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Tense, Aspect, Mood, and Tone in Shekgalagari

Thera Crane

1. Introduction and goals

Shekgalagari (updated Guthrie number S.31d (Maho 2003) is a Bantu language spoken in western Botswana and parts of eastern Namibia. It is closely related to Setswana, but exhibits a number of phonological, morphological, and tonal phenomena not evident in Setswana. It has been described by Dickens (1986), but its complex Tense, Aspect, and Mood (TAM)-marking system remains largely undescribed. This paper represents an effort to initiate such a description. It is by no means complete, but I hope that it may spur further investigation and description. Data were collected in the spring semester of 2008 at the University of California, Berkeley, in collaboration with Dr. Kemmonye "Kems" Monaka, a native speaker and visiting Fulbright Scholar from the University of Botswana. All errors, of course, are my own.

Data for this paper were collected as part of a study of Shekgalagari tone and downstep involving Dr. Monaka, Professor Larry Hyman of the University of California, Berkeley, and myself. Data are drawn from my notes and those of Professor Hyman, and from personal communications with Dr. Monaka. Because the primary aim of the study was not the description of the TAM system as such, a number of forms were not elicited and are missing from this document. All need further investigation in terms of their semantics, pragmatics, and range of uses. Particular areas of interest for future study are noted throughout.

1.1. Structure of paper

Section 2 gives a general introduction to tone in Shekgalagari and important tone processes, including phrasal penultimate lengthening and lowering (2.2), spreading rules including grammatical H assignment (with "unbounded spreading"; 2.3) and bounded high-tone spreading (2.4), and downstep (2.5). A basic introduction to Shekgalagari's downstep, spreading, and lowering operations is crucial to understanding the tone of tense, aspect, and mood.

Section 3 introduces verbs in Shekgalagari, including their basic lexical tone patterns, subject markers (3.1), object markers (3.2), and final vowels. (3.3). There are at least five distinct subject marker series in Shekgalagari, with distinct forms and tone/spreading patterns. Object markers appear to be the same across all TAMs, and final vowels pattern basically according to reality status, although several categories where irrealis marking might be expected do not take an explicitly irrealis final vowel.

Section 4 gives a basic outline of tense, aspect, and mood marking in main clauses in Shekgalagari. 4.1 outlines morphologically marked distinctions of temporal distance (tense, including degrees of present and future marking). Past tense (4.1.1) also makes a clear distinction between perfective and imperfective aspect (sections 4.1.1.1 and 4.1.1.2, respectively). Present tense (4.1.2) functions as both perfective and imperfective (simple present, progressive, habitual), and includes a final morpheme not seen elsewhere in the system. The future (4.1.3) does not have as many or as clear distance or aspectual distinctions as the past.

Section 4.2 outlines further TAM distinctions. Section 4.2.1 deals with anterior (perfect) marking, which overlaps with past-tense marking. 4.2.1.1 gives a brief description of forms ending in *-ile*, a common marker of anterior aspect or past tense (among other things) across Bantu; its semantics in Shekgalagari require further investigation. Other TAM distinctions discussed include habitual (4.2.2), persistive ('still'; 4.2.3), potential (4.2.4), imperative (4.2.5), hortative (4.2.6), and counterexpectatives (4.2.7). These sections also include discussions of some of the more complex tone patterning found with these constructions.

In section 5, conditional and counterfactual constructions are briefly presented. Section 6 briefly discusses future research and relative clauses.

1.2. Notational conventions

Notational conventions:

Numeral subscripts after subject markers (SMs) indicate the SM series number, detailed in 3.1.2. For example, SM$_2$ indicates that the subject marker is from series 2.

i) Downstep that always occurs is indicated by a ꜝ symbol. When downstep occurs only in certain cases, depending on the surrounding tones (which may be H or toneless) the ꜝ symbol is enclosed in parentheses and followed by a subscript:
   a. (ꜝ$_1$) indicates that a syllable is downstepped if the previous syllable is H (due to H-tone spreading);
   b. (ꜝ$_2$) indicates downstep if the SM is H (see SM tables in section 3.1).

Examples are given using the 3pl (class 2) subject marker and four-syllable toneless stem -*tutulula* 'disrespect' so that the tone patterns imposed by the TAMs are as transparent as possible; the subject marker series is also given for each subject marker that appears.

If certain forms are nonexistent in Shekgalagari, the corresponding slot in the charts is marked with an asterisk (*). Empty slots may be understood as open questions.

Glossing abbreviations are given in appendix B.

The present outline is concerned mainly with the form of Shekgalagari tense, aspect, and mood marking. Much further work is needed on the specific semantics and pragmatics of Shekgalagari TAM, which will surely prove a fruitful area of research.

2. Tone in Shekgalagari

Shekgalagari is analyzed in Crane (2009) as having a privative (H/Ø) tone system, in which only H tones play a role in tonal processes of spreading and downstep. This analysis is assumed in the present paper, and, except in a few early examples, only H tones are marked.

Vowels and moraic nasals (i.e. nasals not in onset position of a CV syllable) are tone-bearing units (TBUs) in Shekgalagari. Each syllable in Shekgalagari has exactly one TBU[1], so the words syllable and TBU may be considered interchangeable in terms of tonal processes.

Phonetically, there are a number of tone levels in Shekgalagari:

i) H tones
ii) Downstepped H (ꜝH) tones, which are lower than preceding Hs (or downstepped Hs)
iii) Mid tones, which result when a toneless TBU occurs between two Hs (HØH → HMH)
iv) Low tones, the phonetic realization of toneless TBUs not surrounded by H tones

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[1] This is the case before penultimate lengthening and lowering occurs; see section 2.2.

v) Falling tones, which may be HL or L$^{!}$L, occurring at the end of a phrase with penultimate lengthening and lowering (see section 2.2).

Shekgalagari has virtually no perceivable downdrift; Hs at the end of a series of Hs and toneless syllables have approximately the same pitch the series-initial Hs.

2.1. Plateauing

As noted above, a toneless syllable between two H tones is phonetically realized as a mid-level tone. This tone may optionally raise to the level of the two surrounding Hs.

(1) shí-bal-ɛ́ [shí-bā-lɛ́] [HMH] → [shíbálɛ́] [HHH]
CL7.OM-count-FV.IRR
‘count it$^{!}$ (imp.)’

H-plateauing is an optional but common post-lexical process. It is not the result of spreading.

2.2. Phrasal penultimate lengthening and lowering (PLL)

Declarative phrases in Shekgalagari undergo a pervasive process of penultimate lengthening in pre-pausal position. An example of PLL is illustrated in (2), with the post-PLL form on the right. (3) shows that it is a phrase-level operation.

(2) χopánı (ØHØ) → χòpá:nì[LH:L] / __%
‘iguana’

(3) χʊ-bal-a χopánı → χʊ̀bàlà χòpá:nì [LLL LH:L]

In addition to penultimate lengthening, phrases ending in two like tones (HH or ØØ) lower the lengthened penultimate syllable. This is illustrated for a HH-final noun in (4).

(4) tsítsírí (HHH) → tsítsî:rì [HF:L] / __%
‘bedbug’

The behavior of possible combinations of final tones with phrasal PLL is given in (5). Syllables are divided by dashes, and lengthened syllables are illustrated by the insertion of a tone-bearing unit, following Hyman and Monaka (2008), who analyze PLL as the insertion of a TBU and a L% intonational feature. Examples are given using the notation used throughout this paper.

(5) Tone patterns and PLL

FINAL TONES	WITH PLL (PHONETIC)	EXAMPLE			
Ø-Ø	L$^{!}$L-L	kala	‘friend’	→	kà:là
Ø-H	LL-H	tarí	‘thunder’	→	tà:rí
H-Ø	HH-L	k^{h}éfi	‘poison’	→	k^{h}é:fì
H-H	HL-L	nárí	‘buffalo’	→	nâ:rì

There is no PLL in non-declarative phrases such as questions and imperatives, including most hortatives. Ideophones do not participate in PLL, but do exhibit final devoicing. Additionally, declarative phrases ending in a monosyllabic word (e.g. some adverbs and demonstratives) fail to undergo PLL. For a detailed description of PLL and its pragmatic conditioning, see Hyman and Monaka (2008).

(5) a. χʊ-bɔ̂:n-a (infinitive, declarative form, PLL)
CL15(INF)-see-FV
‘to see’

b. χʊ-bɔ́n-á (infinitive, question intonation, no PLL)
CL15(INF)-see-FV
‘to see?’

c. bɔ́n-a (imperative, no PLL)
see-FV
‘see!’

d. á !bá-bɔ́n-ɛ (hortative, PLL optional)
HORT 3PL-see-FV.IRR
‘let them see’

e. χʊ-bɔ́n-a ʒwá (monosyllable-final phrase, no PLL)
CL15(INF)-see-FV in.this.way
‘to see in this way’

Forms are given throughout this paper in their surface, PLL forms. Pre-PLL forms may be inferred using the table in (5) above.

2.3. Grammatical H assignment

Tone in Shekgalagari may be assigned both lexically and grammatically. Certain tenses, aspects, and moods assign a H tone to the second syllable of the verb root. This H tone spreads to the penultimate syllable pre-pausally:

(6) Unbounded spreading to penult pre-pausally

a. tátáríéts-à ‘be insistent!’ (imp), -tátarietsa, H1
be.insistent-IMP.FV

tá **tá** rí é tsà	
H H Ø Ø Ø	**INPUT TONES (GRAMMATICAL H ON 2ND ROOT SYLLABLE**
H H H H Ø	**UNBOUNDED H SPREADING TO PENULT**

b. hà-bá-tʊ̀tʊ́lʊ́l-ɛ̀ ‘they don’t disrespect’ (pres. neg.), -tʊtʊlʊla, Ø
NEG-3PL-disrespect-FV.IRR

hà bá tʊ̀ **tʊ́** lʊ́ lɛ̀	
Ø H Ø H Ø Ø	**INPUT TONES (GRAMMATICAL H ON 2ND ROOT SYLLABLE)**
Ø H Ø H H Ø	**UNBOUNDED H SPREADING TO PENULT**
Ø H Ø H H Ø	**NO BOUNDED SPREADING (BLOCKED BY OCP)**

Under some conditions, this H spreads to the final vowel. See Crane (2009) for a more complete description.

Some TAMs also have a final H pre-pausally. These include the hortative (7) and the negative imperative (8).

(7) á ꜝbá-tʊ́tʊlʊl-ɛ́
HORT 3PL-disrespect-FV.IRR
'let them disrespect'

(8) shɪ-tʊtʊ́lʊ́l-ɛ́
NEG-disrespect-FV.IRR
'don't disrespect!'

The sections below give a more detailed exposition of TAM and H assignment.

2.4. Bounded H-tone spreading (HTS)

Bounded H-tone spreading is a general, pervasive, word-internal process in Shekgalagari in which a H tone spreads one syllable to the right to an adjacent toneless syllable, unless that syllable is immediately followed by a H tone; in this case, bounded HTS is blocked. Bounded HTS is schematized in (9) and exemplified in (10) and (11).

(9) Bounded HTS in Shekgalagari
a. HØ → HH (10)
b. HØH → HØH (bounded HTS blocked) (11)

(10) Bounded H spreading
a. χʊ̀-χáqʊ́lʊ:l-à 'to remind' (inf.) -χáqʊlʊla, H1
CL15(INF)-remind-FV
χʊ̀ **χá** qʊ́ lʊ̀ là
Ø H Ø Ø Ø **INPUT TONES**
Ø H H Ø Ø **BOUNDED H SPREADING (FROM H-TONED ROOT)**

b. χʊ̀-bá-tʊ́tʊ̀lʊ̀l-à 'to disrespect them' (inf.) -tʊtʊlʊla, Ø
CL15(INF)-3PL.OM-disrespect-FV
χʊ̀ **bá** tʊ́ tʊ̀ lʊ̀ là
Ø H Ø Ø Ø Ø **INPUT TONES**
Ø H H Ø Ø Ø **BOUNDED H SPREADING (FROM H-TONED OM)**

(11) Bounded H spreading blocked
bá-mʊ̀-χáqʊ́lʊ̀l-à-χɔ́ 'they remind him' (pres. aff.), - χáqʊlʊla, H1
3PL-2SG.OM-remind-FV-XO
bá mʊ̀ χá qʊ́ lʊ̀ là χɔ́
H Ø H Ø Ø Ø H **INPUT TONES**
H Ø **H** H Ø Ø H **SM SPREADING BLOCKED BY FOLLOWING (ROOT-INITIAL) H; (BOUNDED H SPREADING FROM ROOT)**

2.5. Downstep

Downstep occurs across word boundaries in some cases in Shekgalagari, when two H tones meet separated by at most one toneless syllable. An intervening toneless syllable assimilates to the following downstepped H.

(12) Downstep in Shekgalagari

a. H #H → H # !H (13)
b. H # ØH → H # !HH (14)
c. HØ #H → H!H # H (15)

(13) H # H → H # !H
shɪ-tʊtʊ́lʊ́l-ɛ́ !tsítsírí ‘don’t disrespect the bedbug!’ (neg. imp), -tʊtʊlʊla, Ø
neg.imp-disrespect-fv.neg.imp bedbug
shɪ tʊ tʊ́ lʊ́ lɛ́ # !tsí tsí rí
Ø Ø H Ø H # H H H **INPUT TONES (GRAMM. H ON 2ND ROOT σ AND FV)**
Ø Ø H H H # H H H **UNBOUNDED H SPREADING TO PENULT**
Ø Ø H H H # !H H H **DOWNSTEP: H # H → H # !H**

(14) H # Ø H → H # !H H
χʊ̀-gy-á !χɔ́pá:nì ‘to eat an iguana’ (inf), -gyá, H1
CL15(INF)-eat-FV 9.iguana
χʊ gyá # !χɔ́ pá nɪ
Ø H # Ø H Ø **INPUT TONES**
Ø H # Ø H: Ø **PLL**
Ø H # !H H: Ø **DOWNSTEP: H # Ø H → H # !H H**

(15) H Ø # H → H !H # H
χʊ̀-χópʊ́!l-á tsítsî:rí ‘to remember the bedbug’ (inf), -χópʊla, H1
CL15(INF)-remember-FV bedbug
χʊ χó pʊ́ !lá # tsí tsî: ri
Ø H Ø Ø # H H H **INPUT TONES**
Ø H H Ø # H H H **BOUNDED H SPREADING**
Ø H H Ø # H HL: Ø **PLL**
Ø H H !H # H HL: Ø **DOWNSTEP: H Ø # H → H !H # H**

Not every H(Ø)H meeting across word boundaries results in downstep

(16) a. shì-bɔ́n-ɛ́ !kyélèlé [Ø-H-H # !HØH]
NEG-look-FV.NEG.IMP large.intestine
‘don’t look at the large intestine!’

b. shì-bɔ́n-ɛ́ hóm̀bé [Ø-H-H # HØH]
NEG-look-FV.NEG.IMP today
'don't look today!'

This difference is related to both word class and TAM. NPs always downstep after verbs, but function words downstep only after verbs in certain tenses, aspects, and moods. Other word classes behave differently with respect to downstep according to TAM, as well. It will be seen throughout this paper, for example, that irrealis moods (including negative forms) more frequently involve downstep than do their realis counterparts. The table in (17) shows the distribution of selected tenses, aspects, and moods with regard to whether they condition downstep with following function words.

(17) Distribution of (selected) TAMs with regard to downstep of function words

	BOUNDED SPREAD	**UNBOUNDED SPREAD TO PENULT (Ø FV)**	**HIGH FV**
NO DOWNSTEP WITH FUNCTION WORDS ("CONJUNCTIVE")	present (Ø-toned SM) potential past (perfective) infinitive *(no spread to FV before function word)*	imperative *(no spread to FV before function word)*	*unbounded spread*: negative imperative future persistive negative (present (H-toned SM))[2] *no unbounded spread*: hortative
DOWNSTEP WITH FUNCTION WORDS ("DISJUNCTIVE")	imperfective *(spread to FV before function word)*	present negative *(spread to FV)*	imperative with OM *-ile* (anterior)

Further analysis of downstep in Shekgalagari is beyond the scope of this paper, but see Crane (2009) for a detailed description and analysis of downstep conditioning in Shekgalagari in terms of minor-phrase formation. This paper follows that analysis, and analyzes constituents between which downstep may occur as separate words.

2.5.1. Lowering of downstepped syllables

Downstepped monosyllables obligatorily lower to Ø pre-pausally (18). Downstepped syllables followed by toneless syllables optionally lower to Ø (19). Throughout this paper, examples are given with downstepped Hs (ꜝHØ rather than ØØ) for the sake of clarity, but it should be noted that the lowered versions are possible and in some cases may be preferred to the ꜝHØ alternatives.

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[2] The present tense with a H-toned subject marker is a special case of spreading due to the loss of a H-toned suffix -*χɔ́*. No downstep occurs. For details, see the online appendices.

(18) Downstepped monosyllables obligatory lower before a pause
ha-bá-tʊtʊ́lʊ́l-ɛ́ ʒwa ‘they don’t disrespect in this way’ (pres. neg),
NEG-3PL-disrespect-FV.NEG in.this.way -tʊtʊlʊla, Ø
ha bá tʊ tʊ́ lʊ́ lɛ́ # ʒwa
Ø H Ø H Ø Ø # H **INPUT TONES**
Ø H Ø H H H # H **UNBOUNDED H SPREADING TO FV PHRASE-MEDIALLY**
Ø H Ø H H H # !H **DOWNSTEP: H # H → H # !H**
Ø H Ø H H H # Ø **LOWERING: # !H % → # Ø**

(19) Downstepped monosyllables optionally lower before a toneless syllable
ha-bá-tʊtʊ́lʊ́l-ɛ́ zala:nɔ ‘they don’t disrespect friendship’ (pres. neg),
NEG-3PL-disrespect-FV.NEG friendship -tʊtʊlʊla, Ø
hà bá tʊ tʊ́ lʊ́ lɛ́ # za la nɔ
Ø H Ø H Ø Ø # H Ø Ø **INPUT TONES**
Ø H Ø H H H # H Ø Ø **UNBOUNDED H SPREADING TO FV PHRASE-MEDIALLY**
Ø H Ø H H H # !H Ø Ø **DOWNSTEP: H # H → H # !H**
Ø H Ø H H H # Ø Ø Ø **LOWERING: !HØ → ØØ**

3. Shekgalagari verbs

Shekgalagari verbs fall into three tone classes:

i) those which are underlyingly toneless (Ø roots)
ii) those which are underlyingly H-toned and allow bounded H-toned spreading from the root to the following syllable (H1 roots)
iii) those which are underlyingly H but do not allow bounded rightward spreading (H2 roots)

The basic tonal pattern of these verbs is illustrated with the infinitive (class 15 χʊ-) in (20). Surface forms are given both as if the forms were in non-phrase-final position, and with phrase-final penultimate lengthening and lowering (PLL).

(20) Shekgalagari verb tone patterns

a. Toneless root

ROOT SYLL	**NON-FINAL**	**FINAL WITH PLL**	**GLOSS**
1	χʊ̀kà	χʊ̀:kà	‘to mention’
2	χʊ̀bàlà	χʊ̀bà:là	‘to read, count’
3	χʊ̀hàphʊ̀là	χʊ̀hàphʊ̀:là	‘to slap’
4	χʊ̀tʊ̀tʊ̀lʊ̀là	χʊ̀tʊ̀tʊ̀lʊ̀:là	‘to disrespect’

b. H1 (spreading) root

ROOT SYLL	**NON-FINAL**	**FINAL WITH PLL**	**GLOSS**
1	χʊ̀há	χʊ̀:há	‘to give’
2	χʊ̀bɔ́ná	χʊ̀bɔ̂:nà	‘to see’
3	χʊ̀χópʊ́là	χʊ̀χópʊ́:là	‘to think, remember’
4	χʊ̀χáqʊ́lʊ̀là	χʊ̀χáqʊ́lʊ̀:là	‘to remind’

c. H2 (non-spreading) root

ROOT SYLL	**NON-FINAL**	**FINAL WITH PLL**	**GLOSS**
1		–	–
2	χʊ̀lísà	χʊ̀lí:sà	‘to herd’
3	χʊ̀lálèʒà	χʊ̀lálè:ʒà	‘to invite’
4	χʊ̀tʊ́ʊ̀lʊ̀là	χʊ̀tʊ́ʊ̀lʊ̀:là	‘to cause to cease from a habit’

Most H2 verbs in Shekgalagari can be traced to Proto-Bantu roots with long vowels:

(21) Shekgalagari non-spreading H verbs and their PB counterparts

	SHEKGALAGARI		***PROTO-BANTU**[3]
a.	χʊ̀-lɔ́pá[4]	‘to request’ (H1)	*-dɔ́mb-
b.	χʊ̀-lɔ́rà	‘to dream’ (H2, no spread)	*-dɔ́ɔ́t-
c.	χʊ̀-lálèʒà	‘to invite’ (H2)	*-dáádek-

It thus seems likely that spreading originally applied in these verbs, but was subsequently lost with the loss of vowel length.[5]

3.1. Subject markers

There are at least five subject marker (SM) patterns in Shekgalagari, which co-occur with various markers of tense, aspect, and mood.

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[3] PB roots taken from the Comparative Bantu Online Dictionary, http://www.linguistics.berkeley.edu/CBOLD/Docs/Guthrie.html

[4] For the reader’s convenience, these and other forms in the table are given in their non-PLL forms

[5] See Meeussen (1955) for an early discussion of vowel-length loss and the lack of H-tone spreading, based on a case study of Shambala.

(22) Shekgalagari subject marker series

SERIES	**1**	**2**	**3[6]**	**4**	**5**
FORM	qà (Ø) wà (Ø) à (Ø) há (H) lá (H) bá (H)	kí (H) ʊ́ (H) í (H) hí (H) lí (H) bí (H)	ŋ́[7] (H) ʊ́ (H) á (H) há (H) lá (H) bá (H)	kí (H) ʊ́ (H) ʊ̀ (Ø) hí (H) lí (H) bá (H)	kí (H) ʊ́ (H) á (H) hí (H) lí (H) bá (H)
OCCURS WITH[8]	pasts (incl. ant. and hort.) *on main verb in compound constructions*: pot. imm. fut.; neg hort. fut.; neg potential	imperfective	(affirmative) potential	present (incl. future aux.[9])	hortative; persistive (except present persistive); neg. present before neg. sháa

The SM series merit further investigation. It may be noted that there are three possible tone patterns:

i) Singular SMs referring to persons are toneless, while plural persons (as well as all other SMs; see below) are H toned (series 1)
ii) All SMs are H toned, except for third-person singular (as well as class 4 and 9; see below), which are toneless (series 4)
iii) All SMs are H toned (series 2, 3, and 5).

3.1.1. Subject markers and bounded H-tone spreading

H tones from certain subject markers pattern in three ways:

i) No spread if followed by a TAM marker
ii) Spread one syllable rightward to adjacent root or object marker (OM)
iii) Spread to adjacent OM but not to adjacent root.

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[6] Series 3 SMs surface as low toned before H-toned *qá* in the present potential (and other potentials formed with H-toned *qá*), and before other TAM markers in various contexts, as shown in the sections below.

[7] Because series 3 SMs are always followed by the potential marker *qa*, the first person singular marker always surfaces as velar nasal [ŋ].

[8] This is not meant to be an exhaustive list, but is generally representative.

[9] e.g. present tense SM + *-da* (‘come’), e.g. *bádá*

(23) Shekgalagari SMs and H-tone spreading (HTS)

SERIES	**1**	**2**	**3**	**4**	**5**
FORM	qà (Ø) wà (Ø) à (Ø) há (H) lá (H) bá (H)	kí (H) ʊ́ (H) í (H) hí (H) lí (H) bí (H)	ŋ́ (H) ʊ́ (H) á (H) há (H) lá (H) bá (H)	kí (H) ʊ́ (H) ʊ̀ (Ø) hí (H) lí (H) bá (H)	kí (H) ʊ́ (H) á (H) hí (H) lí (H) bá (H)
HTS TO ROOT	N	Y	N/A	Y	Y[10]
HTS TO OM	Y	Y	N/A	Y	Y

Note that all SM H-tone spreading must respect the OCP; a H tone will not spread to an adjacent toneless syllable that immediately precedes a H-toned syllable:

(24) a. bá-χʊ́-kɛ:l-a
3PL-2SG-mention-FV
'they mentioned you' (spread to toneless OM)

b. bá-χʊ-bɔ̂:n-a
3PL-2SG-see-FV
'they saw you' (no spread to toneless OM before H1 root)

3.1.2. Subject marker series: form, spreading, and distribution properties

The following sections exemplify each of the subject marker series in turn, with one or more examples of the TAMs in which they occur. When known, non-person subject markers are given as well. Examples are given using the toneless bisyllabic stem *-bala* 'read, count', to show subject marker spreading if it occurs.

3.1.2.1. Series 1

3.1.2.1.1. Series 1: Form

Only the singular persons are toneless in series 1; all other subject markers are H toned.

(25) Series 1: Immediate past *'X (just now) counted'*

1sg	qa-ba:la
2sg	wa-ba:la
(cl 1) 3sg	a-ba:la
1pl	há-ba:la
2pl	lá-ba:la
(cl 2) 3pl	bá-ba:la

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[10] Series 5 SM H tones often fail to spread to the verb: either they precede another TAM marker (and do not spread to it) or they precede a Ø-H sequence, which does not allow spreading. Series 5 SMs do spread in the hortative, e.g. á !bá-tʊ́tʊlʊl-ɛ́. See tables A14 and A15 in the appendix for further examples and full paradigms

The other noun class subject markers are as follows for series 1:

(26) Series 1: non-person subject markers

CLASS	**SM**
3	wá-
4	yá-
5	lá-
6	á-
7	shá-
8	zá-
9	yá-
10	zhá-
11	lwá-
14	zhá-
15	χá-

3.1.2.1.2. Series 1: Distribution

As noted above, series 1 subject makers occur primarily in perfective pasts (including anteriors and hortatives). They also appear on the main verb in at least the following compound constructions (exemplified in 4.2.4 and 4.2.6 below): negative potential, immediate future potential, and hortative future negative. In general, then, subject markers appear on main verbs with perfective aspect.

3.1.2.1.3. Series 1: Spreading properties

H tones on series 1 SMs fail to spread to adjacent toneless roots:

(27) há-ba:l-a
1PL-read-FV
'we (just now) counted'

However, they do spread to adjacent toneless object markers:

(28) há-χʊ́-ba:l-a
1PL-2SG-count-FV
'we counted you'

3.1.2.2. Series 2

3.1.2.2.1. Series 2: Form

Series 2 subject markers are H-toned, and, with the exception of 2sg, end in ɪ́.

(29) Series 2: Recent past imperfective *'X was (recently) counting'*

1sg láábe kí-bá:la

2sg láábe ʊ́-bá:la

(cl 1) 3sg láábe í-bá:la

1pl láábe hí-bá:la

2pl láábe lí-bá:la

(cl 2) 3pl láábe bí-bá:la

3.1.2.1.2. Series 2: Distribution

Series 2 SMs mark imperfective aspect and occur in many constructions in which the situation described in the main verb is construed as imperfective. They generally occur with future tense constructions, as well, whether the English translation is progressive or not.

3.1.2.1.3. Series 2: Spreading properties

The H tone on all series 2 SMs spreads to adjacent roots:

(30) láábe hí-bá:l-a
REC.PST 1PL-count-FV
'we were counting (recently)'

Likewise, the H-tones spread to adjacent toneless object markers:

(31) láábe hí-χʊ́-ba:l-a
REC.PST 1PL-2SG-count-FV
'we were counting you (recently)'

3.1.2.3. Series 3

In collected data, series 3 subject markers only appear directly adjacent to the potential marker *qa*.

3.1.2.3.1. Series 3: Form

The tonal properties of series 3 markers require further investigation. When used in the past tense, all are H-toned, and the potential marker *qa* is toneless (32). In present-tense constructions (including immediate future, when the present tense may be assumed for the future-marking verb), series 3 SMs are toneless, while *qa* is H-toned (33). The nasal 1sg marker assimilates to the uvular stop of potential *qa*.

(32) Series 3: Today past potential *‘X could count’* (H-toned)

1sg	ńde ŋ́ qa ba:la
2sg	ńde ʊ́ qa ba:la
(cl 1) 3sg	ńde á qa ba:la
1pl	ńde há qa ba:la
2pl	ńde lá qa ba:la
(cl 2) 3pl	ńde bá qa ba:la

(33) Series 3: Present potential *‘X can count’* (toneless)

1sg	ŋ qá ba:la
2sg	ʊ qá ba:la
(cl 1) 3sg	a qá ba:la
1pl	ha qá ba:la
2pl	la qá ba:la
(cl 2) 3pl	ba qá ba:la

3.1.2.3.2. Series 3: Distribution

Series 3 SMs occur only with potential marker *qa*.

3.1.2.3.3. Series 3: Spreading properties

Because they never occur adjacent to the verb root, series 3 markers do not spread their H tone to the root:

(34) ńde há qa ba:l-a
TODAY.PST 3PL POT count-FV
‘we could count’

For the same reason, they do not spread to toneless object markers:

(35) ńde há qa χʊ-ba:l-a
TODAY.PST 3PL POT 2SG-count-FV
‘we could count you’

3.1.2.4. Series 4

3.1.2.4.1. Series 4: Form

(36) Series 4: Present (Habitual, Progressive) *'X counts'*

1sg	kí-bála:-χɔ́
2sg	ʊ́-bála:-χɔ́
(cl 1) 3sg	ʊ-bala:-yɔ
1pl	hí-bála:-χɔ́
2pl	lí-bála:-χɔ́
(cl 2) 3pl	bá-bála:-χɔ́

In series 4, 3sg is the only toneless person marker. SMs of classes 4 and 9 are also toneless; all other SMs have H tone.

(37) Series 4: Non-person subject markers

CLASS	**SM**
3	ʊ́-
4	ɪ-
5	í-
6	á-
7	shí-
8	bí-
9	ɪ-
10	rí-
11	lʊ́-

3.1.2.4.2. Series 4: Distribution

Series 4 SMs occur in the present tense. This includes cases in which they mark future auxiliary forms, which may also be assumed to have present tense, as in (38). The future auxiliary verbs may be grammaticalized from verbs that mean 'stand' (38a) and 'count' (38b).

(38) a. bá-mets^{h}í bí-bá:l-a
3PL-IMM.FUT 3PL-count-FV
'they are about to count'

b. bá-dá χʊ-ba:l-a
3PL-come INF-count-FV
'they will count'

3.1.2.4.3. Series 4: Spreading properties

H tones of series 4 SMs spread to adjacent toneless roots:

(39) hí-bál-a:-χɔ́
1PL-count-FV-FINAL.PRES
'we count' (also: 'we are counting')

They also spread to adjacent toneless object markers:

(40) hí-χʊ́-bal-a:-χɔ́
1PL-2SG-count-FV-FINAL.PRES
'we count you'

3.1.2.5. Series 5

3.1.2.5.1. Series 5: Form

All series 5 SMs are H-toned.

(41) Series 5: Present negative *'X does not count'*

1sg	ha kí-ba:lɛ́
2sg	ha ʊ́-ba:lɛ́
(cl 1) 3sg	ha á-ba:lɛ́
1pl	ha hí-ba:lɛ́
2pl	ha lí-ba:lɛ́
(cl 2) 3pl	ha bá-ba:lɛ́

3.1.2.5.2. Series 5: Distribution

Series 5 subject markers have a varied distribution, but might generally be characterized as occurring in irrealis contexts. They occur immediately after the hortative marker *á*, in many negative contexts (e.g. present tense negative and before negative marker *sháa*), and with affirmative and negative persistive marker *sha* ('still'),[11] except in the present tense.

3.1.2.5.3. Series 5: Spreading properties

H-toned series 5 SMs spread to adjacent toneless roots. However, the tone patterns preclude such spreading in most TAMs in which series 5 SMs occur – the toneless first syllable of the root is followed by a H tone (through unbounded spread) and bounded H-spreading cannot occur (42). Other series 5 SMs occur before another TAM marker, and do not spread to it (43). However, the hortative shows that series 5 subject markers can, in fact, spread to adjacent roots (44).

(42) ha hí-tʊtʊ́lʊ́:l-ɛ
NEG 1PL-disrespect-FV.IRR
'we don't disrespect'

---

[11] Like potential *qa*, persistive *sha* is H toned in present tense and toneless elsewhere. Series 5 SMs do not, however, have the polar tone behavior associated with series 3 SMs in the potential.

(43) léé bá sha tʊtʊlʊ:l-a
YEST.ST 3PL PERS disrespect-FV
'they still disrespected [yesterday]'

(44) á ꜝbá-tʊ́tʊlʊl-ɛ́
HORT 3PL-disrespect-FV.IRR
'may they disrespect'

Series 5 markers spread their H tone to adjacent toneless object markers, as well:

(45) ha hí-χʊ́-ba:l-ɛ́
NEG 1PL-2SG-count-FV.IRR
'we don't count you'

3.2. Object markers

The object marker (OM) paradigms are given in (46) for persons and (47) for non-persons. Singular person object markers are toneless; all other OMs, both person and non-person, are H-toned.

(46) Shekgalagari person object markers

1sg	-Ǹ-
2sg	-χʊ̀-
(cl 1) 3sg	-m(ʊ̀)-
1pl	-hí-
2pl	-lɪ́-
(cl 2) 3pl	-bá-

(47) Shekgalagari non-person object markers

CLASS	SM
3	-ʊ́-
4	-í-
5	-lí-
6	-á-
7	-shɪ́-
8	-bí-
9	-í-[12]
10	-rí-
11	-lʊ́-
12	n/a
13	n/a
14	-bʊ́-
15	-χʊ́-
16	-χʊ́-
17	-χʊ́-
18	-χʊ́-

3.2.1. Object markers and H-tone spreading (HTS)

Object marker H tones spread onto the following toneless syllable (48b), as long as

i) that syllable is not a monosyllabic stem (48c), and
ii) the OCP is not otherwise violated (49d).

(48) a. χʊ-ba:l-a
CL15(INF)-count-FV
'to count'

b. χʊ-bá-bá:l-a
CL15(INF)-3PL-count-FV
'to count them'

c. χʊ-bá:-k-a
CL15(INF)-3PL-mention-FV
'to mention them'

d. χʊ-shí-mʊ-ná:y-a
CL15(INF)-3PL-3SG-give-FV
'to give it to him' (no spread to second, toneless OM before H2 verb -náya)

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[12] The class 9 object marker appears to have unexpected tone patterning and is a topic for future research and instrumental work.

3.2.2. Double/triple object markers

Shekgalagari verbs allow the co-occurrence of up to three object markers. OMs are contrastive for tone only in immediate pre-stem position. In all other positions, OMs have H tone, which spreads to the following toneless syllable if no OCP violations are incurred.

(49) Double/triple OMs and spreading

	1ST OM	2ND OM	3RD OM	ROOT	SPREAD TO 2ND OM	SPREAD TO 3RD OM	SPREAD TO ROOT	EXAMPLE
a.	H	Ø	–	Ø	Y	–	–	χʊ-shí-mʊ́-kɛ:l-a CL15(INF)-7-3SG-show-FV ‘to show him it’
b.	H	H	–	Ø	–	–	Y	χʊ-shí-bá-kɛ́:l-a CL15(INF)-7-3PL-show-FV ‘to show them it’
c.	Ø	Ø	–	Ø	Y	–	–	χʊ-mʊ́-χʊ́-kɛ:l-a CL15(INF)-3SG-2SG-show-FV ‘to show him to you’[13]
d.	H	Ø	–	H1/H2	N	–	–	χʊ-shí-χʊ-ná:y-a CL15(INF)-7-2SG-show-FV ‘to show you it’
e.	Ø	Ø	Ø	Ø	Y	Y	–	χʊ-mʊ́-χʊ́-ŋ́-kɛl-e:l-a CL15(INF)-3SG-2SG-1SG-show-APPL-FV ‘to show you me for him’

Animacy supercedes OM ordering in the interpretation of at least some double object constructions, as can be seen in (50a) and (50b), which have identical interpretations despite a reversal of OM order:

(50) a. shɪ-hí-shí-kɛl-ɛ́
NEG.IMP-2PL-7-show-FV.IRR
‘don’t show it to us’

b. shɪ-shí-hí-kɛl-ɛ́
NEG.IMP-7-2PL-show-FV.IRR
‘don’t show it to us’

The patterning and interpretation of double and triple object markers require further investigation.

3.3. Final vowels

The most common final vowel in Shekgalagari is toneless *-a* (which may become H due to bounded or unbounded HTS). Also occurring is a final *-ɛ*, which is H-toned in most of the TAMs in which it occurs, but toneless in several. It becomes *-e* when the previous root vowel is [*e*] and when occurring on monosyllabic auxiliary verbs. Because the contexts in which final *-ɛ* occurs may all be characterized as irrealis (unrealized), it is labeled as such throughout. Constructions with an irrealis final vowel are given in (51).

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[13] This example also has the reading ‘to show you to him’.

(51) Constructions with -*ɛ* in Shekgalagari

TAM CATEGORY		**TAMS INVOLVED**	**TONE**	**EXAMPLE**
hortative	a.	verbs (main or aux) immediately following hortative	H	á ꜝbá-tʊ́tʊlʊ(:)l-ɛ́ ‘may they disrespect’
negative	b.	negative present	Ø	ha bá-tʊtʊ́lʊ́:l-ɛ ‘they don’t disrespect’
	c.	negative future (after conditional clause)	H	há ꜝbá sháa bal-ɛ́, bá-dá χʊ shɪ qé bá-í-kʰyû:ky-ɛ ‘if they don’t read, they won’t learn’ (H-toned FV with PLL)
	d.	negative imperative	H	shɪ-tʊtʊ́lʊ́-lɛ́ ‘don’t disrespect!’
	e.	negative past habitual	H	see (i)
	f.	negation with *sháa*[14]	H	bá-dá ꜝχʊ́-bé bá sháa tʊtʊ́lʊ̂:l-ɛ ‘they will not be disrespecting’ (H with PLL; see also (c))
imperative with OM	g.		H	bá-tʊtʊ́lʊ́l-ɛ́ ‘disrespect them!’
habitual	h.	past habitual	H	íye bá-da ba-tʊtʊ́lʊ̂:l-ɛ ‘they used to disrespect’ (H with PLL)
	i.	negative past habitual	H	ha iyé ꜝbá-da ba-tʊtʊlʊ̂:l-ɛ ‘they didn’t [habitually] disrespect [long ago]’ (H with PLL)
	j.	present persistive habitual	?	bá shánʹtsí bá-de ba-tʊtʊlʊ:l-ɛ[15] 'they still disrespect'

Several seemingly “irrealis” constructions do take final -*a*, including future tense, the affirmative imperative (without an object marker or with a 1sg object marker) and potential constructions.

4. An outline of Tense/Aspect/Mood marking in Shekgalagari main clauses

4.1. The division of time in Shekgalagari

Shekgalagari has a nuanced system for marking temporal distance in both past and future tenses. There are at least five distinct degrees of past tense remoteness, one marked by a bare subject marker, the others with a combination of subject marker and preverbal particle. Past tense distinctions can combine with aspect and mood markers. There is a clear distinction between imperfective and perfective pasts, and temporal-distance distinctions can also be made in anterior (perfect), hortative, persistive, and other aspects and moods.

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[14] This does not include the infinitive negation with *sháa*, which occurs with final -*a*, but does include (e.g.) conditionals, the main clauses of counterfactuals, and the future negative progressive.

[15] It is likely that this FV is H-toned and subsequently lowered, given that the entire verb form is lowered, as sometimes occurs with the hortative (see section 4.2.6).

Future time is expressed through auxiliary verb constructions; there are two or three distinctions of temporal distance (immediate future, general future, and possibly "near" future, falling between the two). The perfective/imperfective distinction is far less clear in future contexts, although future progressives are possible. Other aspects and moods can occur with future tense, but in general, future tense marking is not as elaborated in its aspectual distinctions as is past tense

The present tense is quite general, and may be used in "simple" present, present progressive, and present habitual contexts.

Specifics of temporal distinctions are given in sections 4.1.1-4.1.3 below, along with more detailed information about their possibilities for combining with other aspects and moods.

4.1.1. Past

There are at least four distinct degrees of past tense remoteness that can combine with all aspects in Shekgalagari. Past temporal distance is marked with the preverbal particles shown in (52).

(52) Degrees of past remoteness

a.	recent past	láábe
b.	today past	ńde
c.	yesterday past	léé
d.	distant past	íye

Two additional degrees of remoteness, used for "immediate" past, are available in the perfective aspect. The more common is formed with a bare series 1 subject marker. The other is formed with the series 1 subject marker and a preverbal particle *í*. See section 4.1.1.1 for more details.

The yesterday past marker *léé* appears to be related to the H2 root -*lála* 'to sleep':

(53) ńde kí-léé m-bʊláuŋ ʒɔ
TODAY.PST 1SG.IPFV-sleep in-bed DEM
'I slept in this bed' (ipfv)

The today past marker *ńde* occurs (with various tone patterns) in the anterior, as well, and the today past is at least to some degree interchangeable with the anterior aspect. See section 4.2.1 for more details about the anterior.

The perfective/imperfective distinction is clearest in past-tense contexts. Perfective and imperfective forms are presented in sections 4.1.1.1 and 4.1.1.2, respectively. Research into their particular semantic and pragmatic effects is needed.

4.1.1.1. Perfective pasts

(54) léé bá-ba:l-a
DIST.PST 3PL-count-FV
'they counted [yesterday]'

As noted above, perfective pasts have the most articulated system of temporal distance distinctions, including two "immediate" past forms. The bare subject-marker form (55e) is more general, while the particle *í* (55f) conveys more immediacy and might be considered an emphatic form, perhaps similar to the (toneless) emphatic *ɪ*- prefix that may attach to imperatives (see section 4.2.5.1).

The past perfective takes the series 1 subject marker.

(55) Shekgalagari past perfective forms – affirmative and negative

		AFF. FORM	EXAMPLE	NEG. FORM	EXAMPLE
a.	distant	íye SM$_1$-ROOT-a	íye bá-tʊtʊlʊ:l-a	ha iyé (ꜝ$_2$)SM$_1$-ROOT-a	ha iyé ꜝbá-tʊtʊlʊ:l-a
b.	yest.	léé SM$_1$-ROOT-a	léé bá-tʊtʊlʊ:l-a	ha léé (ꜝ$_2$)SM$_1$-ROOT-a	ha léé ꜝbá-tʊtʊlʊ:l-a
c.	today	ńde SM$_1$-ROOT-a	ńde bá-tʊtʊlʊ:l-a	ha ńdé (ꜝ$_2$)SM$_1$-ROOT-a	ha ńdé ꜝbá-tʊtʊlʊ:l-a
d.	recent	láábe SM$_1$-ROOT-a	láábe bá-tʊtʊlʊ:l-a	ha láábé (ꜝ$_2$)SM$_1$-ROOT-a	ha láábé ꜝbá-tʊtʊlʊ:l-a
e.	imm. II	SM$_1$-ROOT-a	bá-tʊtʊlʊ:l-a	ha ŋqá (ꜝ$_2$)SM$_1$-ROOT-a	ha ŋqá ꜝbá-tʊtʊlʊ:l-a
f.	imm. I	í SM$_1$-ROOT-a	í bá-tʊtʊlʊ:l-a	ha ŋqá (ꜝ$_2$)SM$_1$-ROOT-a	ha ŋqá ꜝbá-tʊtʊlʊ:l-a

Note that the today past form given in (55c) may represent either a simple past or an anterior; the common translation of the sentence is 'they have disrespected', with the possible interpretations being that the situation took place today, or that it occurred by a contextually-given time today.

The two immediate pasts have the same form in the negative. The negative present (see section 4.1.2) may be substituted for at least the imm. II form (given in (55e)).

Here, as in many other TAMs, the negative form includes downstep between between the particle and the subject marker. Crane (2009) discusses this along with other downstep phenomena, and argues that it may be attributed to minor phrase formation: particles form minor phrases with the main verb in the affirmative, but belong to different minor phrases in the negative, triggering downstep at the H-H meeting across phrase boundaries.

4.1.1.2. Imperfective pasts

(56) léé bí-bá:l-a
YEST.PST 3PL-count-FV
'they were counting [yesterday]'

Shekgalagari imperfectives are formed with temporal-distance particles and series 2 subject markers. There are fewer temporal distinctions than in the perfective; there are no distinct immediate past forms in the imperfective, and it is not possible to have a bare imperfective subject marker without a preceding temporal particle.

(57) Shekgalagari past imperfective forms – affirmative and negative

		AFF. FORM	EXAMPLE	NEG. FORM	EXAMPLE
a.	distant	íye SM$_2$-ROOT-a	íye bí-tʊ́tʊlʊ:l-a	ha iyé ꜝSM$_2$-ROOT-a	ha iyé ꜝbí-tʊ́tʊlʊ:l-a
b.	yest.	léé SM$_2$-ROOT-a	léé bí-tʊ́tʊlʊ:l-a	ha léé ꜝSM$_2$-ROOT-a	ha léé ꜝbí-tʊ́tʊlʊ:l-a
c.	today	ńde SM$_2$-ROOT-a	ńde bí-tʊ́tʊlʊ:l-a	ha ńdé ꜝSM$_2$-ROOT-a[16]	ha ńdé ꜝbí-tʊ́tʊlʊ:l-a
d.	recent	láábe SM$_2$-ROOT-a	láábe bí-tʊ́tʊlʊ:l-a	ha láábé ꜝSM$_2$-ROOT-a	ha láábé ꜝbí-tʊ́tʊlʊ:l-a
e.	imm. II	*	*	*	*
f.	imm. I	*	*	*	*

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[16] The variation ha ndé ꜝSM$_2$-ROOT-a (e.g. *ha ndé ꜝbí-tʊ́tʊlʊ:l-a*) may exist and needs to be tested.

4.1.2. Present

(58) bá-bál-a:-χɔ́
3PL-count-FV-FINAL
‘they are counting / they count’

The present tense has one basic form used for a variety of aspectual interpretations, including simple present, present progressive, and habitual.

(59) Shekgalagari present forms – affirmative and negative

AFF. FORM	**EXAMPLE**	**NEG. FORM**	**EXAMPLE**
SM_4-ROOT-a-χɔ́/yɔ	bá-tʊ́tʊlʊl-a:-χɔ́	ha SM_5-ROOT-ɛ	ha bá-tʊtʊ́lʊ́:l-ɛ

Non phrase-final present tense verbs have a final *-χɔ́* or *-yɔ*, the shape of which depends on the tone of the (series 4) subject marker: toneless subject markers (3sg, cl. 4, and cl. 9) take *-yɔ*, while H-toned subject markers (all others) co-occur with final *-χɔ́*. These are shown in (60) with the toneless root *-bala* ‘read, count’. Toneless SMs with *-yɔ* are highlighted.

(60) Present tense finals and subject markers

1sg	kí-bál-a:-χɔ́
2sg	ʊ́-bál-a:-χɔ́
(cl 1) 3sg	ʊ-bal-a:-yɔ
1pl	hí-bál-a:-χɔ́
2pl	lí-bál-a:-χɔ́
(cl 2) 3pl	bá-bál-a:-χɔ́
cl 3	ʊ́-bál-a:-χɔ́
cl 4	ɪ-bal-a:-yɔ
cl 5	í-bál-a:-χɔ́
cl 6	á-bál-a:-χɔ́
cl 7	shí-bál-a:-χɔ́
cl 8	bí-bál:-a-χɔ́
cl 9	ɪ-bal:-a-yɔ
cl 10	rí-bál:-a-χɔ́
cl 11	lʊ́-bál:-a-χɔ́

As expected, final *-χɔ́* blocks bounded HTS to the syllable preceding it. Example (61a) shows that spreading occurs before a toneless final. (61b) demonstrates that a H tone does not spread to the syllable immediately preceding a H-toned final, while (61c) shows that a H-toned final does not preclude bounded HTS altogether.

(61) a. ʊ-bɔ́n-á:-yɔ
3SG-see-FV-FINAL.PRES
‘s/he sees’

b. bá-bɔ́n-a:-χɔ́
3PL-see-FV-FINAL.PRES
'they see'

c. bá-χɔ́pʊ́l-a:-χɔ́
3PL-remember-FV-FINAL.PRES
'they remember'

Non-phrase-final present tense verbs lack final *-χɔ́* or *-yɔ*. When *-χɔ́* drops out, the entire verb becomes H-toned.

(62) bá-tʊ́tʊ́lʊ́l-á mʊlɪmi
3PL-disrespect-FVFARMER
'they disrespect the farmer'

(63) ʊ-tʊtʊlʊl-a mʊlɪmi
3SG-disrespect-FV FARMER
'he disrespects the farmer'

That loss of finals is a phrase-level and not utterance-level operation is seen in the possibility of alternations such as in (64a) and (64b).

(64) a. bá-mʊ́-tʊtʊlʊl-a-χɔ́ mʊlɪ:mi (use of final; PLL on second word only)
3PL-3SG-disrespect-FV-FINALPRES FARMER
'they are disrespecting him, the farmer'

b. bá-mʊ́-tʊtʊlʊl-a:-χɔ́ mʊlɪ:mi (use of final; PLL on both words)
3PL-3SG-disrespect-FV-FINALPRES FARMER
'they are disrespecting him, the farmer'

The pragmatics distinguishing (64a) from (65b) require further investigation.

4.1.3. Future

(65) bá-dá χʊ-ba:l-a
3PL-come CL15(INF)-count-FV
'they will count'

The general future is expressed with an auxiliary verb (toneless *-da*) along with an infinitive form of the main verb (66c). A more immediate future may be expressed with auxiliary *-metsʰí* (possibly related to a verb meaning 'stand'). and either the imperfective form of the verb (immediate future, (66a)) or the infinitive (near future, (66b)). The "near" future may be understood to be less immediate than the immediate future form.

(66) Shekgalagari future forms – affirmative and negative

		AFF. FORM	**EXAMPLE**	**NEG. FORM**	**EXAMPLE**
a.	imm.	SM$_4$-metsʰí SM$_2$-ROOT-a	bá-metsʰí bí-tʊ́tʊlʊːl-a	ha SM$_5$-metsʰí !SM$_2$-ROOT-a	ha bá-metsʰí !bí-tʊ́tʊlʊːl-a
b.	near	SM$_4$-da 15(INF)-metsʰí SM$_2$-ROOT-a	bá-dá χʊ-metsʰí bí-tʊ́tʊlʊːl-a	ha SM$_5$-da 15(INF)-metsʰí !SM$_2$-ROOT-a	ha bá-dá χʊ-metsʰí !bí-tʊ́tʊlʊːl-a
c.	gen.	SM$_4$-da 15(INF)-ROOT-a	bá-dá χʊ-tʊtʊlʊːl-a	ha ŋ́qe SM$_2$-ROOT-a	ha ŋ́qe bí-tʊ́tʊlʊːl-a

4.1.3.1. Future and aspect

Perfective and imperfective aspects are not as clearly marked in the future as they are in the past tense. Futures often use the subject markers associated with imperfective aspect (see (66b) above), but the semantics and pragmatics still require exploration. However, it is possible to form progressive constructions in the future that contrast with the non-progressive forms in (66). Affirmative and negative future progressives are shown in (67). No distinctions for temporal distance have been found for the future progressive.

(67) Shekgalagari future progressive forms – affirmative and negative

AFF. FORM	**EXAMPLE**	**NEG. FORM**	**EXAMPLE**
SM$_4$-da (!$_1$)15(INF)-bé SM$_2$-ROOT-a	bá-dá !χʊ́-bé bí-tʊ́tʊlʊːl-a	SM$_4$-da (!)15(INF)-bé SM$_5$ sháa ROOT-ɛ́	bá-dá !χʊ́-bé bá sháa tʊtʊ́lʊ̂ːl-ɛ

The affirmative form in (67) would be translated as 'they will be disrespecting', while non-progressive forms as in (66) are translated as 'they will disrespect' or 'they are about to disrespect'.

4.2. Further TAM distinctions

In addition to the perfective/imperfective/progressive distinctions discussed above Shekgalagari has many other possibilities for expressing aspect and mood. The following sections give a basic presentation of anterior (section 4.2.1) and habitual (section 4.2.2) aspects, as well as more modal constructions like the persistive ('still'; section 4.2.3), the potential (section 4.2.4), the imperative (section 4.2.5), the hortative (section 4.2.6), and counterexpectative forms (section 4.2.7).

Many of the TAMs presented here may combine to give extremely precise meaning distinctions, and other auxiliaries may also be introduced. For example, English continuative anteriors are translated with an auxiliary and imperfective subject markers:

(68) sa-lí !bí-tʊ́tʊlʊːl-a
AUX 3PL-disrespect-FV
'they have been disrespecting'

The negative form of this sentence is quite different, and uses series 4 subject markers:

(69) sa-lí !bá sháa tʊtʊ́lʊ̂ːl-ɛ
AUX 3PL NEG disrespect-FV.IRR
'they have not been disrespecting'

Because of the great number of combinatorial possibilities, the forms presented below should be viewed as just a sampling of the possible expressions of TAM in Shekgalagari.

4.2.1. Anterior

(70) léé ndé ꜝbá-ba:l-a
YEST.PST ANT 3PL-count-FV
'they had counted [yetsterday]'

As mentioned in section 4.1.1, anterior aspectual meaning overlaps with hodiernal (today) past marking. The marker *nde* also co-occurs with markers of temporal distance to indicate that a situation occurred (and terminated, if relevant) by a contextually-given time in the general time period specified by the other tense marking. The anterior may combine with past, present, and future time marking. Note that the present anterior form (71d) is identical to that given for the hodiernal past (55d).

(71) Shekgalagari anterior forms – affirmative and negative

		AFF. FORM	**EXAMPLE**	**NEG. FORM**[17]	**EXAMPLE**
	PAST				
a.	dist.	íye ndé (ꜝ$_2$)SM$_1$-ROOT-a	íye ndé ꜝbá-tʊtʊlʊ:l-a	ha íyé ꜝńdé (ꜝ$_2$)SM$_1$- ROOT-a	ha íyé ꜝńdé ꜝbá-tʊtʊlʊ:l-a
b.	yest.	léé ndé (ꜝ$_2$)SM$_1$-ROOT-a	léé ndé ꜝbá-tʊtʊlʊ:l-a	ha léé ꜝńdé (ꜝ$_2$)SM$_1$-ROOT-a	ha léé ꜝńdé ꜝbá-tʊtʊlʊ:l-a
c.	today	ńde ńdé (ꜝ$_2$)SM$_1$-ROOT-a	ńde ńdé ꜝbá-tʊtʊlʊ:l-a	ha ńdé ꜝńdé (ꜝ$_2$)SM$_1$-ROOT-a	ha ńdé ꜝńdé ꜝbá-tʊtʊlʊ:l-a
	PRES				
d.		ńdé SM$_1$-ROOT-a	ńdé bá-tʊtʊlʊ:l-a	ha ńdé (ꜝ$_2$)SM$_1$-ROOT-a	ha ńdé ꜝbá-tʊtʊlʊ:l-a
	FUT				
e.		SM$_4$-da (ꜝ$_1$)15(INF)-bé ńdé (ꜝ$_2$)SM($_1$)-ROOT-a	bá-dá ꜝχʊ́-bé ńdé ꜝbá-tʊtʊlʊ:l-a		

It is not only *nde* that marks anterior aspect; distant past *íye* may also be used; it indicates that a situation terminated well before another time in the past, as seen here with the hortative (see section 4.2.6 for more details about the hortative mood):

(72) á ꜝbá-b-e íyé ꜝíyé bá-tʊtʊlʊ(:)l-a
HORT 3PL-BE-FV.IRR DIST.PST DIST.PST 3PL-disrespect-FV
'may they have disrespected [long before something else that occurred long ago]'

Whether the yesterday particle *léé* may also be used to mean that a situation occurred a single day before a temporal reference point should be investigated.

Temporal distance markers may even triple up in anterior contexts, although such constructions are rarely found and have a meaning that, according to my consultant, is difficult to describe. Triple marking is illustrated in a conditional context in (73) and needs further investigation. Most conditional constructions involving anterior aspect include only two markers of temporal distance; conditionals are illustrated in section 5.1.

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[17] The negative forms in this table need to be reconfirmed in further elicitation.

(73) há ꜝíyé ꜝńdé ꜝńdé ꜝbá-bal-a, íye ńdé ꜝńdé ꜝbí-da χʊ-í-kʰyû:ky-a
‘If they had read [long ago, by a specific time], they would have learned’

Anterior aspect can combine with most, if not all, of the TAMs discussed below. Examples of anterior with other forms will be given throughout when possible, and should be developed in future investigations.

4.2.1.1. Forms with /*-ile*/

Shekgalagari also has an /*-ile*/ ending that may co-occur with verb roots having three or fewer syllables. The semantic contribution of this ending requires further study; there appears to be at least some ambiguity between present and anterior (perfect) readings. Such ambiguity is common with reflexes of the /*-ile*/ marker across Bantu; see Nurse (2008) for further details.

In Shekgalagari, /*-ile*/ undergoes (at least) nasal harmony (*l >n*) (e.g. 74b) and sibilant harmony (*l >ʒ*) (e.g. 74j), and conditions dissimilatory root consonant mutation (*l >r ; ʒ > r*) (74g and k). Vowel-height harmony does not change the /*-ile*/ form but raises an /ɪ/ in the root to /*i*/ (74j). The forms co-occur with series 2 subject markers. Sample forms are given in (74), without specific translations. Four-syllable roots are given in parentheses to illustrate what the relevant forms would look like; use of /*-ile*/ with these roots is strongly dispreferred.

This marker interacts with other TAMs, but little data is available about these interactions at this time.

(74) /*-ile*/ forms

Toneless root

	ROOT SYLL	**/-ILE/ FORM**	**PRE-PLL FORM**	**ROOT**	
a.	1	bí-ki:lé	bɪ-kilé	-ka	‘mention’
b.	2	bí-barî:le	bí-barílé	-bala	‘read/count’
c.	3	bí-haphʊ́rî:le	bí-haphʊ́rílé	-haphʊla	‘slap’
d.	4	(bí-tʊtʊ́lʊ́rî:le)	(bí-tʊtʊ́lʊ́rílé)	-tʊtʊlʊla	‘disrespect’

H1 (spreading) root

	ROOT SYLL	**/-ILE/ FORM**	**PRE-PLL FORM**	**ROOT**	
e.	1	bí-gyî:le	bí-gyílé	-gyá	‘eat’
f.	2	bí-bɔ́nî:ne	bí-bɔ́níné	-bɔ́na	‘see’
g.	3	bí-χópʊ́rî:le	bí-χópʊ́rílé	-χópʊla	‘think/remember’
h.	4	(bí-χáqʊ́lʊ́rî:le)	(bí-χáqʊ́lʊ́rílé)	-χáqʊlʊla	‘remind’

H2 (non-spreading) root

	ROOT SYLL	**/-ILE/ FORM**	**PRE-PLL FORM**	**ROOT**	
i.	1	–		–	
j.	2	bí-lísî:ʒe	bí-lísí:ʒé	-lísa	‘herd’
k.	3	bí-lálérî:ʒe	bí-lálérîʒé	-láleʒa	‘invite’
l.	4	(bí-tʊ́ʊ́lʊ́rî:le)	(bí-tʊ́ʊ́lʊ́rí:lé)		‘cause to cease from a habit’

4.2.2. Habitual

(75)	íye	bá-da	ba-ba:l-ɛ́
	DIST.PST	3PL-come	3PL-count-FV
	‘they used to count’		

Shekgalagari past and future habitual forms both use *-da* (likely related to the verb ‘come’) as an auxiliary. The present habitual is identical to the simple present, and the future habitual has the same form in the affirmative, but a unique negative form. Semantics and pragmatics of these forms should be investigated further.

Habitual forms are given in (76) for temporal periods for which they may be felicitously used. Past tense forms may be translated as ‘X used to ____’; present as ‘X [habitually] ____’ and future as ‘X will [habitually] ____’. What a habitual form would mean with, e.g., a marker of ‘yesterday’ time should be investigated.

(76) Shekgalagari habitual forms – affirmative and negative

	AFF. FORM	**EXAMPLE**	**NEG. FORM**	**EXAMPLE**
	PAST			
a.	íye SM$_5$-dá SM$_5$-ROOT-ɛ	íye bá-da ba-tʊtʊ́lʊ̂:l-ɛ	ha iyé !SM$_5$-da SM$_5$-ROOT-ɛ	ha iyé !bá-da ba-tʊtʊlʊ̂:l-ɛ
	PRES			
b.	SM$_4$-ROOT-a=χɔ́/yɔ	bá-tʊ́tʊlʊl-a:=χɔ́	ha SM$_5$-ROOT-ɛ́	ha bá-tʊtʊ́lʊ́:l-ɛ́
	FUT			
c.	SM$_4$-da 15(INF)-ROOT-a	bá-dá χʊ-tʊtʊlʊl-a	ha ńqé !SM$_2$-ńqé !SM$_2$-ROOT-a	ha ńqé !bí-ńqé !bí-tʊ́tʊlʊ:l-a

The final vowel on *-da* 9, at least in environments such as (76a). where it occurs between two like vowels, undergoes a non-obligatory harmony, with the following being a possible paradigm:

(77) Vowel harmony of *-da* between like vowels

1sg	íye kí-de kɪ-tʊtʊ́lʊ̂:l-ɛ	1pl	íye hí-de hɪ-tʊtʊ́lʊ̂:l-ɛ
2sg	íye ʊ́-dʊ ʊ-tʊtʊ́lʊ̂:l-ɛ	2pl	íye lí-de lɪ-tʊtʊ́lʊ̂:l-ɛ
3sg	íye á-da a-tʊtʊ́lʊ̂:l-ɛ	3pl	íye bá-da ba-tʊtʊ́lʊ̂:l-ɛ

The exact conditioning of this harmony requires further investigation. At least in some cases, my consultant prefers the harmonized versions. The lack of HTS to /*-da*/, and the toneless SMs on the main verb, are likewise topics for future research. It may be that the lowering of a single downstepped H before a toneless syllable is obligatory, rather than optional (see section 2.5.1), in this case.

It is noteworthy that series 3 and series 5 are the only all-H subject marker series (with the exception of series 2, whose H-tone may be attributable to an imperfective /-í/ morpheme), and that both series 3 and series 5 alternate between being all H-toned and all toneless, depending on their position and associated tense. A detailed analysis of tone assignment to these subject markers is still needed.

4.2.3. Persistive

(78) bá shá bál-a:-χɔ́
3PL PERS count-FV-FINAL
'they are still counting'

Persistive ('still') forms are formed with the particle *sha*, which is inserted between the subject marker and the main verb. Because of its particular downstep-inducing properties, it is analyzed here as an inserted word rather than a prefix, although this representation should be understood as tentative and subject to modification based on further research. Further details on the persistive particle and downstep are given in section 4.2.3.1; for a discussion of downstep and word/phrase formation see Crane 2009.

Persistive forms appear have a default progressive reading, although a habitual reading is possible given the proper context. Explicitly habitual constructions for persistive are given in (80) and (81).

(79) Shekgalagari persistive forms – affirmative and negative

		AFF. FORM	**EXAMPLE**	**NEG. FORM**	**EXAMPLE**
	PAST				
a.	dist.	íye SM$_5$ sha ROOT-a	íye bá sha tʊtʊlʊ:l-a	ha iyé !SM$_5$ sha ROOT-a	ha iyé !bá sha tʊtʊlʊ:l-a
b.	yest.	léé SM$_5$ sha ROOT-a	léé bá sha tʊtʊlʊ:l-a	ha léé !SM$_5$ sha ROOT-a	ha léé !bá sha tʊtʊlʊ:l-a
c.	today	ńde SM$_5$ sha ROOT-a	ńde bá sha tʊtʊlʊ:l-a	ha ńdé !SM$_5$ sha ROOT-a	ha ńdé !bá sha tʊtʊlʊ:l-a
d.	rec.	láábe SM$_5$ sha ROOT-a	láábe bá sha tʊtʊlʊ:l-a	ha láábé !SM$_5$ sha ROOT-a	ha láábé !bá sha tʊtʊlʊ:l-a
	PRES				
e.		SM$_4$́ shá́ ROOT-a-χɔ́/yɔ	bá́ shá́ tʊ́tʊlʊl-a:́=χɔ́	ha SM$_5$ sha ROOT-a	ha bá sha tʊtʊlʊ:l-a
	FUT				
f.		SM$_4$-da (!$_1$)15(INF)-bé SM$_5$!shán̍tsɪ SM$_2$-ROOT-a	bá-dá !χʊ́-bé bá !shán̍tsɪ bí-tʊ́tʊlʊ:l-a	SM$_4$-da (!$_1$)15(INF)- be SM$_5$!shántsɪ SM$_5$ sháa ROOT-ɛ́	bá-dá !χʊ́-bé bá !shán̍tsɪ bá sháa tʊtʊ́lʊ̂:l-ɛ
g.		SM$_4$-da (!$_1$)15(INF)-bé !SM$_5$–sha-ROOT-a	bá-dá !χʊ́-bé !bá-sha-tʊtʊlʊ:l-a		

Semantic differences between (79f) and (79g) are not known; the forms are to some extent interchangeable. Note that the *sháa* in the negative form in (f) is a negative marker, and not the persistive marker.

As noted above, these forms are generally interpreted as progressive. An explicitly habitual present persistive form would be as in (80):

(80) bá shán̍tsí bá-d-e ba-tʊtʊlʊ:l-ɛ
3PL-PERS? 3PL-come-FV.IRR (?) 3PL-disrespect-FV.IRR
'they still disrespect'

A habitual future persistive is as in (81):

(81) bá shá dá χʊ-tʊtʊlʊ:l-a
3PL PERS come CL15(INF)-disrespect-FV
'they will still disrespect'

A detailed study of persistive forms, semantics, and tone patterns is still needed. The all low tone of *ba-tʊtʊlʊ:l-ɛ* in (80) is unexpected, but such an across-the-board lowering is also seen optionally in some hortative constructions (see section 4.2.6.1) and may be related. Whether the all-toneless pattern is optional or obligatory is unknown at this time.

4.2.3.1. Persistive tone patterns and downstep

It may be noted that downstep occurs across words in many of the paradigms, especially in negative and compound TAM constructions. Downstep conditioning is discussed in greater detail in Crane 2009.

TAM particles that occur between the subject marker and the stem (object marker/verb root) include the persistive *sha* and potential *qa*. Although the tone patterning of these is not identical,[18] they have some important similarities:

i) Both are H-toned in present tenses and in tenseless contexts such as the infinitive, and toneless in past tenses (82). The only elicited example of a TAM particle in a non-auxiliary future is given in (80g) above and is also toneless.
ii) Both are involved in downstep in non-present tenses, but not in present tenses or tenseless contexts (83).
iii) Both lengthen before H-toned monosyllables (84).

(82) a. bá shá tʊ́tʊlʊl-a:-χɔ́ (present)
3PL PERS disrespect-FV-FINAL
'they are still disrespecting'

b. íye bá sha tʊtʊlʊ:l-a (past)
DIST.PST 3PL PERS disrespect-FV
'they were still disrespecting [long ago]'

(83) a. bá shá χáqʊ́lʊl-a:-χɔ́ (present, H1 root)
3PL PERS remind-FV-FINAL
'they are still reminding'

b. íye bá !shá χáqʊ́lʊ:l-a (past, H1 root)
DIST.PST 3PL PERS remind-FV
'they were still reminding'

c. χʊ shá mʊ́-su:p-a (infinitive, Ø root, Ø OM)
CL15(INF) PERS 3SG-display-FV
'to still display him'

d. χʊ shá hí-sú:p-a (infinitive, Ø root, H OM)
CL15(INF) PERS 1PL-display-FV
'to still display us'

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[18] Most significantly, the series 3 subject markers have polar tone with respect to potential *qa*, and *qá* does not spread to adjacent toneless roots in the present tense

e. íye bá sha mʊ-tʊtʊlʊ:l-a (past, Ø root, H OM)
DIST.PST 3PL PERS 3SG-remind-FV
‘they were still reminding him’

f. íye bá ꜝshá hí-tʊ́tʊlʊ:l-a (past, Ø root, H OM)
DIST.PST 3PL PERS 1PL-remind-FV
‘they were still reminding us’

(81a) shows that there is no downstep between subject markers and persistive *sha* in the present tense; (81b) shows that there is downstep in the past tense before a H1 root (see section 2.5 for details on downstep conditioning in general). (81c) and (81d) demonstrate that there is also no downstep with the infinitive, and that H-toned *shá* spreads to an adjacent toneless object marker (81d). (81e) shows that persistive *sha* is not H in past tense, because it does not spread to an adjacent toneless OM. However, it does participate in downstep before a H-toned OM (81f).

Example (84) shows some examples of lengthening before monosyllabic roots. Note that penultimate lengthening and lowering (PLL) is present in all examples, causing *sha* to lengthen in both (84c) and (84d). However, an additional mora is inserted in (84d).

(84) a. ʊ shá w-a:-yɔ (present, Ø root, Ø SM)
3SG PERS fall-FV-FINAL
‘he is still falling’

b. ʊ sháa gy-á:-yɔ (present, H root, Ø SM)
3SG PERS eat-FV-FINAL
‘he is still eating’

c. íye bá sha: w-a (past, Ø root)
DIST.PST 3PL PERS fall-FV
‘they were still falling’

d. íye bá shaa: gy-á (past, H root)
DIST.PST 3PL PERS eat-FV
‘they were still eating’

The negative marker *sháa* has similar behavior, as well, but requires further work to determine its precise distribution and tone patterning.

4.2.4. Potential

(85) ba qá ba:l-a
3PL POT count-FV
‘they can count’

The potential marker *qa* can be used to describe both ability and epistemic possibility. Example (85) above also has the reading ‘they might count’. The precise semantics of *qa* need to be examined in greater detail.

Potential forms take series 3 subject markers, which have polar tone with respect to potential marker *qa* and are H toned when it is low (non-present tenses) and toneless when it is H (present tense and – not relevant to SMs – the infinitive).

(86) Shekgalagari potential forms – affirmative and negative

		AFF. FORM	**EXAMPLE**	**NEG. FORM**	**EXAMPLE**
	PAST				
a.	dist.	iyé SM$_3$ qa ROOT-a	iyé bá qa tʊtʊlʊ:l-a	ha íyé (ꜜ$_2$)SM$_3$ qa ROOT-a	ha íyé ꜜbá qa tʊtʊlʊ:l-a
b.	yest.	léé SM$_3$ qa ROOT-a	léé bá qa tʊtʊlʊ:l-a	ha léé (ꜜ$_2$)SM$_1$ qa ROOT-a	ha léé ꜜbá qa tʊtʊlʊ:l-a
c.	today	ńde SM$_3$ qa ROOT-a	ńde bá qa tʊtʊlʊ:l-a	ha ndé (ꜜ$_2$)SM$_1$ qa ROOT-a	ha ndé ꜜbá qa tʊtʊlʊ:l-a
d.	rec.	láábe SM$_3$ qa ROOT-a	láábe bá qa tʊtʊlʊ:l-a	ha láábé (ꜜ$_2$)SM$_1$ qa ROOT-a	ha láábé ꜜbá qa tʊtʊlʊ:l-a
	PRES				
e.		SM$_3$ qá ROOT-a[19]	ba qá tʊtʊlʊ:l-a [20]	ha ŋ́qa qé (ꜜ$_2$)SM$_1$-ROOT-a	ha ŋ́qa qé ꜜbá-tʊtʊlu:l-a
	FUT				
f.	imm.	SM$_3$ qá ꜜmétsʰí (ꜜ$_2$)SM$_1$-ROOT-a	ba qá ꜜmétsʰɪ ꜜbá-tʊtʊlʊ:l-a		
g.	gen.	SM$_4$-dá 15(INF)-kˣɔna 15(INF)-ROOT-a	bá-dá χʊ- kˣɔna χʊ-tʊtʊlʊ:l-a		

The general future form does not involve *qa*, but is literally translatable as 'they will manage to ____'.

The negative present construction appears to involve a subjunctive/irrealis form of the potential marker (*qe*). Negative forms still need to be elicited for future potential forms.

Like the persistive, the potential has interesting patterns with respect to downstep (as outlined in section 4.2.3.1) The persistive and potential pattern similarly, with the important differences that

i) the potential co-occurs with a (series 3) subject marker with polar tone (H toned when the potential is toneless, toneless when the potential marker is H), and
ii) the potential does not spread its H tone to adjacent toneless roots (spreading properties with respect to object markers require further investigation).

The potential may also combine with anterior aspect:

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[19] See section 3.1.2.3 for a brief description of the interactions of SM tone, the potential marker *qa,* and tense.

[20] This form also means 'they might disrespect'.

(87) Shekgalagari potential (past) anterior forms – affirmative and negative

		AFF. FORM	**EXAMPLE**	**NEG. FORM**	**EXAMPLE**
a.	dist. past	íye ndé (ꜝ$_2$)SM$_3$ qa ROOT-a	íye ndé ꜝbá qa tʊtʊlʊ:l-a	ha íyé ꜝńdé (ꜝ$_2$)SM$_3$ qa ROOT-a	ha íyé ꜝńdé ꜝbá qa tʊtʊlʊ:l-a
b.	yest. past	léé ndé (ꜝ$_2$)SM$_3$ qa ROOT-a	léé ńdé ꜝbá qa tʊtʊlʊ:l-a	ha léé ꜝńdé (ꜝ$_2$)SM$_3$ qa ROOT-a	ha léé ꜝńdé ꜝbá qa tʊtʊlʊ:l-a
c.	today past	ńde ńdé (ꜝ$_2$)SM$_3$ qa ROOT-a	ńde ńdé ꜝbá qa tʊtʊlʊ:l-a	ha ńdé ꜝńdé (ꜝ$_2$)SM$_3$ qa ROOT-a	ha ńdé ꜝńdé ꜝbá qa tʊtʊlʊ:l-a

These examples have meanings such as ‘they could have disrespected (but were prevented from doing so)’. A more complete investigation of semantics and uses is called for.

4.2.5. Imperative

(88) tʊtʊ́lʊ́l-a
disrespect-FV
‘disrespect!’

The imperative is formed with a bare root with unbounded HTS from the second root syllable to the penult. Imperative forms do not distinguish between singular (e.g. ‘disrespect!’) and pl. (e.g. ‘you all, disrespect!’).

Toneless verbs, with the exception of toneless monosyllables, always preserve a toneless first syllable. Because the imperative H must be realized, it occurs on the only syllable of a toneless monosyllabic stem, and on the second (final) syllable of a toneless bisyllabic stem. Tone patterns in the infinitive are detailed in (20). The same tone pattern is found in the present-tense negative (see section 4.1.2).

(89) Shekgalagari imperative

a. Toneless root

STEM SYLL	**IMP. FORM**	**TONE PATTERN**	**GLOSS**
1	ká	H	‘mention!’
2	balá	ØH	‘read!/count!’
3	haphʊ́la	ØHØ	‘slap!’
4	tʊtʊ́lʊ́la	ØHHØ	‘disrespect!’

b. H1 (spreading) root

STEM SYLL	**IMP. FORM**	**TONE PATTERN**	**GLOSS**
1	há	H	‘give!’
2	bɔ́na	HØ	‘see!’
3	χópʊ́la	HHØ	‘think!/remember!’
4	χáqʊ́lʊ́la	HHHØ	‘remind!’

c. H2 (non-spreading) root

STEM SYLL	**IMP. FORM**	**TONE PATTERN**	**GLOSS**
1		–	–
2	lísa	HØ	‘herd!’
3	láléʒa	HHØ	‘invite!’
4	tʊ́ʊ́lʊ́la	HHHØ	‘cause to cease from a habit!’

Imperatives with object markers have the same tone pattern, plus the addition of the H-toned irrealis final vowel -*έ́*, as illustrated in (90). A full tonal paradigm of the imperative with an object marker is given in appendix A4.

(90) bá-tʊtʊ́lʊ́l-έ́
PL-disrespect-FV.IRR
‘disrespect them!’

The only object marker that does not co-occur with the irrealis FV is 1sg:

(91) n-tʊtʊ́lʊ́l-a
1SG-disrespect-FV
‘disrespect me!’

The negative form of the imperative are prefixed with *shɪ* and have the same tone pattern as imperatives with object markers (as in (91). However, unlike imperatives with object markers, they do not condition downstep with a following function word (see section 2.5 and appendix A5).

(92) shɪ-tʊtʊ́lʊ́l-έ́
NEG-disrespect-FV.IRR
‘don’t disrespect!’

4.2.5.1. Emphatic commands

A toneless *ɪ*- may be prefixed to the verb stem for emphasis:

(93) ɪ-gy-á
EMPH-eat-FV
‘EAT!’

4.2.6. Hortative

(94) á ꜝbá-tʊ́tʊlʊ(:)l-ɛ́
HORT 3PL-disrespect-FV.IRR
'may they disrespect!'

The hortative mood ('let X ____' / 'may X ____') is complex both semantically and in its tonal properties. Only a brief introduction will be given here.

The hortative marker is a H-toned *á* marker. It co-occurs with an irrealis final vowel /*-ɛ*/. The FV is H-toned only when it follows a toneless syllable, and surfaces as toneless on mono- and bisyllabic stems (e.g. (95)). See appendix A14 for further details.

(95) á ꜝbá-bá(:)l-ɛ
HORT 3PL-count-FV.IRR
'may they count!'

The hortative marker may occur before the verb or before an overt subject NP, as shown in (96).

(96) a. barímʊ́ á̲ ꜝbá-bá(:)l-ɛ
CL2.gods HORT CL2-count-FV.IRR
'the gods, let them count'

b. á ꜝbárímʊ́ ꜝbá-bá(:)l-ɛ
HORT CL2.gods CL2-count-FV.IRR
'let the gods count'

Penultimate lengthening and lowering is optional in the hortative with non-second-person subjects; second-person hortatives, which may be too "command-like" for interpretation as declaratives, do not undergo PLL (see Hyman and Monaka for an in-depth discussion of the pragmatics of declarative PLL in Shekgalagari). Because examples are given here with 3pl subjects, optional PLL is indicated by (:).

Hortative forms are given in (97) for the affirmative. Although there is a distinction of temporal distances in the past, the future hortative form can refer to all degrees of future temporal distance. An example of a negative hortative past form is given below in (98a), and other past forms are likely analogous. The negative future hortative is given in (98b).

(97) Shekgalagari hortative forms – affirmative

		AFF. FORM	**EXAMPLE**
	PAST		
a.	dist.	á (ꜝ)SM$_5$-be íyé (ꜝ$_2$)SM$_1$-ROOT-a	á ꜝbá-be íyé ꜝbá-tʊtʊlʊ(:)l-a
b.	yest.	á (ꜝ)SM$_5$-be léé (ꜝ$_2$)SM$_1$-ROOT-a	á ꜝbá-be léé ꜝbá-tʊtʊlʊ(:)l-a
c.	today	á (ꜝ)SM$_5$-be ńdé (ꜝ$_2$)SM$_1$-ROOT-a	á ꜝbá-be ńdé ꜝbá-tʊtʊlʊ(:)l-a
d.	rec.	á (ꜝ)SM$_5$-be láábé (ꜝ$_2$)SM$_1$-ROOT-a	á ꜝbá-be láábé ꜝbá-tʊtʊlʊ(:)l-a
	PRES		
e.		á ꜝSM$_5$-ROOT-ɛ́[21]	á ꜝbá-tʊ́tʊlʊ(:)l-ɛ́
	FUT		
f.	gen.	á ꜝSM$_5$-de SM$_5$-ROOT-ɛ[22]	á ꜝbá-de bá-tʊ́tʊlʊ(:)l-ɛ́

(98) Shekgalagari hortative forms – negative (sample)

		NEG. FORM	**EXAMPLE**
a.	dist. past	á SM$_5$-be íyé ꜝSM$_5$-shı-qá (ꜝ$_2$)SM$_1$-ROOT-a	á ꜝbá--be íyé ꜝbá-shı-qá ꜝbá-tʊtʊlʊ(:)l-a
b.	future	á ꜝSM$_5$-shı-dé ꜝSM$_1$-ROOT-a	á ꜝbá-shı-dé ꜝbá-tʊtʊlʊ(:)l-a

The hortative also combines with imperfective (99), anterior (100), and other forms.

(99) Shekgalagari hortative forms – imperfective aff. (sample) – ‘may they have been ____’

		AFF. FORM	**EXAMPLE**
	PAST		
a.	dist.	á SM$_5$-be íyé ꜝSM$_2$-ROOT-a	á ba-be íyé ꜝbí-tʊ́tʊlʊ(:)l-a
b.	yest.	á SM$_5$-be léé ꜝSM$_2$-ROOT-a	á ba-be léé ꜝbí-tʊ́tʊlʊ(:)l-a
c.	today	á SM$_5$-be ńdé ꜝSM$_2$-ROOT-a	á ba-be ńdé ꜝbí-tʊ́tʊlʊ(:)l-a

Because of the functional overlap of the today past and the anterior, as discussed in section (4.1.1), (99c) is best translated as ‘may they have been disrespecting [at a contextually relevant time, today]’.

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[21] The final *-ɛ* in the hortative is only H when it follows a toneless syllable, surfacing as L on mono- and bi-syllabic stems, and on trisyllabic H-toned stems with spreading to the penult. See the appendix (#) for further details.

[22] This form can reference any degree of future in the Shekgalagari hortative.

(100) Shekgalagari hortative forms – anterior aff. (sample) – ‘may they have ____’

		AFF. FORM	**EXAMPLE**
	PAST		
a.	dist.	á (ꜝ)SM$_5$-be íyé ꜝíyé SM$_1$-ROOT-a	á ꜝbá-be íyé ꜝíyé bá-tʊtʊlʊ(:)l-a
b.	yest.	á (ꜝ)SM$_5$-be léé ꜝńdé SM$_1$-ROOT-a	á ꜝbá-be léé ꜝńdé ꜝbá-tʊtʊlʊ(:)l-a
c.	today	á (ꜝ)SM$_5$-be ńdé ꜝńdé SM$_1$-ROOT-a	á ꜝbá-be ńdé ꜝńdé ꜝbá-tʊtʊlʊ(:)l-a

An appropriate translation of (100a) is ‘may they have disrespected [and finished doing so, by a contextually given time, long ago]’. The apparent tonal inconsistency on the SM of the main verb requires further study.

4.2.6.1 Hortative, HTS and downstep

Downstep and HTS possibilities in the hortative mood are complex and require further study. They are dependent on at least object marker tone and root tone, as illustrated in the table in (101).

(101) Hortative tone patterns

	OM	**ROOT**	**TONE POSSIBILITIES (NOT AN EXHAUSTIVE LIST)**
a.	–	Ø	á ꜝbá-tʊ́tʊlʊl-ɛ́ ‘let them disrespect’
b.	–	H1/H2	á ꜝbá-χáqʊlʊl-ɛ́ (H1, no bounded-HTS) ‘let them remind’
c.	Ø	Ø	á ꜝbá-ń-tʊtʊ́lʊ́l-ɛ́ á ꜝba-n-tʊtʊlʊl-ɛ *á ba-n-tʊtʊ́lʊ́l-ɛ́ ‘let them disrespect me’
d.	Ø	H	á ꜝbá-mʊ-χáqʊ́lʊ́l-ɛ́ á ba-mʊ-χáqʊ́lʊ́l-ɛ́ *á ba-mʊ-χaqʊlʊl-ɛ ‘let them remind him’
e.	H	H1/H2	á ꜝbá-bá-χáqʊ́lʊ́l-ɛ́ á ꜝbá-bá ꜝχáqʊ́lʊ́l-ɛ́ á ba-ba-χaqʊlʊl-ɛ ‘let them remind them’

Interestingly, neither the hortative nor any other subjunctive mood marking occurs in contexts such as ‘X wants Y to ____’.

4.2.7. Counterexpectatives

(102) íye bí-da χʊ-tʊtʊlʊ:l-a
DIST.PST 3PL-come CL15(INF)-disrespect-FV
‘they were going to disrespect [long ago, but they didn’t]’

Counterexpectative forms are composed of TAM markers discussed above. For example, the example in (102) has a distant past marker, the imperfective form of future auxiliary *-da* ‘come’, and the infinitive form of the verb (much like its English counterpart). The same degrees of past temporal distance apply; for example, (103) has the expected meaning:

(103) ńde bí-da χʊ-tʊtʊlʊːl-a
TODAY.PST 3PL-come CL15(INF)-disrespect-FV
‘they were going to disrespect [today]’

Counterexpectatives are negated similarly to other past tense forms, using the particle *ha*:

(104) ha ńdé ꜝbí-da χʊ-tʊtʊlʊːl-a
NEG TODAY.PST 3PL-come CL15(INF)-disrespect-FV
‘they weren’t going to disrespect’

(Compound) anterior counterexpectatives have at least two possible interpretations:[23]

(105) a. ńde ńdé ꜝbí-da χʊ-tʊtʊlʊːl-a
TODAY.PST ANT 3PL-come CL15(INF)-disrespect-FV
‘they were going to disrespect [by a contextually specified time, e.g. by the time you found them]

b. íye ńdé ꜝbí-da χʊ-tʊtʊlʊːl-a
DIST.PST ANT 3PL-come CL15(INF)-disrespect-FV
‘they would have disrespected [long ago]’

The two meanings are related: ‘would have’ (105b) implies a planned course of events somehow interrupted; the example in (105a) gives a more precise specification of the interruption.

5. Conditionals and Counterfactuals

The study of Shekgalagari tone described above did not include an in-depth analysis of tense/aspect/mood expression in non-main clauses. However, the data that were collected point to a complex and fascinating system. While they are by no means comprehensive, the examples below give a general idea of how relative clauses, conditionals, and counterfactuals are formed in Shekgalagari, and the tonal interactions involved. The segmentation of morphemes is not meant to be definitive, and morpheme-by-morpheme glosses are not given, although many of the relevant morphemes can be found in the sections above. Tone patterns are interesting, with more downstep in dependent than in main clauses. See Crane 2009 for an analysis of downstep conditioning in terms of grammatically conditioned minor phrases.

Examples are given using verbs *-bala* (‘read, count’) and *-í-kʰyúkya* (H1, 'learn'), the latter of which includes the H-toned reflexive prefix *-í-*.

5.1. Conditionals

Conditional clauses are formed with the marker *há*, which conditions downstep on a following element. The main clauses in conditional sentences appear to pattern the same as other main clauses.

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[23] The elicited examples in (105a) and (105b) have different temporal frames, but are to all appearances completely interchangeable in all other respects.

Note that the conditional marker *há* differs from negative marker *ha* in its tone. The present tense conditional clause appears to have past-tense morphology (compare with past vs. present tense for potentials in section 4.2.4 above. However, it is not certain that the *qa* in this example is the same as potential *qa*.

(106) Shekgalagari conditionals – past perfective – affirmative

	PAST	
a.	dist.	há ꜝíyé ꜝbá-bal-a, íye bá-íkʰhû:ky-a 'if they read [long ago], they learned'
b.	yest.	há ꜝléé ꜝbá-bal-a, léé bá-íkʰhû:ky-a 'if they read [yesterday], they learned'
c.	today	há ꜝńdé ꜝbá-bal-a, ńdé bá-íkʰhû:ky-a 'if they read [today], they learned'
	PRES	
d.		há ꜝbá qa bal-a, bá-dá χʊ-í-kʰyû:ky-a 'if they read [habitually/right now], they will learn'
	FUT	
e.		há ꜝbá qa da bá-bal-a, ńde bá shı qá ꜝbá-í-kʰyû:ky-a 'if they read [in the future], they will learn'

The negative forms of realis conditionals are more complex. They employ negative marker *shı* (found also in negative imperatives and hortatives) in each clause

(107) há ꜝńdé ꜝbá shı qá bá-bal-a, ńde bá shı qá ꜝbá-í-kʰyû:ky-a
'if they didn't read [today], they didn't learn'

The present-tense conditional form has both habitual and simple present readings.

(108) há ꜝbá qa bal-a, bá-dá χʊ-í-kʰyû:ky-a
'if they read [habitually/right now], they will learn'

Again, its negative form is more complex:

(109) há ꜝbá sháa bal-έ, bá-dá χʊ shı qé bí-í-kʰyû:ky-a[24]
'if they don't read, they won't learn'

Another possible expression of the present negative conditional is given in (110). Further investigation of the differences between the forms is needed.

(110) há ꜝbá sháa bal-έ, bá-dá χʊ shı qé bá-í-kʰyû:ky-ɛ
'if they don't read, they won't learn'

Imperfective (and progressive forms) are also possible; given here are the today past imperfective negative (111a), and the affirmative present progressive (111b) and its negation

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[24] Also possible is the following tone pattern: há ba-shaa-balέ; however, *há ꜝbá-shaa-balέ is not acceptable. Note that the series 2 subject marker on the main-clause verb is [bí], due to vowel-height assimilation with the following reflexive marker.

(111c). Note that the present progressive conditional clause allows for a "bare" imperfective in the present tense, which is not possible in main clauses.

(111) a. há ꜝńdé bá sháa bal-έ́, ŋqábe bá shá́ꜝá í-kʰyû:ky-έ́
'if they weren't reading, they weren't learning'

b. há ꜝbí-bá-la, bá-í-kʰyû:ky-a-χɔ́
'if they are reading, they are learning'

c. há ꜝbá sháa bal-έ́, ha-bá-í-kʰyú:ky-ε
'if they aren't reading, they aren't learning'

5.2. Counterfactuals

The form and semantics of counterfactuals in Shekgalagari is an area in need of much further study; as in the above section, forms are given here with basic translations. Note that the dependent clause is identical to that of the conditional; counterfacutality is expressed in the main clause, which takes the same form as the counterexpectatives in (4.2.7). Note again the apparently (immediate) past tone pattern in the present tense.

(112) Shekgalagari counterfactuals – affirmative

	PAST	
a.	dist.	há ꜝíyé ꜝbá-bal-a, íye bí-da χʊ-í-kʰyû:ky-a 'if they had read [long ago], they would have learned'
b.	yest.	há ꜝléé ꜝbá-bal-a, léé bí-da χʊ-í-kʰyû:ky-a 'if they had read [yesterday], they would have learned'
c.	today	há ꜝńdé ꜝbá-bal-a, ńdé bí-da χʊ-í-kʰhû:ky-a 'if they had read [today], they would have learned'
d.	today	há ꜝláábé ꜝbá-bal-a, láábe bí-da χʊ-í-kʰhû:ky-a 'if they had read [recently], they would have learned'
	PRES	
e.		há ꜝbá qa bal-a, ba qá í-kʰyû:ky-a 'if [it were the case that] they read, they would learn'

Sample negative forms of counterfactuals are given in (113).

(113) Shekgalagari counterfactuals – negative

a.	recent past	há ꜝláábé ꜝbá shı qá bá-bal-a, ha láábe ꜝbá-í-kʰhû:ky-a 'if they hadn't read [recently], they would have learned'
b.	present	há ꜝbá sháa bal-έ́, ha ŋ́qe bí-í-kʰyû:ky-a 'if [it weren't the case that] they read, they wouldn't learn'

Counterfactuals may also take imperfective/progressive aspect. Present imperfective counterfactual *if*-clauses combine anterior morphology with the imperfective subject marker. Given in (114) are a today past imperfective (114a), its negation (114b), and a present imperfective (114c).

(114) Shekgalagari counterfactuals – imperfective

a.	today past	há ꜝńdé ꜝbí-da χʊ-bé bí-bál-a, ńde bí-da χʊ-be bí-í-kʰyû:ky-a ‘if they had been reading [today], they would have learned’
b.	today past negative	há ꜝńdé ꜝbí-da χʊ-bé bá sháa bal-ɛ́, ńde bí-da χʊ-bé bá-sháꜝá-íkʰyû:ky-ɛ́ ‘if they hadn’t been reading [today], they wouldn’t have learned’
c.	present	há ꜝńdé bí-bál-a, ŋqábe bí-í-kʰyû:ky-a ‘if they were reading, they would be learning’

Like counterexpectatives, past-tense counterfactuals may have anterior morphology, as well. Meaning and usage differences should be investigated further.

(115) há ꜝléé ꜝńdé ꜝbá-bal-a, léé ńdé ꜝbí-da χʊ-í-kʰyû:ky-a
‘if they had read [yesterday, by a contextually-given time], they would have learned [by that time]’

The main clause of anterior counterfactuals need not have anterior aspect marking:

(116) há ꜝíyé ꜝíyé ꜝbá-bal-a, íyé bí-da χʊ-í-kʰyû:ky-a
‘if they had read [yesterday, by a contextually-given time], they would have learned’

It is also grammatical to have “double” anterior marking in counterfactuals. Such constructions are rarely used, and the meaning is difficult to pin down. An example is given in (117).

(117) há ꜝíyé ꜝńdé ꜝńdé ꜝbá-bal-a, íye ńdé ꜝńde bí-da χʊ-í-kʰyû:ky-a
‘if they had read [yesterday, by a contextually-given time], they would have learned’

6. Future research

The above represents the very beginnings of a study of a complex tense/aspect/mood system. It is the hope of the author and others involved in the project that it may form a basis for a rich and in-depth program of research in the future, and that it may be of some use to scholars of Bantu in general, and Shekgalagari in particular, in the meantime.

There is a particular need to investigate the expression of TAM within relative clauses. Very few examples of relative clauses were collected during this study, so little can be said about the range of TAM expression they allow. However, at least the differentiation of past time seems to pattern the same as main clauses (and conditional and counterfactual clauses).

One example of a relative clause is given in (118). Relative clauses appear to require a relativizing demonstrative.

(118)	mʊlɪmi	yó	ńde	kí-m̀-bɔ̂:n-a
	farmer	DEM.REL	TODAY.PST	1SG-3ST-see-FV

‘the farmer I saw’

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Appendix A: TAM Tables

This appendix gives examples of the major categories of tone patterns found across Shekgalagari TAMs. The columns give the root tone, number of syllables in the root (+FV), tone pattern pre-pausally, and the tone pattern before the function word *ʒwa*, which demonstrates downstep patterning with respect to function words: toneless *ʒwa* or a downstepped final syllable on the verb complex indicates that that construction conditions downstep with function words. For more details on downstep conditioning with regard to TAM and word class, see Crane (2009).

In the tables, only the main verbs are given in the columns, with a brief schematization of the full construction in the "tone pattern" column heading. For more information, see the relevant sections in the main body of this paper.

A1. Infinitive

ROOT TONE	**# SYLL**	**Tone Pattern** **χʊ + stem**	**Before** **ʒwá**	**ʒwá**
Ø	**1**	χʊ:ka Ø: Ø	χʊka Ø Ø	ʒwá H
Ø	**2**	χʊba:la Ø Ø:Ø	χʊbala Ø ØØ	ʒwá H
Ø	**3**	χʊhaphʊ:la Ø ØØ:Ø	χʊhaphʊla Ø ØØØ	ʒwá H
Ø	**4**	χʊtutʊlʊla Ø ØØØ:Ø	χʊtʊtʊlʊla Ø ØØØ	ʒwá H
H1	**1**	χʊ:gyá Ø: H	xʊgyá Ø H	ʒwá H
H1	**2**	χʊbɔ̂:na Ø F:Ø	χʊbɔ́na Ø HØ	ʒwá H
H1	**3**	χʊχópʊ́:la Ø HH:Ø	χʊχópʊ́:la Ø HHØ	ʒwá H
H1	**4**	χʊχáqʊ́lʊ:la Ø HHØ:Ø	χʊχáqʊ́lʊla Ø HHØØ	ʒwá H
H2	**2**	χʊlí:sa Ø H:Ø	χʊlísa Ø HØ	ʒwá H
H2	**3**	χʊlále:ʒa Ø HØ:Ø	χʊláleʒa Ø HØØ	ʒwá H
H2	**4**	χʊtʊ́ʊlʊ:la Ø HØØ:Ø	χʊtʊ́ʊlʊ:la Ø HØØØ	ʒwá H

A2. Infinitive - negative

ROOT TONE	# SYLL	Tone Pattern χʊ+shaa+stem	Before ʒwá	ʒwá
Ø	**1**	χʊ sháá́: ka Ø HH: Ø	χʊ sháá ka Ø HH Ø	ʒwá H
Ø	**2**	χʊ sháá ba:la Ø HH Ø:Ø	χʊ sháá bala Ø HH ØØ	ʒwá H
Ø	**3**	χʊ sháá haphʊ:la Ø HH ØØ:Ø	χʊ sháá haphʊla Ø HH ØØØ	ʒwá H
Ø	**4**	χʊ sháá tʊtʊlʊ:la Ø HH ØØØ:Ø	χʊ sháá tʊtʊlʊla Ø HH ØØØØ	ʒwá H
H1	**1**	χʊ sháa: gyá Ø HØ: H	χʊ sháa gyá Ø HØ H	ʒwá H
H1	**2**	χʊ sháa bɔ́:na Ø HØ F:Ø	χʊ sháa bɔ́na HØ HØ	ʒwá H
H1	**3**	χʊ sháa χópʊ́:la Ø HØ HH:Ø	χʊ sháa χópʊ́la Ø HØ HHØ	ʒwá H
H1	**4**	χʊ sháa χáqʊ́lʊ:la Ø HØ HHØ:Ø	χʊ sháa χáqʊ́lʊla Ø HØ HHØØ	ʒwá H
H2	**2**	χʊ sháa lí:sa Ø HØ H:Ø	χʊ sháa lísa Ø HØ HØ	ʒwá H
H2	**3**	χʊ sháa lále:ʒa Ø HØ HØ:Ø	χʊ sháa láleʒa Ø HØ HØØ	ʒwá H
H2	**4**	χʊ sháa tʊ́ʊlʊ:la Ø HØ HØØ:Ø	χʊ sháa tʊ́ʊlʊla Ø HØ HØØØØ	ʒwá H

A3. Imperative

ROOT TONE	# SYLL	Tone Pattern bare stem	Before ʒwá	ʒwá
Ø	**1**	ká H	ká H	ʒwa Ø
Ø	**2**	balá ØH	balá ØH	ʒwá H
Ø	**3**	haphʊ́la ØHØ	haphʊ́la ØHØ	ʒwá H
Ø	**4**	tʊtʊ́lʊ́la ØHHØ	tʊtʊ́lʊ́la ØHHØ	ʒwá H
H1	**1**	gyá H	gyá H	ʒwa Ø
H1	**2**	bɔ́na HØ	bɔ́na HØ	ʒwá H
H1	**3**	χópʊ́la HHØ	χópʊ́la HHØ	ʒwá H
H1	**4**	χáqʊ́lʊ́la HHHØ	χáqʊ́lʊ́la HHHØ	ʒwá H
H2	**2**	lísa HØ	lísa HØ	ʒwá H
H2	**3**	láléʒa HHØ	láléʒa HHØ	ʒwá H
H2	**4**	tʊ́ʊ́lʊ́la HHHØ	tʊ́ʊ́lʊ́la HHHØ	ʒwá H

A4. Imperative with object marker

Root Tone	**# Syll**	**Tone Pattern OM + stem**	**Before ʒwá**	**ʒwá**
Ø	**1**	báké H H	báké H H	ʒwa Ø
Ø	**2**	bábalɛ́ H ØH	bábalɛ́ H ØH	ʒwa Ø
Ø	**3**	báhaphʊ́lɛ́ H ØHH	báhaphʊ́lɛ́ H ØHH	ʒwa Ø
Ø	**4**	bátʊtʊ́lʊ́ĺɛ H ØHHH	bátʊtʊ́lʊ́ĺɛ H ØHHH	ʒwa Ø
H1	**1**	báhɛ́ H H	báhɛ́ H H	ʒwa Ø
H1	**2**	bábɔ́nɛ́ H HH	bábɔ́nɛ́ H HH	ʒwa Ø
H1	**3**	báχópʊ́lɛ́ H HHH	báχópʊ́lɛ́ H HHH	ʒwa Ø
H1	**4**	báχáqʊ́lʊ́lɛ́ H HHHH	báχáqʊ́lʊ́lɛ́ H HHHH	ʒwa Ø
H2	**2**	bálísɛ́ H HH	bálísɛ́ H HH	ʒwa Ø
H2	**3**	bálálé ʒɛ́ H HHH	bálálé ʒɛ́ H HHH	ʒwa Ø
H2	**4**	bátʊ́ʊ́lʊ́lɛ́ H HHHH	bátʊ́ʊ́lʊ́lɛ́ H HHHH	ʒwa Ø

A5. Imperative - negative

Root Tone	**# Syll**	**Tone Pattern shɪ + stem**	**Before ʒwá**	**ʒwá**
Ø	**1**	shɪkɛ́ Ø H	shɪkɛ́ Ø H	ʒwá H
Ø	**2**	shɪbalɛ́ Ø ØH	shɪbalɛ́ Ø ØH	ʒwá H
Ø	**3**	shɪhaphʊ́lɛ́ Ø ØHH	shɪhaphʊ́lɛ́ Ø ØHH	ʒwá H
Ø	**4**	shɪtʊtʊ́lʊ́lɛ́ Ø ØHHH	shɪtʊtʊ́lʊ́lɛ́ Ø ØHHH	ʒwá H
H1	**1**	shɪgyɛ́ Ø H	shɪgyɛ́ Ø H	ʒwá H
H1	**2**	shɪbɔ́nɛ́ Ø HH	shɪbɔ́nɛ́ Ø HH	ʒwá H
H1	**3**	shɪχópʊ́lɛ́ Ø HHH	shɪχópʊ́lɛ́ Ø HHH	ʒwá H
H1	**4**	shɪχáqʊ́lʊ́lɛ́ Ø HHHH	shɪχáqʊ́lʊ́lɛ́ Ø HHHH	ʒwá H
H2	**2**	shɪlísɛ́ Ø HH	shɪlísɛ́ Ø HH	ʒwá H
H2	**3**	shɪlálé ʒé Ø HHH	shɪlálé ʒé Ø HHH	ʒwá H
H2	**4**	shɪtʊ́ʊ́lʊ́lɛ́ Ø HHHH	shɪtʊ́ʊ́lʊ́lɛ́ Ø HHHH	ʒwá H

A6. Present- toneless subject marker

ROOT TONE	**# SYLL**	**Tone Pattern SM + stem + yO**	**Before ʒwá**	**ʒwá**
Ø	**1**	ʊka:yɔ́ Ø Ø: Ø	ʊka Ø Ø	ʒwá H
Ø	**2**	ʊbala:yɔ Ø ØØ: Ø	ʊbala Ø ØØ	ʒwá H
Ø	**3**	ʊhaphʊla:yɔ Ø ØØØ: Ø	ʊhaphʊla Ø ØØØ	ʒwá H
Ø	**4**	ʊtʊtʊlʊla:yɔ Ø ØØØ: Ø	**ʊtʊtʊlʊla** Ø ØØØ	ʒwá H
H1	**1**	ʊgyá:yɔ Ø H: Ø	ʊgyá Ø H	ʒwá H
H1	**2**	ʊbɔ́ná:yɔ Ø HH: Ø	ʊbɔ́na Ø HØ	ʒwá H
H1	**3**	ʊχópʊ́la:yɔ Ø HHØ: Ø	ʊχópʊ́la Ø HHØ	ʒwá H
H1	**4**	ʊχáqʊ́lʊla:yɔ Ø HHØØ: Ø	ʊχaq́ʊlʊla Ø HHØØ	ʒwá H
H2	**2**	ʊlísa:yɔ Ø HØ: Ø	ʊlísa Ø HØ	ʒwá H
H2	**3**	ʊláleʒa:yɔ Ø HØØ: Ø	ʊláleʒa Ø HØØ	ʒwá H
H2	**4**	ʊtʊ́ʊlʊla:yɔ Ø HØØØ:Ø	ʊtʊ́ʊlʊla Ø HØØØ	ʒwá H

A7. Present - H-toned subject marker

ROOT TONE	**# SYLL**	**Tone Pattern H SM + stem + XO**	**Before ʒwá**	**ʒwá**
Ø	**1**	báka:χɔ́ H Ø: H	báká H H	ʒwá H
Ø	**2**	bábála:χɔ́ H HØ: H	bábálá H HH	ʒwá H
Ø	**3**	bááphʊla:χɔ́ H HØØ: H	báháphʊ́lá H HHH	ʒwá H
Ø	**4**	bátʊ́tʊlʊla:χɔ́ H HØØØ: H	bátʊ́tʊ́lʊ́lá H HHHH	ʒwá H
H1	**1**	bágya:χɔ́ H Ø: H	bágyá H H	ʒwá H
H1	**2**	bábɔ́na:χɔ́ H HØ: H	bábɔ́ná H HH	ʒwá H
H1	**3**	báháphʊ́la:χɔ́ H HHØ: H	báháphʊ́lá H HHH	ʒwá H
H1	**4**	báχáqʊ́lʊla:χɔ́ H HHØØ: H	báχáqʊ́lʊ́lá H HHHH	ʒwá H
H2	**2**	bálísa:χɔ́ H HØ: H	bálísá H HH	ʒwá H
H2	**3**	báláleʒa:χɔ́ H HØØ: H	bálálέʒá H HHH	ʒwá H
H2	**4**	bátʊ́ʊlʊla:χɔ́ H HØØØ: H	bátʊ́ʊ́lʊ́lá H HHHH	ʒwá H

A8. Present- Negative

ROOT TONE	# SYLL	Tone Pattern ha + (H)SM[25] + stem	Before ʒwá	ʒwá
Ø	**1**	habá:kɛ Ø H: Ø	habákɛ́ Ø H H	ʒwa Ø
Ø	**2**	habába:lɛ́ Ø H Ø:H	habábálɛ́ Ø H ØH	ʒwa Ø
Ø	**3**	habáhaphʊ́:lɛ Ø H ØH:Ø	habáhaphʊ́lɛ́ Ø H ØHH	ʒwa Ø
Ø	**4**	habátʊtʊ́lʊ́:lɛ Ø H ØHH:Ø	habátʊtʊ́lʊ́lɛ́ Ø H ØHHH	ʒwa Ø
H1	**1**	habá:gyɛ Ø H: Ø	habágyɛ́ Ø H H	ʒwa Ø
H1	**2**	habábɔ́:nɛ Ø H H:Ø	habábɔ́nɛ́ Ø H HH	ʒwa Ø
H1	**3**	habáχópʊ́:lɛ Ø H HH:Ø	habáχópʊ́lɛ́ Ø H HHH	ʒwa Ø
H1	**4**	habáχáqʊ́lʊ́:lɛ Ø H HHH:Ø	habáχáqʊ́lʊ́lɛ́ Ø H HHHH	ʒwa Ø
H2	**2**	habálí:sɛ Ø H H:Ø	habálísɛ́ Ø H HH	ʒwa Ø
H2	**3**	habálálé:ʒɛ Ø H HH:Ø	habáláléʒɛ́ Ø H HHH	ʒwa Ø
H2	**4**	habáχáqʊ́lʊ́:lɛ Ø H HHH:Ø	habáχáqʊ́lʊ́lɛ́ Ø H HHHH	ʒwa Ø

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[25] In the present negative, the 3sg SM is optionally toneless before Ø stems.

A9. Past - immediate (perfective)

ROOT TONE	**# SYLL**	**Tone Pattern SM[26] + stem**	**Before ʒwá**	**ʒwá**
Ø	**1**	a:ka Ø: Ø	aka Ø Ø	ʒwá H
Ø	**2**	aba:la Ø Ø:Ø	abala Ø ØØ	ʒwá H
Ø	**3**	ahaphʊ:la Ø ØØ:Ø	ahaphʊla Ø ØØØ	ʒwá H
Ø	**4**	aχaqʊlʊ:la Ø ØØØ:Ø	aχaqʊlʊla Ø ØØØØ	ʒwá H
H1	**1**	aa:gyá Ø: H^1	aagyá ØØ H	ʒwá H
H1	**2**	abɔ̂:na Ø F: Ø	abɔ́na Ø HØ	ʒwá H
H1	**3**	aχópʊ́:la Ø HH:Ø	aχópʊ́la Ø HHØ	ʒwá H
H1	**4**	aχáqʊ́lʊ:la Ø HHØ:Ø	aχáqʊ́lʊla Ø HHØØ	ʒwá H
H2	**2**	alí:sa Ø H:Ø	alísa Ø HØ	ʒwá H
H2	**3**	alále:ʒa Ø HØ:Ø	aláleʒa Ø HØØ	ʒwá H
H2	**4**	atʊ́ʊlʊ:la Ø HØØ:Ø	atʊ́ʊlʊla Ø HØØØ	ʒwá H

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[26] These examples use a toneless SM (3sg), but a H-toned SM would not result in any different patterns.

A10. Past - recent (imperfective)

ROOT TONE	# SYLL	Tone Pattern (láábè) SM+ stem	Before ʒwá	ʒwá
Ø	**1**	bí:ka H: Ø	bí ꜜká H H	ʒwá H
Ø	**2**	bíbá:la H H:Ø	bíbáꜜlá H H H	ʒwá H
Ø	**3**	bíháphʊ:la H HØ:Ø	bíháphʊla H HØØ	ʒwá H
Ø	**4**	bítʊ́tʊlʊla H HØØ:Ø	bítʊ́tʊlʊla H HØØØ	ʒwá H
H1	**1**	bíɪ:gyá HØ: H	bíɪgyá HØ H	ʒwa Ø
H1	**2**	bíbɔ̂:na H F:Ø	bíbɔ́ná H HH	ʒwa Ø
H1	**3**	bíχópʊ́:la H HH:Ø	bíχópʊ́ꜜ lá H HH H	ʒwá H
H1	**4**	bíχáqʊ́lʊ:la H HHØ:Ø	bíχáqʊ́lʊla H HHØØ[1]	ʒwá H
H2	**2**	bílí:sa H H:Ø	bílí ꜜsá H H H	ʒwá H
H2	**3**	bíláleːʒa H HØ:Ø	bíláleʒa H HØØ	ʒwá H
H2	**4**	bítʊ́ʊlʊ:la H HØØ:Ø	bítʊ́ʊlʊla H HØØØ	ʒwá H

A11. Potential - present

Root Tone	**# Syll**	**Tone Pattern SM + qá + stem**	**Before ʒwá**	**ʒwá**
Ø	**1**	ba qá: ka Ø H: Ø	ba qá ka Ø H Ø	ʒwá H
Ø	**2**	ba qá ba:la Ø H Ø:Ø	ba qá bala Ø H ØØ	ʒwá H
Ø	**3**	ba qá haphʊ:la Ø H ØØ:Ø	ba qá haphʊla Ø H ØØØ	ʒwá H
Ø	**4**	ba qá tʊtʊlʊ:la Ø H ØØØ:Ø	ba qá tʊtʊlʊla Ø H ØØØØ	ʒwá H
H1	**1**	ba qáa: gyá Ø HØ: H[1]	ba qáa gyá Ø HØ H	ʒwá H
H1	**2**	ba qá bɔ̂:na Ø H F:Ø	ba qá bɔ́na Ø H HØ	ʒwá H
H1	**3**	ba qá χópʊ́:la Ø H HH:Ø	ba qá χópʊ́la Ø H HHØ	ʒwá H
H1	**4**	ba qá χáqʊ́lʊ:la ØH HHØ:Ø	ba qá χáqʊ́lʊla Ø H HHØØ	ʒwá H
H2	**2**	ba qá lí:sa Ø H H:Ø	ba qá lísa Ø H HØ	ʒwá H
H2	**3**	ba qá lále:ʒa ØH HØ:Ø	ba qá láleʒa Ø H HØØ	ʒwá H
H2	**4**	ba qá tʊ́ʊlʊ:la ØH HØØ:Ø	ba qá tʊ́ʊlʊla Ø H HØØØ	ʒwá H

A12. Potential (today past)

ROOT TONE	# SYLL	Tone Pattern (ńdè) + SM + qa + stem	Before ʒwá	ʒwá
Ø	**1**	bá qa: ka H Ø: Ø	bá qa ka H Ø Ø	ʒwá H
Ø	**2**	bá qa ba:la H Ø Ø:Ø	bá qa bala H Ø ØØ	ʒwá H
Ø	**3**	bá qa haphʊ:la H Ø ØØ:Ø[1]	bá qa haphʊla H Ø ØØØ	ʒwá H
Ø	**4**	bá qa tʊtʊlʊ:la H Ø ØØØ:Ø	bá qa tʊtʊlʊla H Ø ØØØØ	ʒwá H
H1	**1**	bá qaa: gyá H ØØ: H	bá qaa gyá H ØØ H	ʒwa Ø
H1	**2**	bá ꜜqá bɔ̂:na H ꜜH F:Ø	bá ꜜqá bɔ́na H ꜜH HØ	ʒwa Ø
H1	**3**	bá ꜜqá χópʊ́:la H ꜜH HH:Ø	bá ꜜqa ´χópʊ́la H ꜜH HHØ	ʒwá H
H1	**4**	bá ꜜqá χáqʊ́lʊ:la H ꜜH HHØ:Ø	bá ꜜqá χáqʊ́lʊla H ꜜH HHØØ	ʒwá H
H2	**2**	bá ꜜqá lí:sa H ꜜH H:Ø	bá ꜜqá lísa H ꜜH HØ	ʒwá H
H2	**3**	bá ꜜqá lále:ʒa H ꜜH HØ:Ø	bá ꜜqá láleʒa H ꜜH HØØ	ʒwá H
H2	**4**	bá ꜜqá tʊ́ʊlʊ:la H ꜜH HØØ:Ø	bá ꜜqá tʊ́ʊlʊla H ꜜH HØØØ	ʒwá H

A13. *-ile* (anterior?)

Root Tone	**# Syll**	**Tone Pattern SM + stem + /ile/**	**Before ʒwá**	**ʒwá**
Ø	**1**	bíki:lé H Ø:H	bíkilé H ØH	ʒwa Ø
Ø	**2**	bíbarî:le H ØF:Ø	bíbarílé H ØHH	ʒwa Ø
Ø	**3**	bíhaphʊ́rî:le H ØHF:Ø	bíhaphʊ́rílé H ØHHH	ʒwa Ø
Ø	**4**	(bítʊtʊ́lʊ́rî:le) H ØHHF:Ø	(bítʊtʊ́lʊ́rílé) H ØHHHH	ʒwa Ø
H1	**1**	bígyî:le H F:Ø	bígyílé H HH	ʒwa Ø
H1	**2**	bíbɔ́nî:ne H HF:Ø	bíbɔ́níné H HHH	ʒwa Ø
H1	**3**	bíhópʊ́rî:le H HHF:Ø	bíhópʊ́rílé H HHHH	ʒwa Ø
H1	**4**	(bíχáqʊ́lʊ́rî:le) H HHHF:Ø	(bíχáqʊ́lʊ́rílé) H HHHHH	ʒwa Ø
H2	**2**	bílísî:ʒe H HF:Ø	bílísíʒé H HHH	ʒwa Ø
H2	**3**	bílálérî:ʒe H HHF:Ø	bílálériʒé H HHHH	ʒwa Ø
H2	**4**	(bítʊ́ʊ́lʊ́rí:le) H HHHF:Ø	(bítʊ́ʊ́lʊ́rílé) H HHHHH	ʒwa Ø

A14. Hortative

Root Tone	# Syll	Tone Pattern á # SM + stem	Before ʒwá	ʒwá
Ø	**1**	á ꜜbákɛ / á ꜜbakɛ H ꜜH Ø / H Ø Ø	á ꜜbákɛ / á bakɛ H ꜜH Ø / H Ø Ø	ʒwá H
Ø	**2**	á ꜜbábálɛ H ꜜH HØ	á ꜜbábálɛ H ꜜH HØ	ʒwá H
Ø	**3**	á ꜜbáháphʊlɛ́ H ꜜH HØH	á ꜜbáháphʊlɛ́ H ꜜH HØH	ʒwá H
Ø	**4**	á ꜜbátʊ́tʊlʊlɛ́ H ꜜH HØØH	á ꜜbátʊ́tʊlʊlɛ́ H ꜜH HØØH	ʒwá H
H1	**1**	á ꜜbágyɛ / ábagyɛ H ꜜH Ø / H Ø Ø	á ꜜbágyɛ / á bagyɛ H ꜜH Ø / H Ø Ø	ʒwá H
H1	**2**	á ꜜbábɔ́nɛ H ꜜH HØ	á ꜜbábɔ́nɛ H ꜜH HØ	ʒwá H
H1	**3**	á ꜜbáχópʊlɛ́ H ꜜH HØH	á ꜜbáχópʊlɛ́ H ꜜH HØH	ʒwá H
H1	**4**	á ꜜbáχáqʊlʊlɛ́ H ꜜH HØØH	á ꜜbáχáqʊlʊlɛ́ H ꜜH HØØH	ʒwá H
H2	**2**	á ꜜbálísɛ H ꜜH HØ	á ꜜbálísɛ H ꜜH HØ	ʒwá H
H2	**3**	á ꜜbálálezhé H ꜜH HØH	á ꜜbálálezhé H ꜜH HØH	ʒwá H
H2	**4**	á ꜜbátʊ́ʊlʊlɛ́ H ꜜH HØØH	á ꜜbátʊ́ʊlʊlɛ́ H ꜜH HØØH	ʒwá H

A15. Persistive - future - negative

ROOT TONE	**# SYLL**	**Tone Pattern SM-da (ꜜ)χʊ-be SM-ꜜshántsɪ… SM + sháa + stem**	**Before ʒwá**	**ʒwá**
Ø	**1**	bá shaáa: kɛ́ H HØ: H	ba sháꜜá kɛ́ H HꜜH H	ʒwá H
Ø	**2**	bá sháa ba:lɛ́ H HØ Ø:H	bá sháa balɛ́ H HØ ØH	ʒwá H
Ø	**3**	bá sháa haphʊ̂:lɛ H HØ ØF:Ø	bá sháa haphʊ́lɛ́ H HØ ØHH	ʒwá H
Ø	**4**	bá sháa tʊtʊ́lʊ̂:lɛ H HØ ØHF:Ø	bá sháa tʊtʊ́lʊ́lɛ́ H HØ ØHHH	ʒwá H
H1	**1**	bá sháa: hɛ́ H HØ: H	bá sháꜜá hɛ́ H HꜜH H	ʒwá H
H1	**2**	bá shaꜜá bɔ̂:nɛ H HꜜH F:Ø	bá sháꜜá bɔ́nɛ́ H HꜜH HH	ʒwá H
H1	**3**	bá sháꜜa´χɔ́pʊ̂:lɛ H HꜜH HF:Ø	bá sháꜜá χɔ́pʊ́lɛ́ H HꜜH HHH	ʒwá H
H1	**4**	bá sháꜜá χáqʊ́lʊ̂:lɛ H HꜜH HHF:Ø	bá sháꜜá χáqʊ́lʊ́lɛ́ H HꜜH HHHH	ʒwá H
H2	**2**	bá sháꜜá lî:sɛ H HꜜH F:Ø	bá sháꜜá lísɛ́ H HꜜH HH	ʒwá H
H2	**3**	bá sháꜜá lálê:ʒe H HꜜH HF:Ø	bá sháꜜá láléʒé H HꜜH HHH	ʒwá H
H2	**4**	bá sháꜜá tʊ́ʊ́lʊ̂:lɛ H HꜜH HHF:Ø	bá sháꜜá tʊ́ʊ́lʊ́lɛ́ H HꜜH HHHH	ʒwá H

Appendix B: Glosses and other abbreviations

-	morpheme boundary
#	word/minor phrase boundary
%	(major) phrase boundary
:	lengthened mora
3PL	3rd person plural
ANT	anterior (≈perfect)
CL15	noun class 15 (for example)
COP	copula
DEM	demonstrative
DIST.PAST	distant (far) past
DS	downstep
EMPH	emphatic marker
F	falling (HL) tone
FINAL	final morpheme (on phrase-final present tense affirmative forms)
FV	final vowel
H	H-toned mora
H2	(bounded) spreading-H verb root type vverb verb
H2	non-spreading H-toned verb root type
HORT	hortative
HTS	H-tone spreading
IMP	imperative
INF	infinitive
IPFV	imperfective
IRR	irrealis
M	mid-level tone (phonetic)
NEG	negative marker
Ø	toneless mora (or verb root)
OM	object marker
PERS	persistive ("still") marker
PLL	penultimate lengthening and lowering
POT	potential
PRES	present
REC.PAST	recent past
REL	relativizing marker
SM	subject marker
TAM	tense/aspect/mood
TODAY.PST	today (hodiernal) past
YEST.PAST	yesterday past