REF  
 ‘his son’
- b. **wãriniãʔi r-ãʔir-a**  
 W.                   LK-SON-REF  
 ‘the son of Wãriniãy’i’

# Languages under consideration



# Linking morphology in Tupían



# Tupí-Guaraní

Jensen (1998: 501):

- linking morphology reconstructible for Proto-Tupí-Guaraní in nouns, transitive and intransitive verbs, and postpositions
- also occurs with first and second person prefixes / proclitics



# Proto-Tupí-Guaraní linking prefixes (Jensen 1998)

	Class A (mostly _C)	Class B (mostly _V)
Non-contiguous	*j-	*tʃ̃-/ *t-
Contiguous	*∅	*r-

# Proto-Tupí-Guaraní person markers (Jensen 1998)

	Set 1	<b>Set 2</b>	Set 3	Set 4
1SG	*a-	* <b>t̃je-</b>	*wi-	
1EXCL	*oro-	* <b>ore-</b>	*oro-	
1INCL	*ja-	* <b>jane-</b>	*jere-	
2SG	*ere-	* <b>ne-</b>	*e-	*opo-
2PL	*pe-	* <b>pe-</b>	*peje-	*opo-
3	*o-	*i-, *c-/*t-	*o-	

# Mawé: linking morphology?

(2) Mawé (Meira & Drude 2013: 4)

a. João s-up

J. LK-semen

‘João’s semen’

b. h-up

3-semen

‘his semen’

# Mawé: linking morphology?

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## Mawé *up* 'semen'

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1SG	<i>u-h-up</i>
1EXCL	<i>uru-s-up</i>
1INCL	<i>a-h-up</i>
2SG	<i>e-s-up</i>
2PL	<i>e-h-up</i>
3	<i>h-up</i>
NP	NP <i>s-up</i>

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(Meira & Drude 2013)

# Proto-Tupí-Guaraní person markers

	Set 1	Set 2	<b>Set 3</b>	Set 4
1SG	*a-	*t̃je-	*wi-	
1EXCL	*oro-	*ore-	* <b>oro-</b>	
1INCL	*ja-	*jane-	*jere-	
2SG	*ere-	*ne-	* <b>e-</b>	*opo-
2PL	*pe-	*pe-	*peje-	*opo-
3	*o-	*i-, *t̃s-/ *t-	*o-	

(Jensen 1998: 498)

# Linking morphology in Mawé and Awetí?

- Different patterning of “linking” morphology in Mawé (and Awetí) as compared to PTG
- The Mawé and Awetí markers develop into coreferent markers in PTG, which do not take linking morphology, but which do have allomorphy that can partly be traced back to consonant alternations in Mawé

# Development of linking marker \*T according to Cabral et al. (2013)

**Table 1:** Reconstructed PT forms of linking markers according to Rodrigues & Cabral (2012)

	Class A	Class B
Non-contiguous	*i-	*C-
Contiguous	*∅	*tʔ-

Developments from PT linker \*\*tʔ- in Mawé:

- \*\*tʔ- > \*tʃʔ- > h- (after /i/)
- \*\*tʔ- > \*ts- > s- / ∅ (other environments)

# Mundurukú

	Class A	Class B
Non-contiguous	<i>i-</i>	<i>t-</i>
Contiguous	∅	<i>d-</i>

(3) Mundurukú (Gomes 2006: 32)

a. o-**d**-ukʔa  
 1SG-LK-house  
 'my house'

c. t-ukʔa  
 3-house  
 'his house'

b. biboj **d**-ukʔa  
 B. LK-house  
 'Biboy's house'



# Tuparic

**Table 2:** Root classes in Tuparí

	A	B	C
Non-contiguous	<i>s-</i>	<i>i-</i>	<i>i-</i>
Contiguous	∅	∅	<i>h-</i>

“But there exist cases in Tuparí where the alternation between *h-* and ∅ can be triggered on phonological grounds alone” (Singerman 2018: 24)

# Makurap: linker $\widehat{tj}$ - versus third person $t$ -

(4) Makuráp (Rodrigues & Cabral 2012: 512)

a. mario  $\widehat{tj}$ -ek-et      tuk-ŋ-a

M.      LK-house-GEN build-EFF-IPFV

‘He (someone) has built Mario’s house.’

b. mario  $t$ -ek-et      tuk-ŋ-a

M.      3-house-GEN build-EFF-IPFV

‘Mario has built someone’s house.’

# Linking morphology in Proto-Tupí?

## Scenarios:

1. Innovation in Proto-Tupí-Guaraní: critical review of linking morphology in Mundurukú and Tuparic
2. Conservation in Proto-Tupí-Guaraní, Mundurukú, Tuparic, loss outside: what happened in the transition from Proto Mawetí-Guaraní to Proto TG?

# Proto-Cariban

- linking morphology reconstructible for Proto-Cariban (Meira, Gildea, et al. 2010)
- less time depth than Tupían, better reconstructible
- overt linking morphology has disappeared in many modern languages

# Umlaut

- many Cariban languages show alternations  $\text{ə} \sim \text{e}$  or  $\text{o} \sim \text{e}$  in non-contiguous vs contiguous contexts

(5) Arara (de Souza 2010: 16)      (6) Trió (Meira 1999: 74)

a. NP emtʃi-n  
daughter-PERT  
'NP's daughter'

b. k-omtʃi-n  
1+2-daughter-PERT  
'our daughter'

a. NP eemi  
daughter  
'NP's daughter'

b. k-əəmi  
1+2-daughter  
'our daughter'

## Umlaut and the linking morpheme \*j-

- some languages show a linking morpheme *j-* in these contiguous contexts:

(7) Waiwai (Hawkins 1998: 45)

tʃaramtʃa j-emsɨ-rɨ                    ɲ-eti-jo

C.                    LK-daughter-PERT 3-DETRZ-scald

‘Charamcha’s daughter scalded herself.’

## Umlaut and the linking morpheme \*j-

(8) Panare (T. E. Payne & D. L. Payne 2013: 202)

toman **j**-ama-jah                      kən

T.              LK-knock.down-REC ANIM.DIST

‘S/he knocked Tom down.’

- Umlaut of initial \*ɣ → \*e with NP arguments is explained as trace of Proto-Cariban linker \*j- (Meira, Gildea, et al. 2010)

# Proto-Cariban third person and linking markers

**(a) Nouns** (Meira, Gildea, et al. 2010: 489)

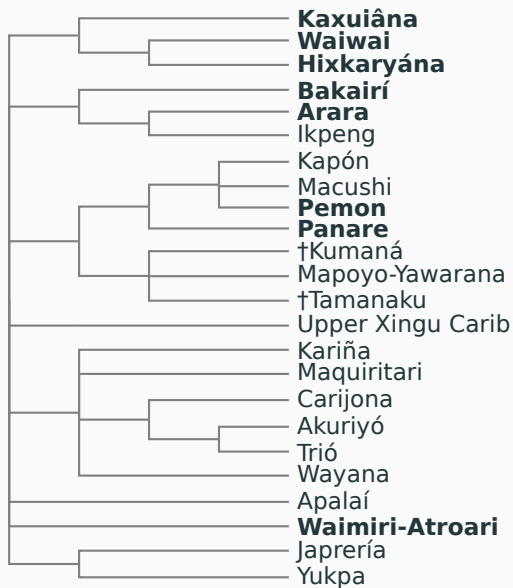
	<u>_V</u>	<u>_C</u>
non-contiguous	*i-	*i-
contiguous	*j-	*∅

**(b) Verbs** (Meira, Gildea, et al. 2010: 495)

	<u>_V</u>	<u>_C</u>
non-contiguous	*n-i-	*n-i-
contiguous	*j-	(*∅)



# Branches with linking morphology



# Linking morphology disappearing in Arara-Ikpeng

(9) Arara (Alves 2017: 117,147): *j*- only C\_

- a. tohk.tohk.tohk ewe            itpɪn            **j**-agu-nanɾi-ŋmo  
 IDEO.hit?            murumuru seed/stone LK-eat.solid-IPFV-PL

‘They were all eating murumuru seeds.’

- b. tɨ-de            ereŋmi-li padua-p  
 COR-mother kill-HOD    armadillo.sp-ADJZ

‘He killed his mother, transformed into a giant armadillo.’

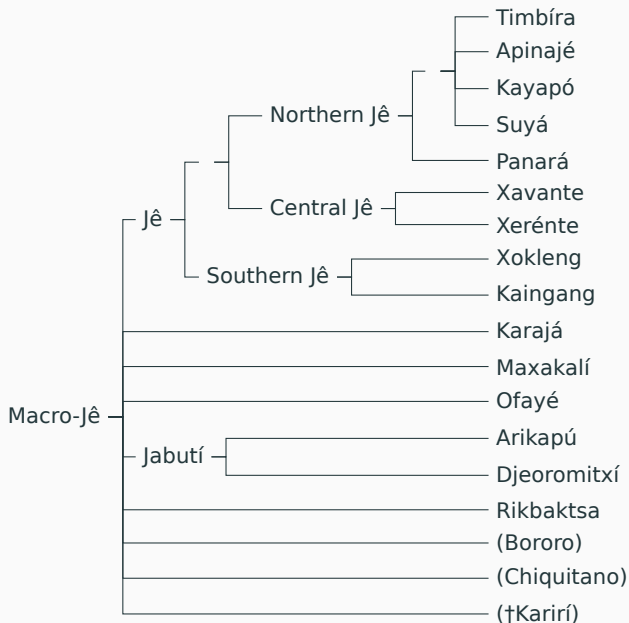
# Linking morphology disappearing in Arara-Ikpeng

- (10) Ikpeng (Pachêco 2001: 162): *j-* is gone  
ikpenŋ ukutpot eneŋ-po-lĩ  
I. photo see-CAUS-REC  
'Photos of Ikpeng he showed.'

## Linking morphology in Carib?

- \*j- ‘LK’ reconstructible to Proto-Cariban for transitive verbs, nouns, and postpositions
- also combines with 1 and 2 person markers (and \*uku ‘1+2’, but not \*k- ‘1+2’)
- overt reflex of \*j- lost in most daughter languages
- umlaut with contiguous NP remains in many languages

# Macro-Jê



# Linking morphology in Northern Jê

(11) Suyá (Northern Jê) (dos Santos 1997: 131)

a. i-ɾɔ      hwĩŋgrɔ   **j**-akɫɫɫ   kere  
 1-POSTP   firewood   1K-cut   NEG

‘I did not cut firewood.’

b. i-ɾɔ      **s**-akɫɫɫ   kere  
 1-POSTP   3-cut   NEG

‘I did not cut her.’

## Northern Jê: Alternation with zero

(12) Kayapó (Northern Jê) (Costa 2015: 138, 139)

- a. mẽnirɛ **j**-ape  
woman ɫK-mouth  
'the woman's mouth'
  
- b. **∅**-ape  
3-mouth  
'her mouth'

## Northern Jê: Consonant alternation?

- Salanova (2009, 2011): synchronic analysis of Jê linking prefixes as morphophonological alternation between different root-initial consonants (or zero)
- Nikulin (2016: 168) reconstructs alternation between contiguous and non-contiguous allomorphs of roots in Proto Northern Jê
- no occurrence of roots without the “prefixes”



# Northern Jê: Consonant alternation?

Proto Northern Jê	Timbira	Panará	Kayapó	Apinajé	Suyá
*c	<i>h</i> (*cw → w)	<i>s</i>	ʔ/∅	ʔ/∅	<i>s</i>
*j	<i>j</i>	<i>j</i>	<i>j</i>	<i>j</i>	<i>j</i>
*ɟ	<i>t͡ʃ</i>	<i>s</i>	<i>ʒ</i>	<i>t͡ʃ</i>	<i>t</i>
*ŋ	<i>j</i>	<i>j</i>	<i>ɲ</i>	<i>ɲ</i>	<i>ɲ</i>

Proto Northern Jê	Timbira	Panará	Kayapó	Apinajé	Suyá
*cwa ‘tooth’	<i>wa</i>	<i>sua</i>	<i>wa</i>	<i>wa</i>	<i>swa</i>
*ɟwa	<i>t͡ʃwa</i>	<i>sua</i>	<i>ʒwa</i>	<i>t͡ʃwa</i>	<i>twa</i>
*carkwa ‘mouth’	<i>harkwa</i>	<i>sakoa</i>	<i>ape</i>	<i>akwa</i>	<i>sajkwa</i>
*jarkwa	<i>jarkwa</i>	<i>jakoa</i>	<i>jape</i>	<i>akwa</i>	<i>jajkwa</i>
*cõt(i) ‘sleep.NONF’	<i>hõt</i>	<i>sõti</i>	<i>õt</i>	<i>õt</i>	<i>sõn</i>
*nõt	<i>jõt</i>	ʔ	<i>nõt</i>	<i>nõt</i>	<i>ɲõn</i>

# Central Jê: Consonant alternation in Xavante

(Estevam 2011: 138)

	'throat'
1	<i>ĩ:-noʔre</i>
2	<i>a-sõʔre</i>
3	<i>ĩ-sõʔre</i>
'woman'	<i>piʔõ noʔre</i>

- Nikulin (2017: 153–154) reconstructs alternation between  $*\widehat{dZ}$  and  $*\widehat{tS}$  for Proto Central Jê
- distribution of voiced and voiceless allomorphs different than in Northern Jê

# Consonant alternation in ‘mouth’ in Proto Northern Jê and Proto Central Jê

	PNJ	Timbira	PCJ	Xavante	Xerénte
1	*i-jarkwa	i-jarkwa	*ĩĩ- $\widehat{d}$ zadawa	ĩĩ-zadawa	ĩ-zdawa
2	*a-jarkwa	a-jarkwa	*aj- $\widehat{t}$ sadawa	a-sadawa	ai-sdawa
3	*carkwa	harkwa	*ĩ- $\widehat{t}$ sadawa	ĩ-sadawa	ĩ-sdawa
NP	*jarkwa	jarkwa	* $\widehat{d}$ zadawa	zadawa	zdawa

# Southern Jê

- **Kaingang** and **Xokleng** show some roots with an alternation *\*ja-* ~ *\*ě-* (Jolkesky 2010: 226, 229)
- roots are few and far between, none of their Northern Jê cognates show *\*c* ~ *\*j/t/n*
- well-attested Northern Jê alternating roots like *\*carkwa/\*jarkwa* ‘mouth’ do not show the alternation in Southern Jê (*\*jědkiw*)

## Non-Jê Macro-Jê

- **Karajá** has *l-/d-* (LK) with 1 and NP, *d̥-* with 3,  $\emptyset$  with 2
- Jabutí: **Djeoromitxí** shows alternation  $r \sim h$   
(Van der Voort 2007: 142)
  - Alternation not reconstructed to Proto-Jabutí, internal development from  $*\widehat{tʃ}$  (2007: 150)
  - yet another distribution than in Northern and Southern Jê, not linking behavior

## Non-Jê Macro-Jê

- **Ofayé** claimed to have linking morphemes based on Gudschinsky (1974) by Rodrigues (2009), but newer and more complete description (das Dores de Oliveira 2006) shows no such patterns, only peripheral and non-morphological alternation  $f \sim h$
- **Bororo** (Crowell 1979: 207–209) shows phonologically conditioned epenthetic consonants after person prefixes; no linking behavior
- similar situation in **Chiquitano** (Sans 2013: 29), although conditioning of consonants is unclear

## Non-Jê Macro-Jê

- no (patterns reminiscent of) linking prefixes in **Maxakalí** and **Rikbaktsa**
- too little data on other non-Jê languages

# Linking morphology in Macro-Jê?

- Northern Jê: reconstructible consonant alternation triggered by NP
- Central Jê, Karajá, Djeoromitxí, Bororo, Chiquitano: different kinds of consonant alternations, different kinds of distribution
- no linking behavior reconstructible (not even for Proto-Jê)



# Linking morphology in the three families

- certainly reconstructible for PTG, possibly for PT
- reconstructible for Carib
- not reconstructible for Proto-(Macro-)Jê






# Possible explanations for similarities between languages

**GENETIC INHERITANCE:** At best possible for Tupían and Carib, but no clear support on the basis of sound correspondences.



**CONTACT-INDUCED:** Seems unlikely (except maybe between the Proto-Cariban and Proto-Tupí-Guaraní, but presumed homelands far away), lack of similar structures outside of the two families

**INDEPENDENT DEVELOPMENT:** Origins of linking morphology are likely nominal – reminiscent of construct states, which can develop independently (Creissels 2017)







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# Abbreviations

1	first person	IDEO	ideophone
1+2	first and second person	INCL	inclusive
2	second person	INTR	intransitive
3	third person	IPFV	imperfective
ADJZ	adjectivizer	LK	linker
ANIM	animate	NEG	negation
CAUS	causative	NONF	nonfinite
COR	coreference	PERT	pertensive
DETRZ	detransitivizer	PL	plural
DIST	distal	POSTP	postposition
EFF	effective	REC	recent past
EXCL	exclusive	REF	referential
GEN	genitive	SG	singular
HOD	hodiernal past	TR	transitive

# Development of \*T from PMATG to PTG according to Meira & Drude (2013)

PMATG		Mawé	Awetí	PTG
*jT	>	h	t-	*c-
*iT	>	h	t-	*t-
[*T...]	>	s	t-	*t-
[*NP *T...]	>	s	∅	*r-
other *T	>	s	∅	*∅

# Development of \*T from PMATG to PTG according to Meira & Drude (2013)

STAGE I (PMATG) \*T-initial root

STAGE II (Mawé) Differential phonological effects triggered by phonological context

STAGE III (Awetí) Reparsing of initial consonants as parts of prefixes

STAGE IV (PTG) Reinterpretation of the person markers as coreferential markers (with allomorphy) and emergence of new set of person prefixes (with contiguity marking)

# Contexts

- different contexts in which LK can occur:
  1. nouns
    - Hixkaryána, Waiwai, Pemon, Panare, Arara, Waimiri-Atroari

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  1. nouns
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  3. Set I intransitive verbs
    - –

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  1. nouns
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  3. Set I intransitive verbs
  4. Set II transitive verbs (innovated from deverbal forms)
    - Hixkaryána, Waiwai, Panare, Waimiri-Atroari
  5. Set II intransitive verbs
    - Hixkaryána, Waiwai

# Contexts

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  4. Set II transitive verbs (innovated from deverbal forms)
  5. Set II intransitive verbs
  6. postpositions
    - Hixkaryána, Waiwai, Pemon, Panare

# Consonant alternation in Djeoromitxí (Macro-Jê, Jabutí)

	'tired'
1	<i>hɥ hamə</i>
2	<i>aɗ̃zɛ a-ramə</i>
3	<i>hamə</i>
NP	?

(Van der Voort 2007: 142)