

Tira participant marking: the role of tone

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Tone minimal pairs

(1)

- a. kàvələ̀ðéŋî ‘s/he pulled **me**’ c. **lá**vələ̀ðó ‘**you and I** pulled’
b. kàvələ̀ðéŋí ‘**I** pulled him/her’ d. **là**vələ̀ðó ‘**they** pulled’

Tone indicates difference in

- subject/object role of participants (1a-b)
- person/number of participants (1c-d)

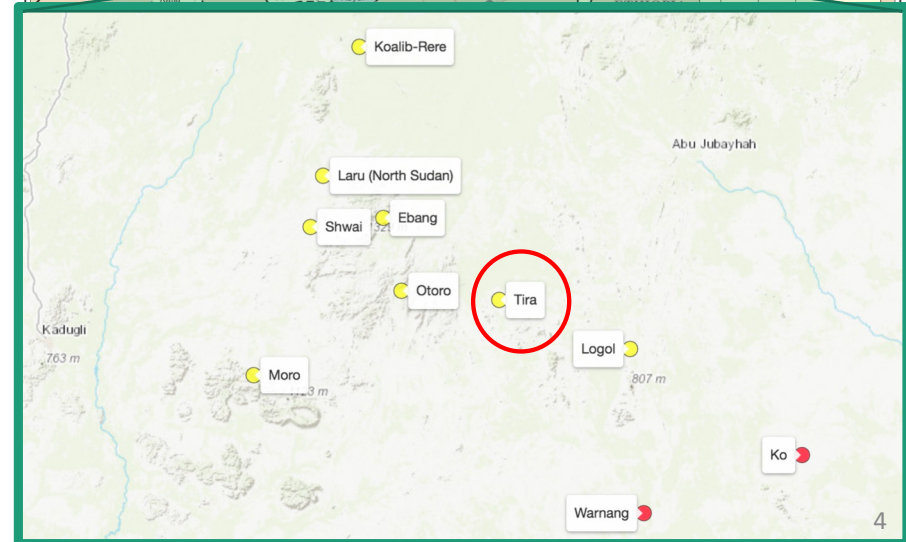
Goals

- provide description of patterns of participant marking on Tira verbs
- show how 3sg objects impact the position and form of other pronominal affixes
- determine how much of the verbal tone patterns are due to
 - phonological rules
 - lexical tone on affixes
 - grammatical tone marking

Tira

Tira is a West Heiban language of the Kordofanian family (Niger-Congo) spoken in the Nuba Mountains of Sudan.

All data come from the Kadar dialect of Tira provided by co-author Himidan Hassen, who is from the town of Kauda.



Previous research on Tira

- Stevenson, Roland C. 1942/2009.
Short grammar. No mention of tone.
- Watters, Kathie. 1993.
MA Thesis. Provides tone minimal pairs, brief discussion of tone in verb morphology.
- Shadeberg, Thilo C. 1981.
A survey of Kordofanian. Presents word lists.
- Alaki, Ngocco Kuku. 2017.
Conference paper. Provides an overview of the Lumun dialect of Tira by a native speaker.

Noun class system

- (2) a. **ǔ̀:**ɾì **ǔ̀-**ò:là c. **ŋ**ěn **ŋ-**ò:là
 (CLǔ̀).tree CLǔ̀-tall (CLŋ).dog CLŋ-tall
 ‘The tree is tall.’ ‘The dog is tall’
- b. **ù:**ɾì **g-**ò:là d. **ŋ**ěn **ŋ-**ò:là
 (CLg).tree CLg-tall (CLŋ).dog CLŋ-tall
 ‘The trees are tall.’ ‘The dogs are tall’

Noun class indicated by initial consonant with identical consonant for noun class agreement (2a, c-d)

Some nouns have initial vowel (2b); noun class determined by agreement.

Noun class agreement

(3)	S	V	O	
a.	ùrnò	gè-vàlèǎ-ó	ǎáηàlà	'grandfather pulled the sheep'
b.		kè-vàlèǎ-ó	ǎáηàlà	's/he pulled the sheep'
c.	ηǎn	ηè-vàlèǎ-ó	ǎáηàlà	'the dog pulled the sheep'
d.		ηè-vàlèǎ-ó	ǎáηàlà	'it (dog) pulled the sheep'

- Verb agrees with the noun class (g or η) of the subject (3a,c) or references a previously mentioned nominal (3b, d)
- Human participants generally belong to g (sg) / l (pl) class pairing
- no object agreement marking

Verbal tone and affixes

Perfective	kà-vàlèð-ó	's/he pulled'	L-LL-H	kà-rlèŋ-í	's/he chased'	L-L-H
Imperfective	ŋg-á-válêð-à	s/he will pull'	H-H \widehat{HL} -L	ŋg-á-rlêŋ-ò	s/he will chase'	H- \widehat{HL} -L

- Perfectives have a (L)L tone root pattern + H vowel suffix
- Imperfectives have a (H) \widehat{HL} tone root pattern + H vowel prefix + L vowel suffix
- Final aspect suffix is lexicalized - can be a variety of different vowel qualities
- 3sg perfective has k- for CLg (often lenited to [g]); Imperfective has ŋg- (or k-/g-)
- Technically, these are *ventive* perfective and *andative* imperfective – ventive imperfective and andative perfective are additional categories distinguished by tone and final vowels that we do not have space to analyze in this talk

Subject marking

Subject marking

Speech act participant (1st and 2nd person) subjects are indicated by a prefix
Tone distinctions among subject prefixes:

(4)

- a. *nà*-vələ̀ə̀ǎ́-ó úrnò ‘we (not you) saw grandfather’
b. *ná*-vələ̀ə̀ǎ́-ó úrnò ‘you all saw grandfather’

Tone distinctions between subject prefix and class agreement:

- c. *lǎ*-vələ̀ə̀ǎ́-ó úrnò ‘we two saw grandfather’
d. *lə̀*-vələ̀ə̀ǎ́-ó úrnò ‘they saw grandfather’

Subject marking – perfective

Forms used with a nominal object

SBJ	Person marker	Class marker	Ventive perfective X-LL-H	OBJ 'grandfather' CLASS g
1SG	jé-		jé-vàlèǾ-ó	úrǾ
2SG	á-		á-vàlèǾ-ó	úrǾ
3SG	--	kǾ-	kǾ-vàlèǾ-ó	úrǾ
1DU.INCL	lǎ-		lǎ-vàlèǾ-ó	úrǾ
1PL.INCL	lǎ- -r		lǎ-vàlèǾ-ó-í	úrǾ
1PL.EXCL	ɲǎ-		ɲǎ-vàlèǾ-ó	úrǾ
2PL	ɲǎ-		ɲǎ-vàlèǾ-ó	úrǾ
3PL	--	lǎ-	lǎ-vàlèǾ-ó	úrǾ

Noun class indexes 3SG/PL subjects; 1/2 person subjects have person markers;

Tone distinguishes person; Class marker indexes noun class and distinguishes number

Subject marking - imperfective

Forms used with a nominal object – imperfective has additional Cá-

SBJ	Person marker	Class marker	Imperfective X- á- H HL-L	OBJ 'grandfather' CLASS g
1SG	íŋ-	g-	íŋ-g-á-válêð-à	ùrnò
2SG	á-	g-	á-g-á-válêð-à	ùrnò
3SG	--	ŋg-	ŋg-á-válêð-à	ùrnò
1DU.INCL	á-	l-	á-l-á-válêð-à	ùrnò
1PL.INCL	á- -r'	l-	á-l-á-válêð-à-r'	ùrnò
1PL.EXCL	ŋà-	l-	ŋà-l-á-válêð-à	ùrnò
2PL	ŋá-	l-	ŋá-l-á-válêð-à	ùrnò
3PL	--	l-	l-á-válêð-à	ùrnò

Tone distinguishes person; Class marker distinguishes person

Object marking

Part 1: 1st and 2nd person object patterns

Part 2: 3rd person object patterns

Object marking

Part 1: 1st and 2nd person object patterns

1st & 2nd person object marking – perfective

When the subject is a **full nominal**, and the object is 1st or 2nd person: object markers appear as pronominal **suffixes** in perfective:

Subject 'grandfather' CLASS g	Perfective gè-vələ̀èḏ-ó	OBJ
ùrnò	gè-vələ̀èḏ-éŋî	1SG
ùrnò	gè-vələ̀èḏ-áŋâ	2SG
ùrnò	gè-vələ̀èḏ-áté	1DU.INCL
ùrnò	gè-vələ̀èḏ-áté-í	1PL.INCL
ùrnò	gè-vələ̀èḏ-éŋáré	1PL.EXCL
ùrnò	gè-vələ̀èḏ-áté	2PL

Aspect suffix -ó deletes before/coalesces with first vowel of the object suffixes:

ó-á → [á]

ó-í → [é] 1sg /-íŋî/

1st & 2nd person object marking – imperfective

When the subject is a **full nominal**, and the object is 1st or 2nd person: object markers appear as pronominal **prefixes**

Subject 'grandfather' Class g	Imperfective g-á-válêð-à	OBJ
ùrnò	g-éŋî-vàlèð-à	1SG
ùrnò	g-áŋâ-vàlèð-à	2SG
ùrnò	g-áté-válêð-à	1DU.INCL
ùrnò	g-áté-válêð-à-í	1PL.INCL
ùrnò	g-éŋár-válêð-à	1PL.EXCL
ùrnò	g-áté-válêð-à	2PL

Aspect prefix -á- and initial vowel of the person markers coalesce:
 á-á → [á]
 á-í → [é] 1sg /íŋî/

ex. /g-á-íŋî-vàlèð-à/ → [généŋîvèleðà]

1st & 2nd person object marking – imperfective

Tone on root is LL after prefixes with HL

Tone on root is H HL after prefixes with H

Subject 'grandfather' Class g	Imperfective á- XL-L	OBJ
ùrnò	g-éŋî-vəlèǾ-à	1SG
ùrnò	g-áŋâ-vəlèǾ-à	2SG
ùrnò	g-áté-vəlêǾ-à	1DU.INCL
ùrnò	g-áté-vəlêǾ-à-í	1PL.INCL
ùrnò	g-éŋár-vəlêǾ-à	1PL.EXCL
ùrnò	g-áté-vəlêǾ-à	2PL

Suggests tone on root is due to spreading from prefix

H tone spreading

Rightward H tone spreading is independently motivated
H tone spreads from verb to following object:

(5)

- a. kè-vəlèǎ-ó ǎàṅàlà 's/he pulled the sheep'
b. ṅg-á-vəlèǎ-à ǎàṅàlà 's/he will pull the sheep'

H tone spreading

(6)

- | | | | | |
|----|------------------------|--------------------|---|---------------|
| a. | Imperfective prefix á- | /ɲg-á-vəlèð-à/ | → | [ɲgávélêðà] |
| b. | Object prefix áɰé- | /ɲg-á-áɰé-vəlèð-à/ | → | [ɲgáɰéválêðà] |
| c. | Object prefix áɲâ- | /ɲg-á-áɲâ-vəlèð-à/ | → | [ɲgáɲâvəlèðà] |

Domain of tone spreading is verb phrase (VP)

Domain excludes subjects and subject prefixes:

- | | | | |
|----|-----------------|------------------|-----------------|
| c. | àprí jè-vəlèð-ó | ‘the boy pulled’ | * àprí jávélêðó |
| d. | á-vəlèð-ó | ‘you pulled’ | * áválêðó |

H tone spreading

Appearance of grammatical tone distinctions between perfective (LL) and imperfective (H HL) verb roots is due to H tone spreading

Perfective: kà-vàlèǎ-ó Low root + H toned suffix

Imperfective ŋg-á-válêǎ-à Low root + L toned suffix
+ H tone spreading from prefix

1st & 2nd person object marking - perfective

When the subject is pronominal, same pattern

SUBJ	1SG OBJ		2SG OBJ	
1SG	---		ǰé-vəlèð-áŋâ	'I pulled you'
2SG	á-vəlèð-éŋî	'you pulled me'	---	
3SG	kà-vəlèð-éŋî	'he pulled me'	kà-vəlèð-áŋâ	'he pulled you'
1PL.EXCL	---		ŋà-vəlèð-áŋâ	'we (not you) pulled you'
2PL	ŋá-vəlèð-éŋî	'you all pull me'	---	
3PL	lè-vəlèð-éŋî	'they will pull me'	lè-vəlèð-áŋâ	'they pulled you'

1st & 2nd person object marking - perfective

When the subject is pronominal, same pattern

SUBJ	1DU.INCL OBJ	1PL.INCL OBJ	1PL.EXCL OBJ	2PL OBJ
2SG	----	----	ά-νὰἐῖῑ-ἐῖῖῖ	----
3SG	κὰ-νὰἐῖῑ-ἄῖῖ	κὰ-νὰἐῖῑ-ἄῖῖ-ῖ	κὰ-νὰἐῖῑ-ἐῖῖῖ	κὰ-νὰἐῖῑ-ἄῖῖ
1PL.EXCL	---	---	---	ῖῖῖ-νὰἐῖῑ-ἄῖῖ
2PL	---	---	ῖῖῖ-νὰἐῖῑ-ἐῖῖῖ	---
3PL	λὰ-νὰἐῖῑ-ἄῖῖ	λὰ-νὰἐῖῑ-ἄῖῖ-ῖ	λὰ-νὰἐῖῑ-ἐῖῖῖ	λὰ-νὰἐῖῑ-ἄῖῖ

1st & 2nd person object marking - imperfective

When the subject is pronominal, same pattern

SUBJ	1SG OBJ		2SG OBJ	
1SG	---		ίη-g- άηâ -vələð-à	'I will pull you'
2SG	ά-g- άηî -vələð-à	'you will pull me'	---	
3SG	ηγ- άηî -vələð-à	'he will pull me'	ηγ- άηâ -vələð-à	'he will pull you'
1PL.EXCL	---		ηà-l- άηî -vələð-à	'we will pull you'
2PL	ηά-l- άηî -vələð-à	'you all will pull me'	---	
3PL	l- άηî -vələð-à	'they will pull me'	l- άηâ -vələð-à	'they will pull you'

1st & 2nd person object marking –imperfective

When the subject is pronominal, same pattern

SUBJ	1DUAL OBJ	1PL.INCL OBJ	1PL.EXCL OBJ	2PL OBJ
2SG	---	---	ά-g-έηάρ-βάλέδ-à	---
3SG	ηγ-άτέ-βάλέδ-à	ηγ-άτέ-βάλέδ-à-ρί	ηγ-έηάρ-βάλέδ-à	ηγ-άτέ-βάλέδ-à
1PL.EXCL	---	---	---	ηά-l-άτέ-βάλέδ-à
2PL	---	---	ηά-l-έηάρ-βάλέδ-à	---
3PL	l-άτέ-βάλέδ-à	l-άτέ-βάλέδ-à-ρί	l-έηάρ-βάλέδ-à	l-άτέ-βάλέδ-à

Summary structure – 1st and 2nd person object marking

	Nominal subject	Pronominal 3 rd subject	Pronominal 1 st or 2 nd subject
PFV	SBJ CL- <u>root</u> -(ASP)-OBJ	CL- <u>root</u> -(ASP)-OBJ	SBJ- <u>root</u> -(ASP)-OBJ
IPFV	SBJ CL-(ASP)-OBJ- <u>root</u> -ASP	CL-(ASP)-OBJ- <u>root</u> -ASP	SBJ-CL-(ASP)-OBJ- <u>root</u> -ASP

Object marking

Part 2: 3rd person object patterns

- A. Nominal subjects
- B. Pronominal subjects

Nominal subjects + 3rd person object

- when the object is a 3rd person pronominal, class agreement indexes the **object** instead of the **subject** (here **ǝ** for **ǝ̀àṅàlà** ‘sheep’)
- the nominal subject is post-verbal

Perfective:

- | | | | | |
|-----|----|-----------------|-------|--------------------------------|
| (7) | a. | V | S | |
| | | ǝ̀-̀v̀l̀è̀ǝ̀-̀ó | úr̀ǹ | ‘grandfather pulled it (CLǝ̀)’ |
| | b. | ǝ̀-̀v̀l̀è̀ǝ̀-̀ó | áprí | ‘the boy pulled it (CLǝ̀)’ |

Nominal subjects + 3rd person object

- accusative case marking can disambiguate post-verbal nominal subjects from post-verbal objects (8b,d)
- but not all nouns have overt case marking (8a,c)

Perfective:

	V	S	
(8)	a. ǎ̀ -vèlèǎ́-ó	úrò	‘grandfather pulled it (CLǎ́) ’
	b. ǎ̀ -vèlèǎ́-ó	áprí	‘the boy pulled it (CLǎ́) ’
	V	O	
	c. ǎ̀ -vèlèǎ́-ó	úrò	‘ it (CLǎ́) pulled grandfather ’
	d. ǎ̀ -vèlèǎ́-ó	áprí-ńá	‘ it (CLǎ́) pulled the boy-ACC ’

Nominal subjects + 3rd person object

- With imperfectives, the subject occurs after the imperfective á- and before the rest of the verb --> suggests preverb auxiliary CL-á
- post-auxiliary position distinguished from post-verbal object position (9b)
- post-subject verb root is low → lends support to the H-tone spreading analysis

Imperfective:

(9) a. Aux S V
 ǫ-á úrnò vèlèǫ-à ‘grandfather will pull it (CLǫ)’

cf. b. Aux-V O
 ǫ-á-vélêǫ-à ùrnò ‘it (CLǫ) will pull grandfather’

Generalization: If object is 3rd person pronominal, agreement indicates the object, and subject appears after verb / auxiliary

Nominal subjects + 3rd person object

3pl objects are indexed by class agreement (j- for *jàŋàlà* ‘sheep-pl’) and an additional affix -ló or -l

Perfective

- (9) a. V S
j-à-v-à-è-ǎ-ó-ló úrnò ‘grandfather pulled them (CLj)’

Imperfective

- b. Aux S V
j-á-l úrnò v-à-è-ǎ-à ‘grandfather will pull them (CLj)’

Pronominal subjects + 3rd person objects

If the object is 3rd person

→ class agreement indexes 3rd person objects

→ subject markers do not appear as prefixes before the verb (ex. á-g-á-válêďà), but as suffixes on the verb/auxiliary

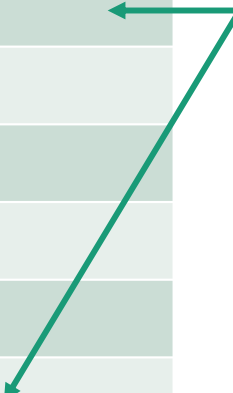
- (10) a. kə-vəlèď-éńí 'I pulled him/her'
 b. kə-vəlèď-áńá 'You pulled him/her'

→ suffix position parallels post-verbal nominal subject position if class agreement is object

Pronominal subjects + 3rd person object marking – Perfective

SUBJ	3SG OBJ
1SG	kə-vələð-éηí
2SG	kə-vələð-ána
3SG	kə-vələð-ó-η(ύ)
1DU.INCL	kə-vələð-áli
1PL.INCL	kə-vələð-áli-r
1PL.EXCL	kə-vələð-ána
2PL	kə-vələð-ána
3PL	kə-vələð-ól

3rd person subjects also have distinct affixes as class agreement is unavailable



Pronominal subjects + 3rd person object marking – Perfective

additional –ló or –l suffix indicating 3PL OBJ observed in most forms

SUBJ	3SG OBJ	3PL OBJ
1SG	kə-və̀lèð-éηί	lə-və̀lèð-é-ló
2SG	kə-və̀lèð-áηά	lə-və̀lèð-á-ló
3SG	kə-və̀lèð-ó-η(ύ)	lə-və̀lèð-ó-l-óη(ύ)
1DU.INCL	kə-və̀lèð-άλί	lə-və̀lèð-άλί
1PL.INCL	kə-və̀lèð-άλί-r	lə-və̀lèð-άλί-r
1PL.EXCL	kə-və̀lèð-áηâ	lə-və̀lèð-áηâ-l
2PL	kə-və̀lèð-άηά	lə-və̀lèð-άηά-l
3PL	kə-və̀lèð-ζί	lə-və̀lèð-ζί-ló

Pronominal subjects + 3rd person object marking – Imperfective

3PL has extra –l or ló

SUBJ	3SG OBJ	3PL OBJ
1SG	ηg-é-válêð-à	l-é-í-válêð-à
2SG	ηg-á-válêð-à	l-á-í-válêð-à
3SG	ηg-á-η-válêð-à	l-á-η-é-í-válêð-à
1DU.INCL	ηg-ál-válêð-à	l-á-ló-válêð-à
1PL.INCL	ηg-ál-válêð-à-í	l-á-ló-válêð-à-í
1PL.EXCL	ηg-éηâ-vàlèð-à	l-éηâ-í-válêð-à
2PL	ηg-éηá-válêð-à	l-éηá-í-válêð-à
3PL	ηg-á-l-vàlèð-à	l-á-l-ló-válêð-à

Subject affixes that end in a L tone block H tone spreading onto root

But the 3PL –l or ló has a High tone which spreads.

Subject affix forms - perfective

Forms of subject affixes are not the same in pre-verbal vs. post-verbal position

	PRE-VERBAL PREFIXES	POST-VERBAL SUFFIXES
1SG	jé-	-éηί
2SG	á-	-άηά
3SG	--	-η(ύ)
1DU.INCL	lá-	-άλί
1PL.INCL	lá- -r	-άλι-r
1PL.EXCL	ηà-	-άηâ
2PL	ηά-	-άηά
3PL	--	-ζί

Subject affix forms - imperfective

Forms of subject affixes are not the same in pre-verbal vs. post-verbal position

SUBJ	PRE-VERBAL PREFIXES	POST-AUX SUFFIXES
1SG	íŋ-	-é-
2SG	á-	-á-
3SG	--	´ŋ
1DU.INCL	á-	-ál
1PL.INCL	á- -´	-ál- -´
1PL.EXCL	ŋà-	-íŋâ
2PL	ŋá-	-íŋá
3PL	--	÷

Summary structure – 3rd person object marking

	Nominal subject	Pronominal subject
PFV	CL- <u>root</u> -ASP-3PLOBJ SBJ	CL- <u>root</u> -(ASP)-SBJ-3PLOBJ
IPFV	CL-ASP-3PLOBJ SBJ <u>root</u> -ASP	CL-(ASP)-SBJ-3PLOBJ <u>root</u> -ASP

Tone distinctions

1sg and 2sg post-verbal subject and object affixes in perfective are segmentally identical, but tonally distinct:

(11)

- a. k^è-v^èl^èð-é^í 'I pulled him/her'
- b. k^è-v^èl^èð-á^á 'You pulled him/her'
- c. k^è-v^èl^èð-é^î 'He/she pulled me'
- d. k^è-v^èl^èð-á^â 'He/she pulled you'

Tone distinctions

Most plural post-verbal subject and object affixes are tonally identical, but segmentally distinct:

(12)

- a. **k**è-vəlèǰ-**á**ŋá 'You all pulled **him/her**'
b. **k**è-vəlèǰ-**á**ʦé 'He/she pulled **you all**'
- c. **k**è-vəlèǰ-**á**lí 'We two pulled **him/her**'
d. **k**è-vəlèǰ-**á**ʦé 'He/she pulled **us two**'

Tone distinctions

Tone distinctions for plural participants are found *between* subjects:

(13)

- a. kà-vəlèǎ-áǎá 'you all pulled him/her'
b. kà-vəlèǎ-áǎâ 'we (excl) pulled him/her'

but not between objects:

- c. kà-vəlèǎ-áǎé 'He/she pulled you all'
d. kà-vəlèǎ-áǎé 'He/she pulled us two'

Tone as indicator of subject/object

Tone can indicate the role of the participant as a subject or object for some forms

But this is due to *lexical tone* distinctions for the affixes rather than grammatical tone marking participant role in any consistent manner:

2SG.SUBJ	áŋá	H H
2SG.OBJ	áŋâ	H H̄L

Concluding remarks

Tira verbal participant marking has a series of affixes that index subject and object participants

- class agreement that can index either subject or 3rd person object
- pre-verbal/pre-aux subject prefixes (when object is not 3rd person pronominal)
- post-verbal/post-aux subject suffixes (when object is 3rd person pronominal)
- 1st and 2nd object affixes + 3pl object affix

Concluding remarks

Tone can distinguish

- subject/object function of certain participants
- person of certain subject participants
 - tone is lexically specified on affixes

H tone spreading from aspect prefixes and subject/object prefixes creates tone distinctions on verb stems

→ phonologically predictable, not grammatical tone

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