Irregular first person inflections in Cariban: converging factors for morphological (dis-)similarity

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Proto-Cariban Set I (main clause) person markers

A/P	1	2	1+2	3
1		*k-		*t(i)-
2	*k-			*m(i)-
1+2				*kɨt(i)-
3	*u(j)-	*ə(j)-	*k-	*n(i)-

(j)-
(j)-
(i)-

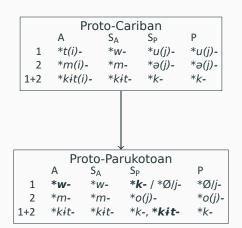
The split-S system

- conserved in many modern languages
- P-markers identical to Sp
- A-markers = $S_A + *i$ (except first person)
- no semantic basis (illustration)

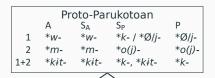
What conditions the split? (Meira 2000)

- not explicable by (non)activities, (non-)agency, (in-)animacy, Aktionsart
- · purely lexical, semantically arbitrary
- but: vast majority of S_A verbs have reflex of detransitivizer
 *ət(e)-/e-
- derivational prefix attaching mostly to transitive verbs, with various semantics (illustration)

Example for person marker extensions: Parukotoan (Gildea 1998: 94)



Example for person marker extensions: Parukotoan



Werikyana
A S_A S_P P
1 w- w- k-, Ø/j- Ø/j2 m- m- o- o1+2 kit- kit- k-/ kit- k-

			7			
Proto-Waiwaian						
	Α	S_A	S_P	Р		
1	*W-	*k-	*k-	*owɨ(ro) j-		
2	*m-	*m-	*o(j)-	*o(j)-		
1+2	*tɨt-	*tɨt-	*tɨt-	*k-		

Example for person marker extensions: Parukotoan



Hixkaryána A S_A S_P P 1 w-/i- k- k- r(o)-2 m- m- o(j)- o(j)-1+2 t- t- k-

Waiwai					
	Α	S_A	S_P	Р	
1	W-	k-	k-	o(j)-	
2	m-	m-	m-	a(w)-	
1+2	t(it)-	t(ɨt)-	t(ɨt)-	k-	

Person marker extensions: lexical diffusion

- gradual spread through the verbal lexicon, not all at once:
 - 1. visible in ongoing changes in Werikyana
 - 2. place switch of Proto-Cariban *t- (1>3) and *w- (1S_A) in Tiriyoan likely by lexical diffusion (Meira 1998: 112)
 - incomplete extensions diffusion stops short of some verbs

Incomplete extension: Proto-Pekodian *k-

(1)		Arara 'to dance'	Ikpeng 'to run'	Bakairi 'to go up'
		(Alves 2017: 150)	(Pachêco 2001: 52)	(Meira 2003: 4)
	$1S_A$	k- origu-	k- aranme-	k- əku-
	$2S_A$	m-origu-	m-aranme-	m-əku-
	1+2S _A	kud-origu-	kw-aranme-	kɨd-əku-
	$3S_A$	Ø-origu-	Ø-aranme-	n-əku-

Proto-Pekodian *k-: unaffected verbs

 those verbs not affected by specific extension retain old markers – "irregular" or "archaic"

	Proto-Pekodian	Arara	Ikpeng	Bakairi
'say'	*wi-ge-	wɨ-ge-	i-ge-	u-ge-
'bathe'	*w-ipi-	w-ibɨ-	Ø-ip-	w-i-
'be'	*w-et͡ʃi-	w-it͡ʃi-	Ø-et͡ʃi-	w-i-
	*w-ap-	w-ap-	-	w-a-
'come'	*w-epɨ / *k-əd-epɨ-	w-ebɨ-	k-arep-	k-əewi-
ʻgo down'	*w-[ɨ/i]ptə-	w-iptoŋ-	?-iptoŋ-	k-itəgi-
'go'	*w-ɨtən-	w-ɨdo-	k-aran-	u-tə-

(Alves 2017: 153, 200; von den Steinen 1892: 130; Meira 2003: 4; Pachêco 2001: 80, 139, 209, 1997: 68; p.c., Angela Fabíola Alves Chagas)

'to come' in Pekodian

- Ikpeng k-arep- and Bakairi k-əewi- point to *k-əd-ebi (root *ebi with detransitivizing prefix)
- Arara w-ebi- points to *w-ebi- (bare root)
- Arara also has reflexes of complex *əd-ebi elsewhere in the paradigm
 (2)
- extension of *k- to morphologically complex form either in Proto-Pekodian (coexisting variants), or subsequently in daughters (paradigm leveling)
- (2) Arara (Alves 2017: 150) m-odebi-ni 2S_A-come-rec 'You came.'

Incomplete person marker extensions in Cariban

- six incomplete extensions (of 19 investigated extensions)
- all innovative 1S_A markers
- i.e., what remains is a small class of verbs with reflexes of Proto-Cariban 1S_A *w-
- · other extensions:
 - non-first persons only innovate S_P markers, never S_A
 - always affect all verbs (unless still ongoing)

Incomplete extensions of new 1SA markers

- 1. Proto-Pekodian *k- (details)
- 2. Proto-Waiwaian *k- (details)
- 3. Proto-Tiriyoan *t- (details)
- 4. Akuriyó k- (details)
- 5. Carijona *j-* (details)
- 6. Yukpa j- (details)

Distribution in the family

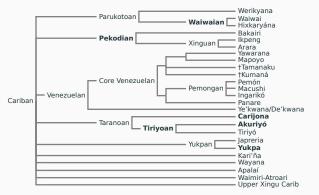
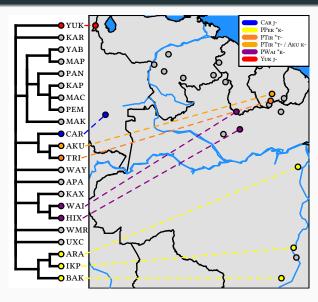


Figure 1: The Cariban language family

Geographical distribution



What verbs are unaffected by extensions?

PC	РРЕК * <i>k</i> -	- PWAI *k-	PTIR *t-	аки <i>k-</i>	CAR j-	YUК <i>j-</i>
*itə(mi) 'go'	×	×	×	×	×	×
*ka(ti) 'say'	×	×	×	×	?	?
*(ət-)jəpɨ 'come'	√/×	_	×	×	✓	_
*ɨpɨtə 'go down'	×	_	×	×	\checkmark	-
*eti 'be'	×	×	×	×	✓	\checkmark
*a(p) 'be'	×	×	×	×	×	\checkmark
*e-pi 'bathe'	×	\checkmark	\checkmark	×	?	-
✓ innovative marker		archaic mar	ker - una	attested	? unkr	nown

- strong overlap among languages in the verbs retaining 1S_A *w-
- not shown: 1) many e-initial Akuriyó verbs, 2) 4 Akuriyó movement verbs, 3) Tiriyó 'to defecate'

What causes verbs to adapt or resist innovative markers?

- possible explanations based on the network model of morphology by Bybee (1985, 1995):
 - morphology-based lexical connections → same inflection class
 - phonology-based lexical connections → same inflection class
 - frequency: high-frequency lexemes are resistant to innovation
 - 4. (semantics play no role in this case)
- strong overlap of all three factors in the Cariban case:
 - 1. vast majority of S_A verbs have reflex of detransitivizer *at(e)-/e-
 - 2. therefore, they are e- or ə/o-initial
 - 3. other, underived S_A verbs often high-frequency

Morphology: Proto-Pekodian

- none of the unaffected verbs have detransitivizer.
- normally detransitivized *e-pi 'to bathe' has become *ibi in Proto-Pekodian (details)
 - → loss of transparent morphology, not affected by innovative marker
- Bakairi and Ikpeng show *k- with *əd-ebi 'to come', but Arara has *w- with root *ebi (details)
 - → presence of detransitivizer clearly triggers innovative prefix

Phonology: Akuriyó, Carijona, Yukpa

- Akuriyó k- only on *ə*-initial verbs, not e-initial (details)
- Carijona: all *e* and *ə*-initial verbs affected, even those without detransitivizer (3)
- Yukpa: all V-initial verbs, only to 'to go' unaffected (details) but very patchy data!

(3) Carijona

- a. əji-wa-e j-eh-i
 2-search-sup 1-come-prv
 'I came looking for you.' (Guerrero Beltrán 2019: 102)
- irə watjinakano tae j-ehitə-e
 INAN.ANA body.of.water along.bounded 1-go.down-NPST
 '...l go down through that guachinacán.' (p.c., David Felipe Guerrero)

'Then I was already grown up.' (Robayo Moreno 1989: 177)

c. iretibə etfinəme gərə jetfii ireti-bə etfi-nə=me gərə **j-e**tfi-i then-from be-INF=ATTRZ still 1-be-PFV

Converging factors

- most resistant verbs: *ka(ti) 'to say' and *itə(mi) 'to go'
 - 1. no detransitivizer
 - 2. C-initial (in these languages)
 - 3. very frequent (although no text counts)
- often no definite answer for resistance to innovation
- Proto-Cariban: underived S_A verbs also most frequent, other irregularities
- · ultimate origins of split-S system still mysterious



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Irregular Arara verbs

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(4) Arara (Alves 2017: 153)

wi-ge-ni 'I said'

w-itfi-ni 'I was, lied down'

w-ebi-ni 'I came'

w-ibi-ni 'I bathed'

w-ipton-ri 'I went down'

w-ido-li 'I went'
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Cognate verbs in Bakairi: u-/w-, two k-

- (5) Bakairi (von den Steinen 1892: 131, 397, 76, 137, 374; Meira 2003: 4)
 - a. ⟨u-γépa⟩u-ge-pa
 - 1S_∆-say-NEG
 - 'I don't say.'
 - b. (wi-táki) / (wi-tági)
 - w-i-taki
 - 1S_A-be-INT
 - 'I was.'
 - c. (kxaewí-le)
 - k-aewi-li
 - 1S_A-come-ıмм
 - 'I came.'

- d. ⟨kχ-itaké-he⟩k-itəgi-se1S_A-go.down-NPST?
 - 'I go down.'
- e. 〈ū́ta〉 / 〈uúta〉
 - **u-**tə
 - 1S_A-go
 - 'l go.'
 - . **w-**i-də 1S_A-bathe-ıмм
 - 'I bathed'

Cognate verbs in Ikpeng: i-/Ø-, two k-

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(6) a. i-ge-li
1-say-REC
'I said.' (Pachêco 2001: 209)

b. Ø-etʃi-li
1-be-REC
'I was.' (Pachêco 2001: 139)

c. atʃagotpop Ø-ip-tʃi ik-gwa-ktʃi
always 1-bathe-NPST river-Loc.aquatic-ALL
'I always bathe in this river.' (Pachêco 1997: 68)
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Cognate verbs in Ikpeng: i-/Ø-, two k-

- (7) Subsequent innovations:
 - a. k-aran-tʃi1-go-NPST'I'm going.' (Pachêco 2001: 80)
 - b. k-arep-li 1-come-rec'I came.' (Pachêco 2001: 80)

Unattested first person form: *iptoŋ* 'to sit down' (p.c., Angela Fabíola Alves Chagas)

regular first person inflections References <mark>appx: Individual extensions</mark> appx: Resistant verbs appx: splitroto-Pekodian *k- Proto-Waiwaian *k- Proto-Tiriyoan *t- Akuriyó k- Carijona j- Yukpa j-

Proto-Pekodian *k-: unaffected verbs

Overview table

Proto-Waiwaian *k-

- first extension of 1+2S_P *k- to 1S_P in Proto-Parukotoan
- then further extension from 1S_P to 1S_A, creating unified first person category:

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(8) Proto-Waiwaian

1 *k-eφurka- *ki-winiki-
2 *m-eφurka- *o-winiki-
1+2 *t-eφurka- *tit-winiki-
3 *n-eφurka- *ni-winiki-
'to fall' (S₄) 'to sleep' (S₊)
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Proto-Waiwaian *k-

- (9) Modern reflexes
 - a. Hixkaryána (Howard 2001: 510; Derbyshire 1985: 189-191)

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1 k-ehurka- kɨ-nɨkɨ-
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- 2 m-ehurka- o-wnɨkɨ-
- 1+2 t-ehurka- tɨ-nɨkɨ-
- 3 *n-ehurka-* nɨ-nɨkɨ-
- Waiwai (Howard 2001: 510; W. N. Hawkins & R. E. Hawkins 1953: 209-211; R. E. Hawkins 1998: 50)
 - 1 k-eφɨrka- kɨ-wɨnk-
 - 2 m-eφɨrka- mɨ-wɨnk-
 - 1+2 t͡ʃ-eφɨrka- tɨt-wɨnk-
 - 3 n-eφɨrka- nɨ-wɨnk-

Proto-Waiwaian *k-: unaffected verbs

'to go' ***wi-**to-

(10) Archaic 1S_A forms
(Derbyshire 1985: 124, 197–198, 209 and Spike Gildea, p.c.)

Proto-Parukotoan Hixkaryána Waiwai

'to say' *wɨ-ka- i-to- wɨi-ka

'to be' *w-eʃi-/w-ah- w-eʃe-/w-ah- w-eeʃi-/w-a-

i-to- k**iw-**to-

Proto-Tiriyoan *t-

- in Tiriyó and Akuriyó, Proto-Cariban *t- (1>3) and *w- (1S_A) switched places (Meira 1998: 107-112)
- *t- / _*ə, *t͡ʃ- / _*e
- maybe in Proto-Taranoan, maybe in Proto-Tiriyoan Carijona removed any evidence by the extension of *j(i)*-

Proto-Tiriyoan *t-: unaffected verbs

Proto-Tiriyoan *t-: unaffected verbs

- (12) a. Akuriyó 15_A *w- in 4 movement verbs (Gildea 1994: 84-86)
 'return' Ø-erama'get up' Ø-eokahtə'jump' w-ejahka'go out' w-ekɨrɨka
 - b. Tiriyó *s-erama-* (Meira 1999: 301)

(13) Idiosyncratic 1S_A prefixes
Tiriyó Akuriyó
'go down' p-ihtə- p-itə'defecate' k-oeka- ?
(Meira 1999: 294; Gildea 1994: 84)

Akuriyó k-

- after split of Tiriyoan, Akuriyó innovated 1S_A k-
- apparently only replaced *t- (/ _*ə):

first person k-	first person \widehat{tf} -
əniki 'to sleep' əməmi 'to enter' əturu 'to talk' əətsena 'to cry' ətajiŋka 'to run' əiwa 'to tremble'	eepi 'to bathe' ewai 'to sit down' etonema 'to lie down' ekiirika 'to stay back' entapo 'to yawn'
<i>əempa</i> 'to learn'	(Gildea 1994)

 Meira (1998: 107) largely agrees, mentioning "several cases of first person t- in Akuriyó" (on a-initial verbs)

Akuriyó k-

• no data provided; either leftovers not affected by extension of k-, or later influence by Tiriyó

Carijona *j-*

- Carijona extended 1S_P j(i)- to S_A verbs
- (alongside 2S_A m- and 1+2S_A kis- to S_P)

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(14) Carijona (Meira 1998: 106; Robayo Moreno 2000: 173)
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tuda 'to arrive' eharaga 'to dance'

j-eharaga-
mi-tuda- m-eharaga-
kisi-tuda- kis-eharaga-
ni-tuda- n-eharaga-
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Carijona j-: unaffected verbs

- attested are only tə 'to go' and a 'to be'
- (15) Carijona (Guerrero-Beltrán <mark>2016</mark>: 5, 42)
 - a. wi-tə-e=rehe1-go-NPST=FRUST'I almost go (but I am not going to go).'
 - b. əji-marə-ne w-a-e2-with-PL 1-be-NPST'I am with you all.'

Yukpa *j-*

- same innovation as Carijona: 1S_P j- to 1S_A (16)
- not affected: only to 'to go' attested (17)
- Proto-Cariban *w- is reflected as Ø (18)
- (16) Yukpa (Largo 2011: 72, 76; Meira 2006: 139)

 otum 'to wash self' nɨ 'to sleep' ata 'to fall'

 1 j-otum- jɨ-nɨ- j-ata2 m-otum- mɨ-nɨ- m-ata3 n-otum- nɨ-nɨ- n-ata-

Yukpa *j-*

(17) Yukpa (Meira 2006: 139) aw Ø-to 1PRO 1S_A-go 'I went.'

(18) Yukpa (Meira 2006: 139)

- a. aw **j-**esare 1PRO 3>1-see 'S/he saw me.'
- b. aw Ø-esare 1pro 1>3-see 'I saw it.'

*itə(mi) 'to go'

Language	First person form
Waiwai	kɨw-to-
Hixkaryána	i-to-
Arara	w-ɨdo-
Ikpeng	k-aran-
Bakairi	u-tə
Akuriyó	wi-təmi-/wi-təemi-
Tiriyó	wɨ-tən-
Carijona	wɨ-təmə-
Yukpa	Ø-to-

(R. E. Hawkins 1998: 85; Derbyshire 1985: 70; Alves 2017: 153; Pachêco 2001: 80; von den Steinen 1892: 374; Meira 1998: 112, 1999: 292, 2006: 139)

- has become C-initial in many languages
- combination of innovative *k- and archaic *w- in Waiwai
- innovative k- in Ikpeng due to phonological form / reanalysis as detransitivizer?

*ka(ti) 'to say'

Language	First person form	
Waiwai	wɨ-ka-	
Hixkaryána	i-ka-	
Arara	wɨ-ge-	
Ikpeng	i-ge-	
Bakairi	u-ge-	
Akuriyó	wɨ-ka-	
Tiriyó	wɨ-ka-	
Carijona	?	
Yukpa	?	

(R. E. Hawkins 1998: 71; Derbyshire 1979: 4; Alves 2017: 150; Pachêco 2001: 209; von den Steinen 1892: 131; Meira 1998: 113, 1999; 294)

- only C-initial S_A verb in Proto-Cariban
- some properties of transitive verbs (causativizer *-po, nominalizer *-ne)
- has become (more) transitive in Hixkaryána (interaction with 3P n-)
- no innovative person markers attested

*ət-epi / *jəpi 'to come'

Language	First person form
Waiwai	-
Hixkaryána	-
Arara	w-ebi-
Ikpeng	k-arep-
Bakairi	k-əewi-
Akuriyó	Ø-eepi-
Tiriyó	w-əepɨ-
Carijona	j-ehɨ-
Yukpa	-

(Alves 2017: 153; Pachêco 2001: 42; von den Steinen 1892: 76; Meira 1998: 114, 1999: 294; Guerrero Beltrán 2019: 102)

- reflexes of *jəpɨ, *epɨ, *ət-epɨ,
 likely with *jəpɨ > *epɨ
- unexpected detransitivizer, since root is already intransitive
- reflexes of detransitivizer are inconsistent even paradigm-internally (Tiriyó or Arara)
- Pekodian shows *k- with complex *əd-ebi, but *w- with root *ebi
- innovative marker in Carijona, due to initial e

*ipitə 'to go down'

Language	First person form	
Waiwai	_	
Hixkaryána	-	
Arara	w-iptoŋ-	
Ikpeng	?	
Bakairi	k-itəgi-	
Akuriyó	p-ɨtə-	
Tiriyó	p-ɨhtə-	
Carijona	j-ehɨtə-	
Yukpa	-	

(Alves 2017: 153; von den Steinen 1892: 137; Gildea 1994: 84; Meira 1998: 116; p.c., David Felipe Guerrero)

- originally an S_P verb (Werikyana, Apalaí, + morphological evidence)
- switched class (Proto-Pekodian, Proto-Tiriyoan, Panare, partially in Wayana)
- irregular Proto-Tiriyoan marker *p-
- innovative in Carijona (phonology) and Bakairi (why?)

*a(p) 'to be'

Language	First person form	
Waiwai	w-a-	
Hixkaryána	w-ah-	
Arara	w-ap-	
Ikpeng	-	
Bakairi	w-a-	
Akuriyó	Ø-a-	
Tiriyó	w-a-	
Carijona	w-a-	
Yukpa	j-a-	

(Derbyshire 1985: 197; Alves 2017: 200; von den Steinen 1892: 130; Meira 1998: 115, 2006: 142; p.c., Spike Gildea)

- older copula (Gildea 2018: 375-382)
- root co-occurs with *eti
- *p only present in some reflexes
- innovative person prefix only in Yukpa

*eti 'to be'

Language	First person form
Waiwai	w-ee∫i-
Hixkaryána	w-e∫e-
Arara	w-it͡ʃi-
Ikpeng	Ø-et͡ʃi-
Bakairi	W-i-
Akuriyó	-
Tiriyó	w-ei
Carijona	j-et͡ʃi-
Yukpa	j-e-

(Derbyshire 1985: 198; Alves 2017: 153; Pachêco 2001: 139; von den Steinen 1892: 397; Meira 1999: 339; Guerrero Beltrán 2019: 92; Meira 2006: 143; p.c., Spike Gildea)

- newer copula root (Gildea 2018: 375-382)
- root co-occurs with *a(p)
- original meaning maybe 'to dwell'
- innovative person prefixes in Carijona and Yukpa (both phonological)

*e-pi 'to bathe'

- fully regular S_A verb in most languages, with reflex of detransitivizer *e-
- *e-pi has become *ibi in Proto-Pekodian, for unknown reasons

Language	INTR	TR	Source	
Werikyana	eehɨ	įh <u>į</u>	p.c., Spike Gildea	
Hixkaryána	ewehi	i h i	Derbyshire (1979: 198)	
Waiwai	ejepu	рį	R. E. Hawkins (1998: 166, 192)	
Arara	ibɨ	ip	Alves (2017: 150, 162)	
Ikpeng	ip	ip.	Pachêco (1997: 103) and Campetela (1997: 123)	
Bakairi	i	į	Meira (2003: 4, 2005: 285)	
Tiriyó	epɨ	ρɨ	Meira (1999: 697)	
Akuriyó	epi	pɨ	Gildea (1994: 87)	
Wayana	ep i	up i	Camargo & Tapinkili (2010: 24, 52)	
Apalaí	epi	pɨ	Meira (2000: 218)	
Kari'ña	ekupi	kupi	Courtz (2008: 304)	
Ye'kwana	e?hi	įhį.	Cáceres (2011: 439, 454)	
Kapón	eku?pi	ku?pi	Stegeman & Hunter (2014: 37)	
Pemón	ekup i	p i	de Armellada (1944: 34, 129)	
Panare	akupɨ	ipi/kupi	Mattéi-Müller (1994: 8, 294)	

Semantic mismatches: Kari'ña

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(19) a. mi-kupi-ja2>3-bathe-PRS'You bathe him/her.' (Hoff 1968: 160)
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b. a-kupi-ja3>2-bathe-PRS'S/he bathes you.' (Yamada 2011: 63)
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Semantic mismatches: Kari'ña

- (20) a. sipi tɨnka-rɨ m-ekema-non hen net pull-nmւz 2-be.afraid-prs.uncert eh?

 'You're afraid to pull up the net, aren't you? ' (Courtz 2008: 253)
 - b. aj-awoi-ja2-get.up-prs'You are getting up.' (Hoff 1968: 167)
 - S_A ekema 'to be afraid'
 - S_P awomi 'to get up'

Generic meaning of the detransitivizer

(21) Tiriyó (Meira 2000: 218-219, 1999: 128, 256)

<i>nonta</i> 'abandon'	\rightarrow	e-nonta, əi-nonta	'abandon each other' (reciprocal)
<i>suka</i> 'wash'	\rightarrow	e-suka, əi-suka	'wash self' (reflexive)
pahka 'break (тк)'	\rightarrow	e-pahka	'break (INTR)' (anticausative)
<i>puunəpɨ</i> 'think about'	\rightarrow	əh-puunəpɨ, əi-puunəpɨ	'think, meditate' (antipassive)