

A Study of Verbs in Southern Amazonian Bakairi

著者名(英)	Kazue Imasato, Geraldo Faria
journal or publication title	The journal of Kanda University of International Studies
volume	26
page range	409-431
year	2014-03
URL	http://id.nii.ac.jp/1092/00001122/

A Study of Verbs in Southern Amazonian Bakairi

Kanda University of International Studies

Kazue Imasato & Geraldo Faria

Abstract

Bakairi is a language spoken in 12 tribes in the Southern Amazonia, The language is divided in two dialectal groups: *Pakuera Bakairi*, the Eastern speakers who have already devised a writing system; and a Western group (*Bakairi de Santana*), of more than 300 speakers. These two groups live some 150 kilometers apart separated by jungles, rivers and mountains. Neither dialect has had any formal documentation of their grammar. The authors wish to remedy this situation by describing how this Carib language typifies verbs. In an environment where they do *not* possess Western notions of hours, days of week, years as we normalize our lives, the Bakairi clarify indispensable cultural notions in highly agglutinative verbal paradigms.

1. Introduction

There are over 1,000 speakers¹ of the Bakairi language, who live across scattered tribes in the Southern Amazonia. An estimated equal number of speakers temporarily or permanently live in nearby cities, in Mato Grosso, Brazil. This Cariban (Gildea 15) language is divided into two dialectal groups: *Pakuera Bakairi*, the Eastern speakers (about 70% of the total population) who have already conceived a writing

¹ <http://loja.ibge.gov.br/censo-demografico-2010>.

system; and a Western group (Bakairi de Santana²). These two groups live some 150 kilometers apart, separated by jungles, rivers and mountains. Formal documentation of the grammar of the two dialects does not exist. There are a few publications (limited to anthropological studies and collections of oral stories) on the Eastern dialect, whereas there has so far been no study that analyzes or describes the Western dialect. This paper aims to remedy this oversight by discussing the ways the Bakairi de Santana typifies verbs. (In the discussion that follows, the authors will use the term Bakairi to indicate solely the vernacular spoken in the Santana region.)

2. Linguistic Type

Typologically, verbs in any language are essential to configure thoughts and to express meanings. Verbs are a part of speech—a word class—that typically signals states and actions. Verbs constitute, singly or in a phrase, a minimal predicate in a clause—verbs are the head of the predicate. Oftentimes, verbs govern various types of constituents which may occur in a clause. And in some inflectional languages, verbs may be inflected to denote voice, person, number, grammatical gender, case, topic, degree, *et cetera*, in addition to tense, aspect, and modality (TAM). Languages specialize and do not show all of the aforesaid features.

In Bakairi, notions pertaining to the sequence of events, intention, and many other linguistic settings (bound person pronoun, reflexives/reciprocals, adverbial morphemes (such as *again*, *against*, *contrary*, *up/down*), collectivity/plural, tenses,

² The Western Bakairi people live in two villages: about 250 of them have settled in the Catholic Santana village, and 50 people in the Protestant village of Nova Canaan. These two settlements are visible from each other. They share a school, a few public buildings, and agricultural machinery, among other things.

imperatives, negation) are inflected in highly agglutinative³-polysynthetic verbal paradigms⁴ (Kornai 62). Tenses range from realis to irrealis. Realis tenses—something that has happened or is happening—are mainly *present* and *past* tenses.⁵ Irrealis refers to something that could have happened or might happen, such as *future*, *conditional*, *subjunctive* and *purpose*.⁶

Until fairly recently, the Bakairi people did *not* have Western notions of hours, days of the week, or a systematic chronology of years in their language. Currently they do possess these notions, thanks to loanwords borrowed from Brazilian Portuguese (BP). Despite these borrowed time markers, verbs in Bakairi are able to express distinctions which in many other languages are done periphrastically by adverbs of time, manner, quantification, position and similarity.

Typically, the word order (or constituent order) is *Verb-Subject* (VS) for intransitive verbs. *Object-Verb-Agent* (OVA) is the norm when the subject/agent is a free-pronoun (unmarked A). Nevertheless, when the subject/agent of the transitive verbs is a given name or a noun (marked A), the word order is *Agent-Object-Verb* (AOV). Furthermore, the language possesses a relatively complex *bound-pronoun system*, which must coordinate with the inflection of verbs.

³ Most words consist of various fully segmentable morphemes (roots and affixes). However, it is unlikely that every morpheme is agglutinative; a few grammatical elements are not segmentable, since the affix will fuse with the root. This makes Bakairi partly fusional, but highly agglutinative.

⁴ Almost all words are bimoraic, except for a few interjections and a handful of proper names. Mora plays a significant role in stress allocation and assists in parsing and creating boundaries of phonological words, in Bakairi. However, stress (thus mora) plays a minor role in the morphology of Bakairi verbs, simply aiding the speakers in determining where and how to parse words.

⁵ Native teachers of the language identify only 4 realis tenses: *present progressive*, *recent past*, *simple past* and *remote past*. This list should also include *t-stem-ze* to indicate *simple present* instances.

⁶ Also, the speakers identify verbs that become attributes of a noun as *infinitives*.

3. Morphology of the Bakairi Verbs

The primary morphology of verbs is a *stem*, oftentimes comprised of a *verb root* (sometimes preceded by a *noun root*), which is always followed by a *tense marker* (verbal suffix) (TABLE 1: PRIMARY MORPHOLOGY OF VERBS). This morphological structure typifies the ‘infinitive’⁷ as well as the ‘imperative’:

TABLE 1: PRIMARY MORPHOLOGY OF VERBS

		STEM	+	tense.marker
N-F	‘to cover s.t.’	etidə	+	dili
	‘to ask, to sit down’	eka	+	dili
	‘to eat (fruit)’	ein	+	li
	‘to forget’	enanənio	+	li
IMP	‘cover it!’	etidə	+	gə
	‘sit down!’	eka	+	gə
	‘eat it (the fruit)!’	ein	+	gə
	‘forget it!’	enanənio	+	gə

No further morphological processes can be applied to the *infinitive*. The infinitive form in Bakairi refers to a *non-finite* (N-F) form, which is not marked for person or number of a subject. These N-F structures possess limited use, usually for phrases as *it is time to eat*, *it is the place to sleep*, *it is a piece of paper to write* (examples (1) and (2), below). Nevertheless, the most common tense, the *present progressive*, derives from this morphological structure always with the annexation of person inflection prefixes and the nasalization of the stem. Further verbal constructions directly derive from the N-F: the *participle* and *causative*.

⁷ The term *infinitive* tends to mislead readers, because it is highly charged with language specific characteristics, and so the authors chose to use the term *non-finite* instead.

1. edanwəli⁸ ome

edan-wə-li	ome ⁹	copula
eat_food-all-N_F	time/now	it is

'It is time to eat (all of the food).'

2. sasewədili ome

sase-wə-dili	ome	copula
gather_fruit-all-N_F	time/now	it is

'It is time to harvest (all of the fruit).'

Syntactically, the N-F is a nominalization. It occurs basically before a noun and functions as an attribute of that noun. It cannot be preceded by a bound pronoun. Pragmatically though, utterances (1) and (2) indicate:

- (a) a straightforward *statement* of a fact;
- (b) an *appeal* for the cook to prepare and/or serve the solid meal (such as rice cake, corn bread, chips or bread—as long as all dishes are solid) in (1), and a suggestion so that one's companions harvest all the fruit in (2); and,
- (c) an *invitation* or an *indirect command* to eat or to harvest.

Unlike the N-F, a handful of morphological processes may be applied to the *imperative* (IMP), the lower tier of TABLE 1, leading to inflections and derivations (TABLE 2).

⁸ *edanwəli* is restricted to 'eating solid food', *einli* is limited to 'eating fruit or liquid food, such as soup', and *sədili* to 'eating meat.'

⁹ Bakairi is a language that lacks a copula verb for the verb 'to be'. Negation of the copula however is expressed with a negative copula, as well as a past copula.

TABLE 2: MORPHOLOGICAL ALTERATIONS IN THE IMPERATIVE

	STEM	+	affixes & suffixes
'bathe, only you!'	i	+	kə
'bathe, you all!'	i	+	taun-gə
'bathe again, you all!'	i	+	ton-daun-gə
'come & bathe, you all!'	i	+	taun-gə-rə
'come & bathe again, you all!'	i	+	ton-daun-gə-rə
'go & bathe, you all!'	i	+	taun-də
'do not bathe'	i	+	də

Before discussing the inflectional system of person (section 3.1.), it is necessary to explain the morphological verbal configurations in Bakairi that *do not relate to tense*, and *do not take person inflection*:

- (a) verbs of the semantic type LIKING¹⁰ (i.e., love, hate, like doing something) are neither linked to past or present (example (3)) and have the morphological make-up of *t-stem-ze/se*.
- (b) *future* constructions (subjunctives and conditionals as well) are irrealis, something that might happen (example (4)), and are formed as *stem-ze/se*;
- (c) *purposive* constructions—constructions that show the purpose of an action represented by the main verb—require verbs *not* to be inflected to indicate person (example (5)); they are formed as *stem-(di)li-ro*.

3. kafe tənɪʔe əməʔ en-hen, tənɪʔe

kafe t(ə)-eni-ze¹¹ əməʔ en_hen t(ə)-eni-ze.

¹⁰ Languages allow assertions such as 'I like coffee', 'dogs bark' to be expressed in a form that does not indicate a particular tense (Dixon 154).

¹¹ As the reader may notice, /z/ or /h/ will appear many times as [ʔ], which is a distinguishing feature

coffee t-drink-like/do you? yes, t-drink-like/do
'Do you like (drinking) coffee? Yes, I do.'

4. ogonekə itian idəʔe urə

ogonekə i-eti-an idə-ze urə
afternoon your-house/clothing-to go-FUTURE I
'In the afternoon, I am going to your house.'

5. iwerə ma iʔe ikili-ro

iwerə ma ize ikili-ro
now/today well-INTERJECTION want sleep-perhaps
'Now I go to sleep.'

As most statements in Bakairi refer to an action, a state or a property situated within a particular time frame, this time frame is shown through a *system of tense choices*. Such verbal statements must co-occur with a person inflection. For the realis tenses, the inflection for person is expected, especially for the 1st and 2nd persons of the singular (1sg / 2sg) and for 1st person plural inclusive and 2nd person of the plural.

person.inflection - STEM - tense.marker

The *person inflection* (section 3.1.) commonly indicates the *subject* (intransitive verbs) or the *agent* (transitive verbs) of the predicate in the active voice. The stem may

of the Western dialect. The choice of /z/ is based on the principle that Cariban languages typically possess /ze/ endings for verbs, leading to the conclusion that this glottal stop is a language specific.

undergo two alterations: (a) it is always nasalized to indicate *durative* (‘continuous’ or ‘progressive’ tense); and (b) a phonological *vowel shift* when the person inflections are *k*-¹² and *t*-.¹³ The *stem* may be attached to its argument (a noun object before it).¹⁴ The *tense.marker* (section 3.2.) always follows the stem. The stem may be modified by adverbial morphemes preceding and/or following it. The verb may be followed by plural markers exclusively for 2nd and 3rd persons in the plural (2pl / 3pl).

3.1. The person inflection

The 1sg and 2sg are strictly speaking *bound pronouns* and they differ between non-past and past tenses. The *free pronoun* for 3rd person singular (3sg) of Bakairi is *not* a person pronoun *per se*. It is indeed a set of demonstratives used as free pronouns, and when 3sg is inflected in the verb as a *bound pronoun* it is usually an *n*- or \emptyset (unmarked)¹⁵ (except for in the *present progressive*, it is a nasalized *j*- as *n*-). The 3sg is less sensitive to tense, i.e., sometimes it does not vary between present and past tenses, where the 1sg is the most sensitive to tenses being always different (highly marked). TABLE 3: PERSON INFLECTION IN TWO PATTERNS OF VERB PARADIGMS below gives an illustration of these bound pronouns.

¹² The *k*- morpheme of the first person plural (1pl), *we*, denotes *all of us*.

¹³ The *t*- morpheme is an undetermined possessor, which fills a required synthetic slot, but semantically refers simply to *someone*.

¹⁴ In Bakairi, this core slot can be attached to the argument of the verb, such as *to babysit*, *to headhunt* in English.

¹⁵ The degree of markedness in Bakairi verbs is 1sg>2sg>3sg, with 3sg being the least marked.

TABLE 3: PERSON INFLECTION IN TWO PATTERNS OF VERB PARADIGMS

<i>to go across</i>	Durative	Unfinished time	Finished time
ekurədili	-dili (pattern)	earlier today	yesterday
1sg	kəenkurədili	sekurədai	sekurədə
2sg	məenkurədili	mekurədai	mekurədə
3sg	ɲenkurədili	nekurədai	nekurədə
1pl.exc	ina ɲenkurədili	ina nekurədai	ina nekurədə
1pl.inc	kəenkurədili (or kidenkurədili)	kəenkurədai	kəenkurədə
2pl	məenkurədilimo	mekurədaimo	mekurədəmo
3pl	ɲenkurədilimo	nekurədaimo	nekurədəmo
<i>to scratch</i>	Durative	Unfinished time	Finished time
ekeli	-li (pattern)	earlier today	yesterday
1sg	kəenkeli	sekeragi	seke ¹⁶
2sg	məenkeli	mekeragi	meke
3sg	ɲenkeli	nekeragi	neke
1pl.exc	ina ɲenkeli	ina nekeragi	ina neke
1pl.inc	kəenkeli (or kidenkeli)	kəekeragi	kəeke
2pl	məenkelimo	mekeragimo	mekemo
3pl	ɲenkelimo	nekeragimo	nekemo

The details of the inflection are:

- 1sg (speaker) is indicated by {kə-} for non-past and {s-}¹⁷ for past tenses.
- 2sg (addressee) is indicated by {mə-} for non-past and {m-} for past tenses.
- 3sg (non-speech act participant) is indicated by {ɲ-}, {n-} or Ø.
- For 1st plural exclusive (1pl.excl) (including speaker and *a few* others, the *paucal* we), the verb is borrowed from 3sg and *cannot* receive a plural marker {-mo}. It

¹⁶ The -li ending paradigm is formed with the -Ø morpheme for the simple past tense.

¹⁷ Or [-] if the stem begins with *i-* (also in nouns with *u-* as [i-]), as palatalization obligatorily occurs.

must be preceded by the free pronoun *ina*.

- 1pl inclusive (1pl.incl) (including speaker and *a large* group or all, the *collective* we) is indicated by {k-} or {kid-}, and *never* receives the plural marker {-mo}.
- Verbs only receive a plural marker {-mo} when inflected for 2pl / 3pl. These 2pl and 3pl inflections are borrowed from their respective 2sg and 3sg.

3.2. Tenses

At the very beginning of any soliloquy or dialogue, the speaker sets the notion of time by using an adverb that indicates time (*a long time ago, some time ago, yesterday, this morning, tomorrow*), and by transforming the verb accordingly, with the use of morphemes added to the verb stem, indicating present (section 3.4.), unfinished time past, which is the recent past (section 3.6.), finished time past, which is the simple past (section 3.6.), intention, conditional-subjunctive (section 3.9.), or other more advanced tenses.

As this notion of time is also included *in the verb* at the very beginning of any discourse, the following sentences do not require the repetition of this tense in their verbs (avoiding redundancy). To illustrate, a text could be formed this way: *Yesterday I went to the river to bathe. I walk down, I enter the water, I clean. Finish.* The sequential phrases of the same topic will be formed with N-F verbs ending in *-li* (section 3.4.) until the topic is concluded and a new topic is introduced, setting a new time frame.

The first and most widely used tense is the present progressive—the durative. It is formed with a unique person inflection (especially for 1sg and 2sg) (section 3.1), the nasalized stem (section 3.3.), and ending with the *-li* morpheme (section 3.4.).

3.3. Nasality

Nasality is the most distinct and widespread suprasegmental feature that *must* occur in the root of the verb to denote its ongoing progression. It is fashioned by the nasalization of the vowel in a single syllable root (TABLE 4: NASALIZATION OF ROOTS). With multiple-syllable roots, nasalization occurs in the first syllable, although multiple vowels may be nasalized by forward nasal spreading. Moreover, backward nasal spreading occurs, causing the nasalization of the semi-vowel /j/ (bound vowel in the C-slot of the syllable) to be perceived as [ɲ].

TABLE 4: NASALIZATION OF ROOTS

enetəgeli 'to go down' (with nasalization of the first vowel)			
(1sg)	kəennetəgeli	{kə-ennetə-ge-li}	{1sg-NSLZD ROOT-down-li}
(2sg)	məennetəgeli	{mə-ennetə-ge-li}	{2sg-NSLZD ROOT-down-li}
(3sg)	ɲennetəgeli	{ɲə-ennetə-ge-li}	{3sg-NSLZD ROOT-down-li}
(1pl)	ina ɲennetəgeli	{ina ɲə-ennetə-ge-li}	{1pl 3sg-NSLZD ROOT-down-li}
(2pl)	məennetəgelimo	{mə-ennetə-ge-li-mo}	{2pl-NSLZD ROOT-down-li-PL}
(3pl)	ɲennetəgelimo	{ɲə-ennetə-ge-li-mo}	{3pl-NSLZD ROOT-down-li-PL}

The presence of a nasal consonant in the root, such as /n/ or /m/ suffices as nasalization, making it ambiguous whether the verb is in the progressive form or not. However, some speakers insist on the nasalization of the initial vowel of the stem, even in the presence of a nasal consonant. Nasality must *always* co-occur with *-li* to form the *present progressive*.

3.4. The *-li* morpheme

An inflected Bakairi verb with the *-(di)li* morpheme as a verb suffix indicates a fundamental tense. These *-(di)li* verbs—when formed with person inflection and the

nasalized stem—customarily refer to an *ongoing tense* in the indicative mood (realis). This *-(di)li* morpheme is generally bound directly to roots as a suffix to form verbs—except (◆) when *-on-* (meaning *again*), *-wə-* (meaning *the totality*), *-ge/-ke-* (meaning *contrary* or a verbalizer) is added between the stem and *-li*. The most common affix added after the stem is *-mo* (section 3.5.). The *-(di)li* morpheme is replaced by *-raki/-ragi*, *-tai/-dai*, *-də* or \emptyset (section 3.6.) for non-present realis tenses.

person.inflection - STEM - (◆) - (di)li

Two distinct paradigms are fashioned in relation to the *-li* morpheme:

- (a) *-dili* > *-dai* (*-tai*) > *-də*, and;
- (b) *-li* > *-ragi* (*-raki*) > \emptyset .

TABLE 5: PARADIGMS -DILI & -LI

	-dili	-dili	-li	-li
	<i>to spill</i>	<i>to grill</i>	<i>to split</i>	<i>to erase</i>
N-F	iapədili	saunlədili	iatuli	ʃigeli
Pr. Progressive (1sg)	kənapədili	kaunlədili	kənatuli	kəingeli
Recent Past (1sg)	ʃiapədai	saunlətai	ʃiaturagi	ʃigeraki
Simple Past (1sg)	ʃiapədə	saunlədə	ʃiatu	ʃige
Pres. Participle	iapədibə	saunlətibə	iaturibə	ʃigeripə
Passive	iapədobəri	saunlətobəri	iatuʔobəri	ʃigeʔopəri

3.5. The *-mo* morpheme

The verbal suffix {*-mo*} can be added to a verb to signify plurality. Bakairi does not have the exact equivalent of the Western concept of the plural, *more than one*.¹⁸

¹⁸ Although this study does not deal with nouns, it is important to note that **-mo** is used to signify a *large group of* or *all of*. The *-mo* morpheme is not used for a small number of people or things (paucal notion).

The 1pl cannot receive {-mo} even though it refers to a semantic plural. There are indeed two 1pl formations: (1) *ima* – I and a few others, *paucal we*; and, (2) *kurə* – I and many, or all, *collective we*. The {-mo} morpheme is the syntactic marker for the 2pl and 3pl, and is the only difference that distinguishes the verb from the 2sg and 3sg. The {-mo} morpheme does not vary according to tenses, and is added as the very last suffix.

present progressive

<i>to host</i> editədili	məenditədili (2sg)	məenditədilimo (2pl)
	ɲenditədili (2sg)	ɲenditədilimo (3pl)
<i>to burn</i> enaʔodonogeli	məenaʔodonogeli (2sg)	məenaʔodonogelimo (2pl)
	ɲenaʔodonogeli (3sg)	ɲenaʔodonogelimo (3pl)

recent past (unfinished time)

<i>to circle</i> enomidili	menomidai (2sg)	menomidaimo (2pl)
	nenomidai (2sg)	nenomidaimo (3pl)
<i>to fan</i> enukibəgeli	menukibəgeragi (2sg)	menukibəgeragimo (2pl)
	nenukibəgeragi (3sg)	nenukibəgeragimo (3pl)

simple past (finished time)

<i>to pull</i> epəgeli	mepəge (2sg)	mepəgemo (2pl)
	nepəge(3sg)	nepəgemo (3pl)
<i>to lift</i> eparadədili	meparadədə (2sg)	meparadədəmo (2pl)
	neparadədə (3sg)	neparadədəmo (3pl)

3.6. The *before-now* tenses

Two sets of tenses indicate *before now*. Variations occur in each group depending on whether or not the N-F forming *-li* morpheme is preceded by *-di-*. Recent past shows variation in [\pm voice]. All verbal derivations that can possess devoiced suffixes will use as a reference the recent past to decide on the [\pm voice] of their suffixes. Devoiced suffixes can occur in causatives, participles, passive voice, and in the irrealis tenses. As mentioned before, a word can only have one devoiced consonant in an intervocalic position.

		Recent past			Simple Past
<i>-dili</i>	>	<i>-dai/-tai</i>	>		<i>də</i>
<i>-li</i>	>	<i>-ragi/-raki</i>	>		\emptyset

3.6.1. Recent Past

The recent past *-ragi/raki* & *-dai/-tai*, akin to the English ‘present perfect’ (*only* when designating unfinished time), indicates a finished action in an unfinished time. In other words, the recent past shows that the predicate occurred *before now*, however, in an unfinished time such as *earlier this morning*, *earlier today*...

6. awadu ajetai iwerə

awadu a-ʒe-tai¹⁹ iwerə

beiju_chip it-1.make- REC.PST today

‘*I have made beiju chips today.*’

¹⁹ Both [ajetai] and [aʒetai] are acceptable pronunciations.

7. satugeragi

s-atuge-ragi

I-peel-REC.PST

'I have peeled (earlier today).'

8. ʃitugeragi

si-atuge-ragi

I.it-peel-REC.PST

'I have peeled it (earlier today).'

3.6.2. Simple Past

The Simple past is indicated with $-\emptyset$ or $-d\grave{a}$. For $-dili$ (present form) verbs, $-dili$ is replaced by $-d\grave{a}$. For all other verbs ending in $-li$, the Simple Past is formed with $-\emptyset$.

This tense is used for finished time predicates (yesterday, last night, two days ago, some time ago). It is not possible to use time (one o'clock, two hours ago) in the language, simply because they did use to have watches until quite recently. Nonetheless, as they do have watches now, time expressions are loanwords (or rather, loan expressions) from BP. Likewise, they do not possess a numerical system as Westerners do. They use a binary number system: one, two, two-one, two-two, two hands (=10). All more complex numbers are borrowed from BP.

9. etadədili – ❶ to herd cattle ❷ to incarcerate (something)

setadədai 'I have gathered it.' (earlier today)

setadədəie 'I have just gathered it.' (earlier today)

setadəba(inda)	‘I have not gathered it (yet).’	(not yet)
setadə <u>də</u>	‘I gathered it.’	(yesterday)

10. etədili – *to cast*

setədai	‘I have sowed it.’	(earlier today)
setədaie	‘I have just sowed it.’	(earlier today)
setəba(inda)	‘I have not sowed it (yet).’	(not yet)
setə <u>də</u>	‘I sowed.’	(yesterday)

11. etageli – *to release, to let go*

setageragi	‘I have released it.’	(earlier today)
setageragie	‘I have just released it.’	(earlier today)
setageba(inda)	‘I have not released it (yet).’	(not yet)
setage Ø	‘I released it.’	(yesterday)

12. etamugeli – *to remove dirt, to uncover*

setamuger <u>agi</u>	‘I have uncovered it.’	(earlier today)
setamugeragie	‘I have just uncovered it.’	(earlier today)
setamuge <u>ba</u> (inda)	‘I have not uncovered it (yet).’	(not yet)
setamuge Ø	‘I have uncovered.’	(yesterday)

The {inda} morpheme is borrowed from the BP *ainda* (not yet). It is optionally incorporated with the negation. Negation, in examples 13-16, shows devoiced suffixes resulting in *-pa*. Section 3.8 will discuss negation in detail.

13. medanwəraki → medianwəpa ‘you’ve eaten / you didn’t eat (solid food)’
 14. meinraki → meinpa ‘you’ve eaten / you didn’t eat (liquid food)’
 15. mətai → məpa ‘you’ve eaten / you didn’t eat (meat)’
 16. menweraki → menwəpa ‘you’ve smoked / you did not smoke’

3.6.3. Participle

Participles take *-ribə/-ripə* and *-dibə/-tibə* endings. The present form *-dili*, is replaced by *-dibə* (*-tibə*).

This tense is used for finished time predicates that have another verb at the center of the verb phrase. However, it is also used to express a complete idea about the topic: ‘*the one who has done*’, ‘*who has done*’, ‘*what is done*’, ‘*that is done*’.

In Bakairi, animals and human beings, as well as supernatural entities are part of an ANIMATE notion, whereas INANIMATE refers to water, trees, plants and so forth. It is not possible to tell apart whether the referent is a human or animal as the language does not offer any lexical clue such as the English *who* or *that*. (17) to (20) are the participles of (9) to (12):

17. etadədili → etadədibə (that was gathered, who was incarcerated)
 18. etədili → etədibə (that was sowed)
 19. etageli → etageribə (that was released, who was released)
 20. etamugeli → etamugeribə (that was uncovered, who was uncovered)

The morphemes *-dibə* and *-ribə* take the alternative forms *-tibə* and *-ripə*. The easiest way to predict *-tibə* is by looking at the immediate past (*recent past*),

because one consonant of the recent past suffix can be devoiced. Devoiced recent past verb suffixes turn out to be devoiced participle endings (TABLE 6: DERIVATION OF PARTICIPLES FROM RECENT PAST). Devoiced participles do not always correspond, in the same way, to devoiced imperatives. Prefixes and the verbal stem are identical to the N-finite forms, and suffixes depend directly on the recent past tense endings.

TABLE 6: DERIVATION OF PARTICIPLES FROM RECENT PAST

	Non-finite	Participle	Recent past (1sg)	Imperative
<i>to bring all</i>	enewəli ²⁰ >	enet <u>ibə</u>	< senet <u>ai</u>	enek <u>ə</u>
<i>to burn</i>	iaduwəndili >	iaduwənt <u>ibə</u>	< ʃiaduawənt <u>ai</u>	iaduwənk <u>ə</u>
<i>to cook</i>	idələdili >	idələt <u>ibə</u>	< ʃidələt <u>ai</u>	idələk <u>ə</u>
<i>to send</i>	igonodili >	igonot <u>ibə</u>	< ʃigonot <u>ai</u>	igonok <u>ə</u>
<i>to burn out</i>	ʃugeli >	ʃuger <u>ipə</u>	< ʃuger <u>aki</u>	ʃugek <u>ə</u>
<i>to grate</i>	ʃigili >	ʃigir <u>ipə</u>	< ʃigir <u>aki</u>	ʃigig <u>ə</u> ◀
<i>to eat</i> ²¹	edanwəli >	sedanwə <u>ripə</u>	< sedanwə <u>raki</u>	edanwəg <u>ə</u> ◀
<i>to search</i>	ʃuili >	ʃuir <u>ipə</u>	< ʃuir <u>aki</u>	ʃuig <u>ə</u> ◀

◀ indicates where devoicing did not match with recent past.

High-frequency verbs—such as go, eat, drink, do, burn, give and a few others—due to their nature of being constantly used show some degree of irregularity from the abovementioned principles. In example (21), the verb stem varied (*eʔe-* > *e-*) as well as the devoicing of the recent past did not carry over (*tai* > *dibə*). Such irregularities are very few.

²⁰ -wə- can replace -di- to signify ‘all’.

²¹ To eat solid food, other than meat.

21. eʔedili ‘seeing’ > kæn’edili ‘I am seeing’ > setai ‘I have seen’ >
 sedə ‘I saw’ > eʔedibə ‘is seen’ > egə ‘see it!’ IMP

It is possible to predict all tense markers accurately for all verbs by mastering the present progressive and the recent past tenses. As for the devoicing of the intervocalic consonant, it is predictable for all medium and low-frequency verbs. Only 7 high-frequency verbs show a minor degree of irregularity in carrying over [± voice] from the recent past to other tenses.

3.7. Modifying morphemes

The most prominent modifying morpheme is *-ge* and its alternative *-ke*. The *-ge* suffix only appears after the root, before *-li*, and modifies the verb by (a) opposing the function of the verb, as does the English prefix *de-* in *deform* or (b) verbalizing nouns (n.) and adjectives (adj.), such as *-ize* in *initialize*. Verbs that end in *-dili* replace *-di-* with *-ge-* or *-ke-*. Again, the recent past of verbs will help determine the choice of *-ge* or *-ke*.

TABLE 7: MORPHOLOGICAL DERIVATION

iolikeli	‘to deflate’	<	iolili	‘to inflate’
enaʔugeli	‘to open’	<	enaʔuli	‘to close’
enanəgeli	‘to remember’	<	enanənioli	‘to forget’
ekərinugeli	‘to straighten’	<	ekərinu	‘bent’ (adj.)
eunukeli	‘to create smoke’	<	euni	‘smoke (n.)’
sarikeli	‘to remove leaves’	<	sari	‘leaf (n.)’

Morphologically, derivations of all newly comprised *-ge/-ke* verbs are invariable: *-ragi* to indicate recent past, *-∅* for the Simple past, *-ribə* for participles, and *-ʔobəri*

for causatives. Take for instance, the verb *fumekeli* ‘to blow (a musical instrument)’. Its participle, passive, causative, present progressive, recent past, and simple past are as follows:

fumekeribə (is) blown *fumekeʔo* that/which/who is blown
fumekeʔobəri that/which/who was caused to be blown

	<i>Present progressive</i>	<i>Recent past</i>	<i>Simple past</i>
(1sg)	<i>kunmekeli</i>	<i>fumekeragi</i>	<i>fumeke</i>
(2sg)	<i>munmekeli</i>	<i>mumekeragi</i>	<i>mumeke</i>
(3sg)	<i>ɲunmekeli</i>	<i>numekeragi</i>	<i>numeke</i>
(1pl)	<i>ina ɲunmekeli</i>	<i>ina numekeragi</i>	<i>ina numeke</i>
(2pl)	<i>munmekelimo</i>	<i>mumekeragimo</i>	<i>mumekemo</i>
(3pl)	<i>ɲunmekeli</i>	<i>numekeragimo</i>	<i>numekemo</i>

3.8. Negation

The only mark of negation in Bakairi is the addition of the suffix *-ba/-pa* to a verb which is the predicate head. In order to predict the morpheme *-ba/-pa*, it is necessary to master the recent past (*-ragi/-raki* & *-dai/-tai*) of any given verb. The recent past contains the clue to whether the negative suffix will be [\pm voice] (as a matter of fact, [\pm voice] of any verbal suffix that replaces the tense markers can be predicted based on this clue). All verbs that take *-ragi* & *-dai* are negated with *-ba*, and verbs with *-raki* & *-tai* are negated with *-pa*. The {*-ba/-pa*} morpheme replaces the realis tense endings, but the remaining bound person pronoun (person prefix) and verb stem usually carry enough semantic information to indicate whether it is a negated present or negated past. The following table (TABLE 8) shows the negation of the realis tenses of *iaduwəndili* ‘to burn’, with its recent past ending in *-tai*.

TABLE 8: NEGATION OF REALIS TENSES

	<i>Recent Past</i>	<i>Simple Past</i>	<i>Negation of both past tenses</i>
(1sg)	ʃiaduawəntai	ʃiaduwendə	ʃiaduwəmpa
(2sg)	miaduawəntai	miaduwendə	miaduwəmpa
(3sg)	niaduawəntai	niaduwendə	niaduwəmpa
(1pl)	ina niaduawəntai	ina niaduwendə	ina niaduwəmpa
(2pl)	miaduawəntaimo	miaduwendəmo	miaduwəmpamo
(3pl)	niaduawəntaimo	niaduwendəmo	niaduwəmpamo
	<i>Present Progressive</i>	<i>Negated Present</i>	
(1sg)	kəiandunwendili	kəiandunwəmpa	
(2sg)	məiandunwendili	məiandunwəmpa	
(3sg)	ɲandunwendili	ɲandunwəmpa	
(1pl)	ina ɲandunwendili	ina ɲandunwəmpa	
(2pl)	məiandunwendilimo	məiandunwəmpamo	
(3pl)	ɲiandunwendilimo	ɲiandunwəmpamo	

Other derived forms of this verb *iaduwendili* ‘to burn’, such as *iaduwentibə* ‘is burned’, *iaduwənto* ‘that/who is made to burn’ and *iaduwəntobəri* ‘that/who was caused to get burned’ also respect the [\pm voice] feature regulated by the verb suffix for the recent past.

Had the recent past tense ended in *-dai* or *-ragi* (a large number of the verbs actually end in these morphemes), the negation of the complete paradigm would have been with *-ba*. Note also that because the negative morphemes replace the realis tense endings, the two pasts (recent and simple) are no longer distinguished and become a single neutralized negated past form.

<i>Recent past ending in</i>				
-dai	-tai	-ragi	-raki	<i>Negation of all tenses</i>
	✓		✓	-pa
✓		✓		-ba

3.9. The irrealis tense

The irrealis tense is not very elaborate in that neither conditionals nor subjunctives create significant changes in the morphology of the verb. A suffix *-ro* is placed adjacent to the verb, implying that it is in the irrealis tense. Orthographically it is marked with a hyphen and *ro* to indicate that it is either a conditional or a subjunctive formation. Nevertheless, this morpheme {-ro} alone does not adequately indicate the whole notion of the irrealis, and so *waunlo*, which means *in case of* or *when/if*, is the periphrastic word that completes the notion of a condition.

The following statement (22) demonstrates this tense in Bakairi:

22. adi peba-ro waunlo ma, kafe kulelə apenkilimo

adi pe-ba-ro waunlo ma, kafe kulelə apenkilimo
 who has-NEG-may if EVID, coffee only it.3.make.PL

'When one may have nothing (to offer), they serve only coffee'

4. Final Remark

The present progressive is the most widely used tense in Bakairi, possibly because people engage in conversations about ongoing situations. Verbs are formed with the amalgamation of the verbal stem and affixes. Arguments of the verb (subject and object) are prefixes added to the verbal stem. Tense, aspect and modality are

incorporated as suffixes. Morphologically, the most important tenses are the present progressive and the recent past tenses. Both tenses directly determine how most derivations are formed. The recent past tense is very limited in use (exclusively about actions that taken place earlier today), but contains relevant phonological and morphological information. Plural markers can only be used for the 2pl and 3pl. Negation of a clause directly affects its realis marking. Realis tenses can be negated, but the realis suffixes must be erased altogether. Agglutination was only superficially mentioned here; however the authors hope that future studies will shed light on the morphology of other tenses, aspects and modalities of the Bakairi language.

5. Works Cited

- Dixon, R.W.M. *Basic Linguistic Theory volume 1*. Oxford, U.K.: Oxford University Press, 2010.
- Gildea, Spike. *On Reconstructing Grammar*. New York: Oxford University Press, 1998.
- Kornai, András. *Mathematical Linguistics*. Cambridge, MA: Springer-Verlag, 2008.