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Volume 3

Osamu Hieda (ed.)

# Descriptive Studies of Nilotic Languages

Research Institute for Languages and Cultures of Asia and Africa

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Nilotic languages display great typological diversity of morpho-syntactic phenomena. For instance, the sentence structure of these relatively little studied languages is spectacular. The sentence structure of Western Nilotic languages stands out as being highly unusual, not only on African standards but also compared to languages in other part of the world. All word orders except for SOV are observable in Nilotic languages. Some of them have case system to function grammatical relation, and others utilize word order for demonstrating grammatical relationship. 'Ergative' languages are sometimes argued to exist in Western Nilotic languages

Nilotic languages are relatively well studied among Nilo-Saharan phylum, though descriptive data are not enough for discussing various cross-linguistically interesting phenomena. Morpho-syntactic descriptive data are especially insufficient. This series offers descriptive data of Nilotic languages for discussing morpho-syntactic and other linguistic phenomena.

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The editor wants to thank all contributors for their support.

The Editor

Contents

# Tonal system in Acooli - double downstep and syntactic functions of tone -

Osamu Hieda

Abstract

Acooli, a western Nilotic language, has two types of downstep high tones, a downstep high tone and a double downstep high tone. Double downstep is attested only in a handful of languages. More than two downstep high tones are synchronically attested in still fewer languages. Acooli has synchronically two kinds of downstep high tones, a downstep high and a double downstep high tones. This paper is the first attempt to show that Acooli has a downstep high tone and a double downstep high tone. This paper shows that 'floating tone approach' is applicative to phonological representations of downstep and double downstep in Acooli.

Acooli tonal system consists of the general tonal principles and the language specific tone sandhi rules. The general tonal principles are common and well-known in autosegmental theories. They are summarized as follows: 1) Tonemes are assigned to TBUs from left to right. 2) Association lines do not cross each other. 3) High tonemes are preferable for being assigned to TBUs. Acooli has only two language specific tone sandhi rules, High spread and 'Floating high assignment.' Tone sandhi occurs beyond a boundary of phonological units. I propose the principle that all lexical tonemes but floating high tonemes are preserved within a phonological unit all through tonal process. However, the principle has an exception which results from floating high tonemes. A floating high toneme is assigned to a TBU of a following phonological unit over a boundary of phonological units.

Tone has various syntactic functions in Acooli. For instance, perfect aspect is marked only by tone. Direct and indirect speech are distinguished by tone. Moreover, suprasegmental boundaries function for making distinction of syntactic structures.

## 1. Introduction

Double downstep is attested only in a handful of languages (Clark 1993: 29-73, Hyman 1985: 47-83, Snider & van der Hulst 1993: 1-27). Kumam, a western Nilotic language, has

synchronically two kinds of downstep high tones, a downstep high tone and a double downstep high tone (Hieda 2010: 1-25). Acooli, which is genetically close to Kumam, also has synchronically two kinds of downstep high tones. This paper presents a sketch of tonal system in Acooli and explains how these two kinds of downstep high tones are derived synchronically.

Many linguists have argued that downstep is phonologically conditioned by a floating low toneme (Clements and Ford 1979, Pulleyblank 1986). However, some linguists pointed out that 'floating tone approach' is accompanied by several serious disadvantages (Carlson 1983, Clark 1993, Odden 1982). We will join neither in the discussion to arrive at a settlement of the issue, nor in the discussion on the theoretical issue of tonal representation. I will only show that 'floating tone approach' can be applied to phonological representations of downstep and double downstep in Acooli. Moreover, I will point out in this paper that tone performs syntactic functions in Acooli.

Acooli is a language of the southern Lwo group of western Nilotic. Western Nilotic languages constitute one of the three branches in the Nilotic languages, which form a large group among the members of the Nilo-Saharan phylum (Greenberg 1966). With regard to grammar and lexicon, Acooli is closely related to Lango and Kumam in the southern Lwo group.

Acooli is mostly spoken in North central Acholi district in Uganda. The number of speakers is given as 746,796. Some speakers also live in Sudan. The number of speakers in Sudan is 45,000 (Gordon 2005).

Though the Nilo-Saharan is not comprehensively studied, the Nilotic languages are relatively well researched. There are a few descriptive works previously published on the Acooli language. Among them Crazzolara 1954 contains an outline of grammar and a vocabulary of Acooli. It also includes information of tone. Culver 1970 discusses relative constructions of Acooli in a generative-transformational analysis.

There are some descriptive works on other western Nilotic languages. The recent and most useful work is Noonan 1992, which contains grammar and small vocabulary of Lango. Noonan 1992 adopts an autosegmental analysis to demonstrate tonal system of Lango. In this paper the autosegmental theory is adopted as well, but the approach leads us to quite different results from Noonan 1992[1].

[1] Noonan 1992 does not imply that Lango has double downstep. No predecessor reported that western Nilotic languages have double downstep except for Hieda 2010.

## 2. Phonology

The purpose of this paper is to describe tonal system of Acooli and to explain how the two kinds of downstep high tones are synchronically derived. The following section offers minimum phonological information that is a prerequisite for discussing tonal phenomena.

Acooli's consonantal system is relatively simple. The following inventory of consonant phonemes is posited.

| (1) | bilabials | alveolars | palatals | velars |
|---|---|---|---|---|
| voiceless stops | p | t | c | k |
| voiced stops | b | d | j | g |
| lateral | | l | | |
| trill | | r | | |
| nasals | m | n | ɲ | ŋ |
| semi-vowels | w | | y | |

Fricatives are excluded from the above inventry, because they are observed only in newly borrowed words.

Geminated consonants are observed only in forms which are derived through morphological processes. For instance, when a noun ending in a consonant is followed by a first person singular possessive pronominal suffix *–ná* 'my', the alveolar nasal /n/ of the suffix is assimilated to the preceding consonant and forms a geminated consonant with the preceding one. When a noun ends in a vowel, the alveolar nasal /n/ of the possessive pronominal suffix is not assimilated to the preceding consonant and does not form a geminated consonant with the preceding consonant.

(2) cák 'milk' + -ná 'my' → cákká 'my milk'
kɔ́m 'chair' + -ná 'my' → kɔ́mmá 'my chair'
cogó 'bone' + -ná 'my' → cogoná 'my bone' [2]

Semi-vowels may constitute nuclei of syllables as glides with the following vowels (cf. myɛl 'dance'). The semi-vowels are, however, involved in the inventory of consonantal phonemes, because they may sometimes fill an onset position of syllables (cf. wic 'head', yat 'tree').

The alveolar voiceless stop consonant /t/ is phonetically pronounced as an alveolar flap consonant /ɾ/ intervocally in stem-final position (cf. /maatɔ/ [maaɾɔ] 'to drink').

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[2] The vowel /a/ of the suffix is subjected to vowel harmony.

The trill consonant /r/ is not phonetically pronounced in word-final position. The preceding vowel is phonetically pronounced long in compensation for the loss of the trill consonant /r/ (cf. /yer/ [yee] 'hair').

The Acooli velar voiceless stop consonant /k/ is pronounced farther back in the mouth than the ordinary velar /k/. The velar voiceless stop consonant /k/ is sometimes pronounced as a post-velar voiced fricative consonant [ɣ] intervocally in stem-final position (cf. /dɑko/ [dɑɣo] 'woman').

Acooli has ten vowel phonemes. The following inventory is posited.

(3)

| | [−ATR] | | [+ATR] | |
|---|---|---|---|---|
| | front | back | front | back |
| high | ɪ | ʊ | i | u |
| mid | ɛ | ɔ | e | o |
| low | | a | | ɑ |

The vowels are divided into two sets with regard to vowel harmony. The basic rule of vowel harmony is that a word consists of syllables whose nuclei contain vowels of the same value regarding the [ATR] category. Moreover, [+ATR] vowels control vowel harmony in words. For example, when the first person singular possessive pronominal suffix *–ná* 'my', which consists of a syllable containing /a/ [−ATR] vowel, is attached to a noun consisting of syllables with [+ATR] vowels, the [−ATR] vowel /a/ of the suffix changes its [ATR] value from [−] to [+] in harmony with the value of [ATR] of the preceding vowels. When the first person singular possessive pronominal suffix *–ná* 'my' is attached to a noun consisting of syllables with [−ATR] vowels, the vowel of the suffix does not change its [ATR] value.

(4) remó 'blood' + -ná 'my' → remoná 'my blood'
kɔ́m 'chair' + -ná 'my' → kɔ́mmá 'my chair'

The vowel harmony rule is applied to affixes that constitute words, not to clitics.

Acooli vowels have no distinctive opposition of length in lexicon. However, phonologically distinctive long vowels occur in forms which are derived through morphosyntactic processes. For example, infinitive forms of transitive verbs present a distinctive contrast to finite ones by bearing a long vowel. It seems that the supposed transitive infinitive suffix *-nɔ is attached to a verbal stem and that the alveolar nasal of the suffix is assimilated to the preceding consonant of the verbal stem.

(5) mat- 'drink' + *-nɔ TRI → *mat-tɔ → maatɔ 'to drink'

The alveolar nasal consonant of the suffix is assimilated to the preceding consonant with regard to both manner and point of articulation and makes a geminated consonant with the preceding consonant. The stem vowels are lengthened in compensation for the loss of one of the geminated consonants. However, there is no clear-cut evidence to prove the transitive infinitive suffix *-nɔ, gemination of stem-final consonants and compensatory lengthening of stem vowels[3]. In fact infinitive forms of transitive verbs are distinguished from finite ones by vowel length. Vowel length performs morphosyntactic function in Acooli.

We must discuss vowel sandhi in detail, because vowel sandhi is relevant to the following discussions on tonal system in Acooli. Phonetic vowel coalescence occurs in rapid speech. When a word ending in a vowel is followed by a word beginning with a vowel, the final vowel of the preceding word coalesces with the initial vowel of the following word. Under certain conditions the final vowel of the preceding word is deleted[4]. The preserved vowel of the following word assumes the [ATR] value of the deleted vowel. For instance, when the final vowel /a/ of the possessive preposition *pá* 'of' is deleted before the vowel /o/ of the proper noun *opíyo* 'Opiyo', the [−ATR] value of the deleted vowel /a/ is copied to the preserved vowel /o/, and the preserved vowel /o/ turns to be [−ATR] vowel /ɔ/.

(6) bʊ́k pá opíyo → [bʊ́k pɔ́!píyo]
book of Opiyo 'book of Opiyo'

As far as the tonal phenomena are concerned, what is important to note is the following. When a vowel is deleted in vowel sandhi, the toneme primarily associated with the deleted vowel is preserved. Including the tonal phenomena the vowel sandhi rule is formalized in (7). The preceding vowel $V_1$ is deleted before the following vowel $V_2$, though the toneme $T_1$ and $T_2$ are preserved. In (8) the high toneme associated with the vowel of the possessive preposition *pa*

[3] If Acooli had verb stems ending in a vowel, the transitive infinitive suffix *-*nɔ* could be observed in the transitive infinitive of the verbs. In fact Kumam, which is a closely related language to Acooli, has verb stems ending in a vowel. The transitive infinitive suffix -nɔ is observed in the transitive infinitive of the verbs in Kumam (cf. mɪ- 'give' + -nɔ TRI → mɪnɔ 'to give'). Of course, when verb stems end in a vowel, gemination of stem-final consonants and compensatory lengthening of stem vowels do not occur in Kumam. When Kumam verb stems end in a vowel, Acooli verb stems corresponding to the Kumam verb stems always end in a semi-vowel (cf. mɪy- 'give,' mɪɪyɔ 'to give' in Acooli).

[4] Vowel sandhi occurs in unstressed vowels. In addition, vowel sandhi is blocked by some syntactic boundaries.

'of' is preserved during tonal process, even though the vowel is deleted in vowel sandhi[5].

(7) Vowel Sandhi on phonetic level

$[\cdots V_1]\#\#[V_2\cdots] \rightarrow [\cdots \varphi\#\#V_2\cdots]$

Vowel category: [αATR] [αATR]

Tone level: $T_1$ $T_2$ $T_1$ $T_2$

(8) H L LH L H (L)(L) H L

bʊ́k pá opíyo → [bʊ́k pɔ́!píyo]

book of Opiyo 'book of Opiyo'

Vowel sandhi takes place also on morphophonological level. When a morpheme ending in a vowel is followed by a morpheme beginning with a vowel in morphological derivation, the final vowel of the preceding morpheme is deleted before the initial vowel of the following morpheme. The toneme which is associated primarily with the deleted vowel is preserved even if the vowel is deleted in accordance with the vowel sandhi rule. Including the tonal phenomena, the vowel sandhi rule of morphophonological level is formalized in (9).

(9) Vowel Sandhi on morphophonological level

$\cdots V_1\text{-}V_2\cdots \rightarrow \cdots \varphi\text{-}V_2\cdots$

Tone level: $T_1$ $T_2$ $T_1$ $T_2$

(10) L H H L H L H (H) (L) H

a=nek-o-ɛ → a=né!k-é

1SG=IMP:kill-TR-3SG 'I kill him.'

(11) LHHL LHL L H H(L) L H L

a=nek-o lacɔɔ → a=nék-ó lacɔ́ɔ

1SG=IMP:kill-TR man 'I kill a man.'

The first person singular subject clitic *a=* bears the tonal pattern L H in underlying

[5] Tonal process will be discussed later.

representation. The imperfect aspect is marked with a zero suprasegmental morpheme. A simple verbal stem always bears an H toneme in indicative. The transitive formative suffix -ɔ bears an L toneme in lexicon[6]. The vowel of the transitive formative suffix -ɔ coalesces with the vowel of the third person singular object suffix -ɛ and is deleted in vowel sandhi, but the low toneme primarily associated with the vowel of the transitive formative suffix is preserved in (10)[7].

In the case of vowel sandhi of morphophonological level values of [ATR] category can be ignored, because vowels of affixes are subjected to vowel harmony with vowels of verbal stems. Although the final vowel $V_1$ of the preceding morpheme is deleted before the first vowel $V_2$ of the following morpheme, the toneme $T_1$ which is primarily assigned to $V_1$ is preserved in vowel sandhi.

## 3. Tonal system in Acooli

Acooli is a tone language, exhibiting a low tone, a high tone, a falling tone, a rising tone, a downstep high tone and a double downstep high tone which contrast on phonetic level. However, a low toneme and a high toneme are posited in underlying representations. There are a few tone sandhi rules which have the effect of altering underlying representations of phonological units in some phonological environments. In addition to the language specific tone sandhi rules, Acooli follows the general tonal principles of assigning tonemes to tone bearing units, which are well known in autosegmental theories.

### 3.1. Inventory of tones

Phonetically there are four level tones in Acooli[8]. They are referred to as a high tone, a low tone, a downstep high tone and a double downstep high tone. A high tone is transcribed with an acute accent on a vowel, because a tone bearing unit (TBU, hereafter) consists of a syllable, and besides, only a vowel always forms a syllable nucleus in Acooli. There is neither a syllabic nasal nor a syllabic consonant in the language. A low tone is transcribed without any marker on a vowel.

There are two contour tones, a falling tone and a rising tone[9]. A falling tone is transcribed with a circumflex on a vowel. A rising tone is transcribed with a wedge on a vowel.

---

[6] The vowel /ɔ/ of the transitive formative suffix is subjected to vowel harmony with a stem vowel of verbs.

[7] The tonal process will be discussed later.

[8] Crazzolara 1955 records 3 level tones. Downstep as well as double downstep was not known in those days.

[9] Crazzolara 1955 records 5 contour tones.

Acooli has a downstep high tone and a double downstep high tone. A downstep high tone is transcribed with an acute accent on a vowel preceded by an astonishing mark before the syllable whose nucleus the vowel forms. A double downstep high tone is transcribed with an acute accent on a vowel preceded by double astonishing marks before the syllable whose nucleus the vowel forms.

There are the following significant tonal distinctions on phonetic level in Acooli:

| (12) Tone | Transcription | Abbreviation | Musical step |
|---|---|---|---|
| low | [a] | l | do |
| high | [á] | h | fa |
| falling | [â] | f | fa-do |
| rising | [ǎ] | r | do-fa |
| downstep high | [!á] | ds | mi |
| double downstep high | [!!á] | dds | re |

Since high tones may be actually pronounced lower than the preceding low tones as a result of intonational phenomenon of downdrift, it is impossible to express phonic height of tones in an absolute scale of musical steps. However, a double downstep high tone is not common crosslinguistically. A rough description of phonic height in a scale of musical steps might assist to hold an approximate image of tones, especially of a double downstep high tone. Hereafter phonetic descriptions are given without square brackets.

| (13) | | | | |
|---|---|---|---|---|
| wic | 'head' | l | do |
| dóg | 'mouth' | h | fa |
| dóg râc | 'mouth is bad' | h f | fa fa-do |
| nĕn | 'Look!' | r | do-fa |
| ɲím!má | 'my face' | h ds | fa mi |
| a=né!!n-é | 'I saw him.' | l h dds | do fa re |

A falling tone appears in the phonologically limited environments where the tonal sandhi rules, High spread and 'Floating high assignment', are applied[10]. A rising tone is in limited distribution where it appears exclusively in subjunctives or imperatives.

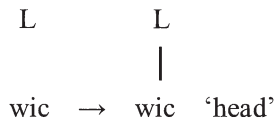
[10] High spread and 'Floating high assignment' are discussed in section 3.3.

### 3.2. Tonemes in underlying representations

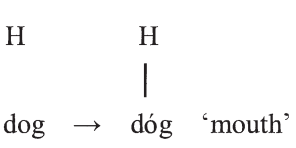
Two tonemes, a high toneme and a low toneme, are posited in underlying representations. This position results in six tones in surface representations listed in (12). Underlying tonemes are transcribed with large capitals, H for a high toneme and L for a low toneme. When a low toneme is assigned to a TBU, the TBU is phonetically pronounced with a low tone (14). When a high toneme is assigned to a TBU, the TBU is phonetically pronounced with a high tone (15). When a high toneme and a low toneme are assigned to a TBU sequentially, the TBU is phonetically pronounced with a falling tone (16). When a low toneme and a high toneme are assigned to a TBU in a sequence, the TBU is phonetically pronounced with a rising tone (18). When a TBU associated with a high toneme is preceded by a floating low toneme, it is phonetically pronounced with a downstep high tone (20). A downstep high tone appears only after another high tone. If a TBU associated with a high toneme is preceded by a sequence of a floating low toneme, a floating high toneme and a floating low toneme, then it is phonetically pronounced with a double downstep high tone (21). A double downstep high tone appears only after another high tone.

In order to clarify the above-mentioned relation between the underlying representations and the surface representations, we make use of conventions in autosegmental analysis.

(14) L → l

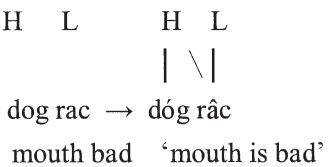



(15) H → h




The TBU connected to an underlying low toneme with an association line is pronounced with a surface low tone in (14). The TBU connected to an underlying high toneme with an association line is pronounced with a surface high tone in (15).

(16) HL → f



The TBU connected to an underlying high toneme and an underlying low toneme with association lines in a sequence is pronounced with a surface falling tone (16)[11]. The TBU of *rac* 'bad' is connected to an underlying high toneme and an underlying low toneme in a sequence with association lines, and is pronounced with a surface falling tone.

A falling tone appears in limited phonological environments. A TBU connected to an underlying high toneme and an underlying low toneme in a sequence is mostly pronounced with a surface high tone as in (17.a).

(17) (a) HL → h

```
HHL        H  H  L
           |  |  /
dɑko  →  dɑ́kó  'woman'
```

(b) HHL H

```
H H (L) H
|  |    /
dɑko + na  →  dɑ́kó!ná
woman my      'my woman'
```

Though the rightmost TBU of the phonological unit *dako* 'woman' is connected to an underlying high toneme and an underlying low toneme with association lines, it is pronounced with a surface high toneme in (17.a).

When the first person singular possessive pronominal suffix *–na* 'my' is attached to the noun *dako* 'woman', the first person singular possessive pronominal suffix is pronounced with a downstep high tone. When a TBU assigned with a high toneme is preceded by a floating low toneme, it is pronounced with a downstep high tone. The example (17.b) tells us that the phonological unit *dako* 'woman' bears a floating low toneme in the rightmost position. The rightmost TBU of *dako* 'woman' is connected to an underlying high toneme and an underlying low toneme, though it is phonetically pronounced with a high tone in citation.

(18) LH → r

```
LH       L  H [12]
         |/
nɛn  →  nɛ̌n  'Look!'
```

[11] The tone sandhi, High spread, takes place here. We will discuss High spread in the following section.

[12] Verbs bear a tonal pattern L(H) in subjunctive or imperative. The rightmost high toneme is a floating high toneme.

The TBU being connected to an underlying low toneme and an underlying high toneme with association lines in a sequence may be pronounced with a surface rising tone in (18). However, a rising tone appears only in limited syntactic environments. A rising tone appears in subjunctive or imperative mood. The TBU being connected to an underlying low toneme and an underlying high toneme in a sequence with association lines is usually pronounced with a surface high tone in (19). The final TBU of *cogo* 'bone' is connected to an underlying low toneme and an underlying high toneme with association lines in a sequence, and is pronounced with a surface high tone[13].

(19) LH → h

| | | |
|---|---|---|
| | LLH | L L H |
| | | \| \| / |
| cogo | → | cogó 'bone' |

When a TBU connected to an underlying high toneme with an association line is preceded by a floating low toneme, it is pronounced with a downstep high tone in (20). The final TBU of *ɲimma* 'my face' is connected to an underlying high toneme, and is preceded by a floating low toneme[14]. The TBU is phonetically pronounced with a downstep high tone. The downstep high tone appears after another high tone.

(20) H(L)H → h ds

| | | |
|---|---|---|
| | H(L)H | H (L) H |
| | | \| \| |
| ɲím!má | → | ɲím!má 'my face' |

If a TBU connected to an underlying high toneme with an association line is preceded by a sequence of a floating low toneme, a floating high toneme and a floating low toneme, then it is pronounced with a double downstep high tone in (21). A double downstep high tone appears only after another high tone. The final TBU of *a=nɛn-ɛ* 'I saw him.' is connected to an underlying high toneme, and is preceded by a sequence of a floating low toneme, a floating high toneme and a floating low toneme[15]. The TBU is phonetically pronounced with a double

---

[13] The noun *cogo* 'bone' has a lexical tonal pattern LLH. The rightmost high toneme becomes a floating high toneme. Even a floating high tone must be assigned to a TBU according to the principle that all lexical tonemes are preserved through tonal process.

[14] The noun *ɲim* 'face' has a lexical tonal pattern HL. The final low toneme becomes a floating low toneme. The first person singular possessive pronominal suffix *–na* 'my' has a lexical tonal pattern H. The alveolar nasal consonant /n/ of the suffix is assimilated to the preceding consonant /m/ of the noun stem.

[15] The first person singular subject clitic *a=* bears a lexical tonal pattern LH. The perfect

downstep high tone.

(21) H(L)(H)(L)H → h dds

| | | |
|---|---|---|
| LH(L)(H)(L)H | L | H(L)(H)(L)H |
| | \| \| | / |
| a=nɛn-ɛ → | a=nɛ́ ! ! n-ɛ́ | 'I saw her/him.' |

Underlying tonemes are assigned to TBUs according to the general tonal principles. The general tonal principles are as follows: 1) Tonemes are assigned to TBUs from left to right. 2) Association lines do not cross each other. 3) High tonemes are preferable for being assigned to TBUs. The derivations from (14) to (21) follow the general tonal principles.

Now let me propose tentative underlying representations of a downstep high tone and a double downstep high tone as in (20) and (21) respectively. The proposal will be attested by morphophonological data in section 3.5.

### 3.3. High spread and 'Floating high assignment'

Acooli has a few language specific tone sandhi rules which have the effect of altering underlying tonal representations of phonological units in particular phonological environments[16]. The language specific tone sandhi rules are called High spread and 'Floating high assignment'. The tone sandhi occurs beyond boundaries of phonological units.

At first we discuss High spread, which is crosslinguistically a well known tonal phenomenon in tone languages. When a phonological unit bearing a high toneme in the rightmost position is followed by a phonological unit bearing a low toneme in the leftmost position, the high toneme in the rightmost position of the preceding phonological unit spreads over the boundary of phonological units to the following phonological unit. A simple formulation (22) shows that the rightmost high toneme of the preceding phonological unit is copied to the leftmost position of the following phonological unit, if the following phonological unit begins with a low toneme. To clarify the relation between tonemes and TBUs in High spread, we make use of conventions in autosegmental theories as in (23).

(22) High spread

•••H# #L••• → •••H# #HL•••

---

aspect is marked with a low toneme. Verb stems bear a high toneme in indicative. The transitive formative suffix bears a low toneme. The third person singular object suffix bears a high toneme in lexicon.

[16] I will discuss phonological units in section 3.4.

(23) (a) H L LHL H L L H L

lok pa okelo → lók pá okélo High spread

word of Okelo 'word of Okelo'

(b) L L LHL L L L H L

ɔt pa okelo → ɔt pa okélo

house of Okelo 'house of Okelo'

(c) H H

lok → lók 'word'

(d) L L

ɔt → ɔt 'house'

The rightmost high toneme of the preceding phonological unit is connected with association lines not only to the rightmost TBU of the preceding phonological unit, but also to the leftmost TBU of the following phonological unit according to High spread. In the example (23.a), when a phonological unit *lok* 'word' bearing a high toneme is followed by a phonological unit *pa* 'of' with a low toneme, the high toneme of *lok* 'word' is assigned not only to the TBU of it, but also to the TBU of *pa* 'of' in (23.a). The phonological unit *lok* 'word' has a lexical tonal pattern H, and is pronounced with a surface high tone in citation (23.c).

When a preceding phonological unit bears a low toneme in the rightmost position, High spread does not take place. In the example (23.b), since a phonological unit *ɔt* 'house' bears a low toneme in the rightmost position, the toneme is not copied to the leftmost position of the following phonological unit *pa* 'of'. The example (23.b) tells us that the phonological unit *ɔt* 'house' has a lexical tonal pattern L. In fact, when it is pronounced in citation, the phonological unit *ɔt* 'house' is pronounced with a low tone in (23.d).

Next, we discuss 'Floating high assignment'. When a phonological unit ending in a floating high toneme is followed by a phonological unit beginning with a low toneme, the floating high toneme is assigned to the leftmost TBU of the following phonological unit, not to the rightmost TBU of the preceding phonological unit. A simple formulation (24) shows that a

floating high toneme in rightmost position of a preceding phonological unit is assigned to a leftmost position of a following phonological unit beyond boundary. To clarify the relation between tonemes and TBUs in 'Floating high assignment', we make use of conventions of autosegmental theories in (25).

(24) 'Floating high assignment'

⋯(H) # # L⋯ → ⋯# # HL⋯

(25) (a) LL(H) L

cogo rac → cogo râc 'Floating high assignment'

bone bad 'bone is bad'

(b) LL(H)

cogo → cogó 'bone'

(c) L L L L



wic rac → wic rac

head bad 'head is bad.'

The noun *cogo* 'bone' bears a lexical tonal pattern LLH, provided that the rightmost high toneme is a floating high toneme[17]. The adjective *rac* 'bad' bears a lexical tonal pattern L. When the noun *cogo* 'bone' is followed by the adjective *rac* 'bad', the noun *cogo* 'bone' is pronounced with a low and a low tones in a sequence and the adjective *rac* 'bad' is pronounced with a falling tone in surface representation in (25.a). This is because the floating high toneme in the rightmost position of the noun *cogo* 'bone' is assigned to the TBU of the adjective *rac* 'bad', not to the rightmost TBU of the noun *cogo* 'bone'.

Since the noun *cogo* 'bone' has a lexical tonal pattern LLH, it is phonetically pronounced with a low tone and a high tone in citation. The rightmost TBU of the noun *cogo* 'bone' is connected to an underlying low toneme and an underlying high toneme, which is a floating high toneme, and is pronounced with a surface high tone in (25.b). When the adjective *rac* 'bad' is preceded by a phonological unit bearing a low toneme in the rightmost position, it is

[17] We will discuss the derivation of floating high tonemes in section 3.4.

pronounced with a surface low tone in (25.c). No tone sandhi occurs between the phonological units. The example (25.c) tells us that the adjective *rac* 'bad' has a lexical tonal pattern L.

The High spread and 'Floating high assignment' take place beyond boundaries of phonological units.

### 3.4. Floating tonemes and phonological units

Floating tonemes are mostly generated through tonal processes with application of tone sandhi rules. The example (26) shows how a floating toneme is generated through a process of tonal derivation.

(26) H LHL H (L) H L

| \ |

dog acɛl → dóg á!cɛ́l [18] High spread

mouth one 'one mouth'

The noun *dog* 'mouth' has a lexical tonal pattern H. The numeral *acɛl* 'one' bears a lexical tonal pattern LHL. The rightmost high toneme in the noun *dog* 'mouth' is assigned not only to the TBU of the noun, but also to the leftmost TBU of the numeral *acɛl* 'one' according to High spread. The leftmost TBU is pronounced with a surface high tone in the numeral *acɛl* 'one'.

The rightmost TBU of the numeral *acɛl* 'one' is pronounced with a downstep high tone in (26). When tonemes are assigned to TBUs from left to right within the phonological unit *acɛl* 'one' in compliance with the general tonal principles after the application of High spread rule, the third low toneme and the second high toneme from right end and the rightmost low toneme are left to be assigned to the rightmost TBU of the numeral *acɛl* 'one'. The second high toneme from right end is chosen to be assigned to the rightmost TBU of *acɛl* 'one' according to one of the general tonal principles that high tonemes are preferable for being assigned to TBUs. The third low toneme from right end is not assigned to any TBU, because the second high toneme from right end is already assigned to the TBU to which the low toneme is expected to be assigned. Consequently the third low toneme from right end becomes a floating low toneme. The rightmost TBU associated with a high toneme is pronounced with a downstep high tone because it is preceded by a floating low toneme.

Floating tonemes sometimes appear through processes of assigning tonemes to TBUs.

---

[18] The numeral *acɛl* 'one' is sometimes pronounced with a falling tone in the rightmost position (cf. acɛ̂l 'one').

(27) HHL H H H (L) H

| | /

dɑko na → dɑ́kó!ná

woman my 'my woman'

The noun *dako* 'woman' is specified to bear a tonal pattern HHL in lexicon. The first person singular possessive pronominal suffix *–na* 'my' bears a lexical tonal pattern H. The noun *dako* 'woman' and the first person singular possessive pronominal suffix *–na* 'my' constitute a phonological unit. The phonological unit has a lexical tonal pattern HHLH as a whole. The tonemes are assighned to TBUs in compliance with the general tonal principle that tonemes are assigned to TBUs from left to right. The fourth and third high tonemes from right end are assigned to the third and second TBUs from right end respectively. The second low toneme from right end and the rightmost high toneme are left to be assigned to the rightmost TBU. The rightmost high toneme is chosen to be assigned to the rightmost TBU in compliance with one of the general tonal principles that high tonemes are preferable for being assigned to TBUs. The second low toneme from right end loses a TBU to be assigned and becomes a floating low toneme. The rightmost TBU associated with a high toneme is pronounced with a downstep high tone because it is preceded by a floating low toneme in (27). The downstep high tone appears after another high tone.

Now we discuss a phonological unit. I propose the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. Phonological units include forms of any grammatical categories, for instance, nominal forms, verbal forms, adjectival forms, adverbial forms, prepositions, etc.

Nominal forms consisting of a noun and affixes like *dako-na* 'my woman' in (27) constitute a phonological unit. The phonological unit *dako-na* 'my woman' bears a lexical tonal pattern HHLH as a whole. According to the principle proposed above, all lexical tonemes, a high, a high, a low and a high tonemes, are preserved within the phonological unit *dako-na* 'my woman' during tonal derivation. In order that all the lexical tonemes can be preserved within the phonological unit, the rightmost high toneme must be assigned to the rightmost TBU of the phonological unit *dako-na* 'my woman'.

Nevertheless, the tonal derivation like (28.a) violates the principle that all tonemes are preserved within a phonological unit during tonal derivation. The rightmost high toneme of the phonological unit *dako-na* 'my woman' is assigned to the leftmost TBU of the following phonological unit *rac* 'bad' over the boundary.

If the second low toneme from right end in the nominal form *dako-na* 'my woman' is assigned to the rightmost TBU of it and if the rightmost high toneme of the nominal *dako-na*

'my woman' is assigned to the leftmost TBU of the following adjective *rac* 'bad', then the rightmost TBU of the preceding nominal form *dako-na* 'my woman' is pronounced with a low tone and the TBU of the following adjective *rac* 'bad' is pronounced with a falling tone because the rightmost TBU of the preceding nominal form *dako-na* 'my woman' is associated with an underlying low toneme and also because the TBU of the following adjective *rac* 'bad' is associated with an underlying high toneme and an underlying low toneme in a sequence. The surface representation is not well-formed.

The nominal form *dako-na* 'my woman' consisting of the noun *dako* 'woman' and the first person singular possessive pronominal suffix *–na* 'my' constitutes an independent phonological unit, and the adjective *rac* 'bad' also constitutes an independent phonological unit. The underlying tonemes which the phonological unit *dako-na* 'my woman' bears in lexicon are all preserved within the phonological unit. The underlying toneme which the phonological unit *rac* 'bad' has in lexicon is also preserved within the phonological unit. The phonological unit *dako-na* 'my woman' bears a lexical tonal pattern HHLH and the phonological unit *rac* 'bad' has a low toneme in lexicon. When the underlying tonemes HHLH are assigned to TBUs from left to right in the phonological unit *dako-na* 'my woman' and when the rightmost high toneme in the phonological unit is chosen to be assigned to the rightmost TBU in compliance with one of the general tonal principles that high tonemes are preferable for being assigned to TBUs, the rightmost TBU is pronounced with a downstep high tone because it is preceded by a floating low toneme in (28.b).

The phonological unit *rac* 'bad' has a lexical low tone. When it is pronounced in citation, the phonological unit is pronounced with a low tone. However, High spread takes place in (28.b). The preceding phonological unit *dako-na* 'my woman' bears a high toneme in the rightmost position. The following phonological unit *rac* 'bad' bears a low toneme in the leftmost position. Consequently High spread takes place in the boundary of the two phonological units. The rightmost high toneme of the preceding phonological unit *dako-na* 'my woman' is assigned not only to the rightmost TBU of it, but also to the TBU of the following phonological unit *rac* 'bad'. The TBU of the following phonological unit *rac* 'bad' is associated with a high toneme and a low toneme in a sequence and is pronounced with a surface falling tone in (28.b).

(28) (a) HHLH L H H L H L

| | | | /

dɑko-nɑ rac → *dákó-nɑ râc

woman-my bad 'my woman is bad.'

(b) HHLH L H H(L)H L

| | |\|

dɑko-nɑ rac → dɑ́kó-!nɑ́ râc High spread

woman-my bad 'my woman is bad.'

In (28.a) the rightmost high toneme in the preceding phonological unit *dako-na* 'my woman' is assigned to the TBU of the following phonological unit *rac* 'bad' over the boundary of the phonological units. The assignment of tonemes to TBUs in (28.a) follows the general tonal principle that tonemes are assigned to TBUs from left to right, but violates the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. This is the reason why the inappropriate surface representation is derived in (28.a). On the other hand, the tonal derivation (28.b) obeys the general tonal principles that tonemes are assigned to TBUs from left to right and that high tonemes are preferable for being assigned to TBUs, and moreover, it obeys the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. Even if it is followed by a phonological unit *rac* 'bad', the rightmost high toneme of the preceding phonological unit *dako-na* 'my woman' must be assigned to the rightmost TBU of it in order that all lexical tonemes can be preserved within the phonological unit. Since the rightmost high toneme of the phonological unit *dako-na* 'my woman' is assigned to the rightmost TBU, the second low toneme from right end loses a TBU to be assigned and becomes a floating low toneme. The rightmost TBU associated with a high toneme is pronounced with a downstep high tone after a floating low toneme. The idea of phonological unit explains why the nominal form *dako-na* 'my woman' is pronounced with a downstep high tone in the rightmost position even if it is followed by another phonological unit beginning with a low toneme.

In order to derive well-formed surface representations, lexical tonal patterns should be preserved within phonological units. All underlying tonemes which are specified for phonological units in lexicon must be assigned to TBUs within phonological units in compliance with the principle that all underlying tonemes are preserved within a phonological unit during tonal derivation. However, there is an exception to the principle.

The exception to the principle proposed here is 'Floating high assignment'. Floating high tonemes violate the principle. A floating high toneme of a preceding phonological unit is assigned to a TBU of a following phonological unit beyond the boundary of phonological units, if the following phonological unit begins with a low toneme. We already discussed the fact that floating high tonemes are assigned to TBUs beyond boundaries of phonological units, which we called 'Floating high assignment'. Now we discuss 'Floating high assignment' again from the viewpoint of a phonological unit.

(29) (a) LLH L L L (H) L

| | ∨

cogo rac → cogo râc 'High floating assignemnt'

bone bad 'bone is bad.'

(b) LLH L L H

| | /

cogo → cogó 'bone'

(c) LLH L L L H L

| |/ ∨

cogo rac → *cogó râc High spread

bone bad 'bone is bad'

The noun *cogo* 'bone' bears a tonal pattern LLH in lexicon. When the noun cogo 'bone' is followed by a phonological unit *rac* 'bad' beginning with a low toneme, the rightmost high toneme of the noun *cogo* 'bone' becomes a floating high toneme and is assigned to the leftmost TBU of the following phonological unit *rac* 'bad'. Consequently the noun *cogo* 'bone' is pronounced with a low and a low tones, and the adjective *rac* 'bad' is pronounced with a falling tone in (29.a). When the noun *cogo* 'bone' is not followed by any phonological unit, that is, when it is uttered in citation, all lexical tonemes are assigned to TBUs within it in compliance with the general tonal principles and the proposed principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. Tonemes are assigned to TBUs from left to right, and the rightmost TBU of the noun *cogo* 'bone' is connected to a low toneme and a high toneme in (29.b). The rightmost TBU associated with a low toneme and a high toneme is pronounced with a surface high tone as discussed in (19).

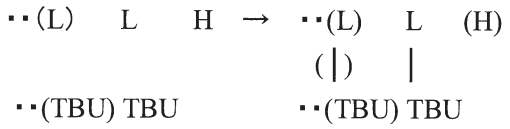
If floating high tonemes follow the principle that all lexical tonemes are preserved within a phonological unit, all the lexical tonemes LLH of the noun *cogo* 'bone' are assigned to two TBUs within the phonological unit. When tonemes are assigned to TBUs from left to right within the phonological unit, the rightmost TBU is associated with a low toneme and a high toneme in a sequence. The rightmost TBU must be pronounced with a high tone as in (29.c). The surface representation in (29.c) is not well-formed. Consequently floating high tonemes do not obey the principle that all tonemes are preserved within a phonological unit during tonal derivation. Only floating high tonemes can be assigned to TBUs of the following phonological units over boundaries of phonological units.

Floating high tonemes appear in limited environments. Floating tonemes appear in

phonological units which bear an extra toneme in lexicon more than the number of TBUs constituting phonological units. Moreover, only if the extra toneme is a high toneme and the other tonemes preceding the extra toneme are low tonemes, then the extra toneme becomes a floating high toneme. For instance, the phonological unit *cogo* 'bad' consists of two TBUs and bears a lexical tonal pattern LLH. The extra high tone is preceded by low tonemes. The phonological unit *cogo* 'bad' fits the above-mentioned environments where floating high tonemes appear.

The derivation of floating high tonemes is formalized as follows:

(30) Floating high toneme derivation




If a high toneme loses a TBU to be assigned after tonemes are assigned to TBUs from left to right, and if it is preceded by only low tonemes, then the extra high toneme becomes a floating high toneme in (30). Floating high tonemes are subjected to the 'Floating high assignment' rule, otherwise, floating high tonemes follow the general tonal principles and the proposed principle that all tonemes are preserved within a phonological unit during tonal derivation.

(31) (a) LLH L L(H)

cogo → cogó 'bone'

(b) LLH L L L(H) L

cogo rac → cogo râc 'Floating high assignment'

bone bad 'bone is bad.'

(c) LLH H LL H H

cogo-na → cogo-ná [19]

bone-my 'my bone'

[19] The vowel of the suffix is subjected to vowel harmony.

The phonological unit *cogo* 'bone' fits the environments where a floating high toneme occurs. The rightmost high toneme of the phonological unit is preceded by only low tonemes and the phonological unit has one extra toneme more than the number of TBUs. Consequently, after other tonemes are assigned to TBUs, the rightmost high toneme loses a TBU to be assigned and becomes a floating high toneme.

The floating high toneme is assigned to the rightmost TBU when the phonological unit is uttered in citation, because all tonemes are preserved within a phonological unit during tonal derivation. The rightmost TBU which is associated with a low toneme and a floating high toneme is pronounced with a surface high tone in (31.a).

The floating high toneme is subjected to 'Floating high assignment' rule. The floating high toneme is assigned to the leftmost TBU of the following phonological unit, when followed by another phonological unit beginning with a low toneme in (31.b).

The nominal form *cogo-na* 'my woman' constitutes a phonological unit as a whole, and it does not satisfy the environments where floating high tonemes appear. The two high tonemes from right end must be assigned to TBUs in compliance with the general tonal principles and the proposed principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. When tonemes are assigned to TBUs from left to right, the second high toneme from right end is assigned to the rightmost TBU together with the rightmost high toneme in (31.c).

According to the 'Floating high toneme derivation', if it bears a lexical tonal pattern LH, a phonological unit consisting of one TBU has a floating high toneme in the rightmost position. If it bears a lexical tonal pattern LLH, a phonological unit consisting of two TBUs has a floating high toneme in the rightmost position. If it bears a lexical tonal pattern LLLH, a phonological unit consisting of three TBUs has a floating high toneme in the rightmost position in (32).

(32)

| Number of TBUs | Tonal pattern | Phonological unit |
|---|---|---|
| 1 syllable | LH | an 'I' |
| 2 syllables | LLH | cogo 'bone' |
| 3 syllables | LLLH | ɔnɛka 'She or he killed me.' |

(33) (a) LH LHHL H L(H) (L) HH (L) H

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| an | a=tedo cam | → | an | á=!tédó | !cám | 'Floating high assignment' |
| I | 1SG=IMP:cook-TR food | | 'I cook food.' | | | |

(b) LH L (H)
| /
an → án 'I'

The first person singular independent pronoun *an* 'I' consists of one TBU and bears a lexical tonal pattern LH. The independent pronoun *an* 'I' satisfies the environments where floating high tonemes appear. When tonemes are assigned to TBUs from left to right, the rightmost high toneme loses a TBU to be assigned and becomes a floating high toneme. The floating high toneme is subjected to 'Floating high assignment' rule in (33.a). When the independent pronoun *an* 'I' is uttered in citation, tonemes are assigned from left to right in compliance with the general tonal principles. The rightmost TBU is associated with a low toneme and a floating high toneme and is pronounced with a high tone in (33.b).

(34) (a) LLH L L L (H) L
| | \ |
cogo rac → cogo râc 'Floating high assignment'
bone bad 'bone is bad.'

(b) LLH L L (H)
| | /
cogo → cogó 'bone'

The noun *cogo* 'bone' satisfies the environments where floating high tonemes occur. The tonal processes are already discussed above in (31).

(35) (a) LLLH LH L L L (H) (L) H
| | | \ |
ɔ=nɛk-a lɑwor → ɔ=nɛk-a lá!wór 'Floating high assignment'
3SG=PERF:kill-1SG yesterday 'She or he killed me yesterday.'

(b) LLLH L L L (H)
| | | /
ɔ=nɛk-a → ɔ=nɛk-á
3SG=PERF:kill-1SG 'She or he killed me.'

The verbal complex *ɔ=nɛk-a* 'she or he killed me' satisfies the environments where floating

high tonemes appear. The verbal complex *ɔ=nɛk-a* 'she or he killed me' consists of three TBUs and bears a lexical tonal pattern LLLH. After tonemes are assigned to TBUs from left to right the rightmost high toneme loses a TBU to be assigned and becomes a floating high toneme. The floating high toneme is assigned to the leftmost TBU of the following phonological unit *lawor* 'yesterday' according to 'Floating high assignment' in (35.a). When the verbal complex is uttered in citation, the rightmost floating high toneme is assigned to the rightmost TBU. The rightmost TBU associated with a low toneme and a floating high toneme is pronounced with a high tone in (35.b).

The principle that all lexical tonemes are preserved within a phonological unit during tonal process explains also the phonological environments where a falling tone appears. A Falling tone mostly appears when a monosyllabic phonological unit bearing an underlying low toneme is preceded by a phonological unit which bears a high toneme or a floating high toneme in the rightmost position. Namely a falling tone mostly appears in a monosyllabic phonological unit when its phonological representation is altered by the effect of High spread or 'Floating high assignment'. The example (36) shows that a falling tone appears in High spread.

(36) H L H L

| \ |

dog rac → dóg râc High spread

mouth bad 'mouth is bad.'

The adjective *rac* 'bad' is a monosyllabic phonological unit bearing a low toneme in lexicon. When the adjective *rac* 'bad' is preceded by the noun *dog* 'mouth' bearing a high toneme in the rightmost position, the rightmost high toneme is assigned not only to the rightmost TBU of the preceding phonological unit *dog* 'mouth', but also to the TBU of the following phonological unit *rac* 'bad'. A high toneme and a low toneme are assigned to the TBU of the phonological unit *rac* 'bad', because all the lexical tonemes are preserved within the phonological unit. Consequently the TBU of the phonological unit *rac* 'bad' is pronounced with a falling tone in (36).

(37) LLH L L L (H) L

| | ∨

cogo rac → cogo râc 'Floating high assignment'.

bone bad 'bone is bad.'

The adjective *rac* 'bad' is a monosyllabic phonological unit bearing a low toneme in lexicon. When the adjective *rac* 'bad' is preceded by the noun *cogo* 'bone' bearing a floating high toneme in the rightmost position, the rightmost floating high toneme of the preceding phonological unit *cogo* 'bone' is assigned to the TBU of the following phonological unit *rac* 'bad'. A floating high toneme and a low toneme are assigned to the TBU of the phonological unit *rac* 'bad', because all the lexical tonemes are preserved within the phonological unit. Consequently the TBU of the phonological unit *rac* 'bad' is pronounced with a falling tone in (37).

The principle that all lexical tonemes are preserved within a phonological unit during tonal process guarantees the stability of lexical meanings of phonological units. Lexical meanings are unstable if lexical tonemes are not preserved within phonological units during tonal process. For instance, if the adjective *rac* 'bad' is pronounced with a high tone in surface representation in (36) and (37) for the reason that a high toneme is assigned to the TBU according to High spread or 'Floating high assignment', the lexical meaning of the adjective *rac* 'bad' is unstable. If the adjective *rac* 'bad' is pronounced with a falling tone after High spread rule or 'Floating high assignment' rule is applied in (36) and (37), the lexical meaning of the adjective *rac* 'bad' is stable. If the adjective *rac* 'bad' is pronounced with a falling tone in surface representation, it is transparent that the adjective *rac* 'bad' bears primarily a lexical tonal pattern L. Alteration of tone endangers the stability of lexical meanings especially in monosyllabic phonological units as in (36) and (37). In multisyllabic phonological units lexical tonal patterns are transparent even if High spread or 'Floating high assignment' takes place. In spite of the fact that most TBUs associated with a high toneme and a low toneme are pronounced with a high tone, TBUs in only monosyllabic phonological units are pronounced with a falling tone when they are associated with a high toneme and a low toneme.

Now we can summarize the tonal system in Acooli as follows:

a) General tonal principles (1. Tonemes are assigned to TBUs from left to right. 2. Association lines do not cross each other. 3. High tonemes are preferable for being assigned to TBUs.)
b) Language specific tone sandhi rules (High spread and 'Floating high assignment').
c) Principle that all lexical tonemes but a floating high toneme are preserved within a phonological unit during tonal process.

### 3.5. Downstep and double downstep

We have already seen some examples of downstep. Let me add some examples of downstep in verbal morphology. Though tense is not marked morphologically in verbal complexes, aspect is marked by a suprasegmental morpheme in Acooli.

(38) LHHL H L H H (L) H

| | | |

a=ted-o cam → a=téd-ó !cám

1SG=IMP:cook-TR food 'I cook food.'

Because the TBU of the following phonological unit *cam* 'food' bearing a high toneme is pronounced with a downstep high tone, the verbal complex *a=ted-o* 'I cook' in imperfect aspect must bear an underlying low toneme in the rightmost position. Moreover, the verbal complex *a=ted-o* 'I cook' must bear more than three tonemes before the rightmost low toneme in order that the rightmost low toneme can be a floating low toneme. A low toneme, a high toneme and a high toneme before the rightmost low toneme are minimum and enough to derive a sequence of a low tone, a high tone and a high tone in surface representation.

(39) LHLHL H L H (L) H (L) H

| | / |

a=ted-o cam → a=té!d-ó !cám

1SG=PERF:cook-TR food 'I cooked food.'

Because the TBU of the following phonological unit *cam* 'food' bearing a high toneme is pronounced with a downstep high tone, the verbal complex a=ted-o 'I cooked' in perfect aspect must bear an underlying low toneme in the rightmost position. Moreover, the verbal complex a=ted-o 'I cooked' must bear more than three tonemes before the rightmost low toneme in order that the rightmost low toneme can be a floating low toneme.

Because the rightmost TBU of the verbal complex a=ted-o 'I cooked' in perfect aspect is pronounced with a downstep high tone, the verbal complex must have a high toneme in the second position from right end and a floating low toneme in the third position from right end. A low toneme, a high toneme, a floating low toneme and a high toneme before the rightmost low toneme are minimum and enough to derive a sequence of a low tone, a high tone and a downstep high tone in surface representation.

The verbal complex *a=ted-o* 'I cooked' in perfect aspect has one more low toneme in the third position from left end than the verbal complex *a=ted-o* 'I cook' in imperfect aspect. Based on this fact we can conclude that perfect aspect is marked by the third low toneme from left end in the verbal complex *a=ted-o* 'I cooked' in perfect aspect. The low toneme and high toneme from left end are common between the verbal complex *a=ted-o* 'I cook' in imperfect aspect and the verbal complex *a=ted-o* 'I cooked' in perfect aspect. They are assigned to the

first person singular subject clitic *a=* as its lexical tonal pattern[20]. The second high toneme from right end is common between the verbal complex *a=ted-o* 'I cook' in imperfect aspect and the verbal complex *a=ted-o* 'I cooked' in perfect aspect. It is assigned to the verb stem *ted-* 'cook' as its lexical tone. The rightmost low toneme is common between the verbal complex *a=ted-o* 'I cook' in imperfect aspect and the verbal complex *a=ted-o* 'I cooked' in perfect aspect. It is assigned to the transitive formative suffix *-ɔ* as its lexical tone[21]. Now we can summarize the lexical tonal patterns in verbal morphology as follows.

The first person singular subject clitic bears a lexical tonal pattern LH. The imperfect aspect is marked with no toneme. Every simple verbal stem bears a lexical high toneme in indicative[22]. The transitive formative suffix *-ɔ* bears a low toneme in lexicon. Consequently the verbal complex in imperfect aspect *a=ted-o* 'I cook' bears LHHL as its lexical tonal pattern. When the lexical tonemes LHHL are assigned to TBUs from left to right in the verbal complex *a=ted-o* 'I cook', the rightmost low toneme loses a TBU to be assigned and becomes a floating low toneme. If a phonological unit beginning with a high toneme follows the verbal complex *a=ted-o* 'I cook', the high toneme is pronounced with a downstep high tone after the floating low toneme in the rightmost position of the verbal complex as in (38).

The first person singular subject clitic bears a lexical tonal pattern LH. The perfect aspect is marked with a suprasegmental morpheme, a low toneme. Every simple verbal stem bears a lexical high toneme in indicative. The transitive formative suffix *-ɔ* bears a low toneme in lexicon. Consequently the verbal complex in perfect aspect *a=ted-o* 'I cooked' bears a tonal pattern LHLHL as its lexical tonal pattern. When tonemes are assigned to TBUs from left to right, the third low toneme, the second high toneme from right end and the rightmost low toneme are left to be assigned to the rightmost TBU in the verbal complex *a=ted-o* 'I cooked'. The second high toneme from right end is chosen to be assigned to the rightmost TBU, because high tonemes are preferable for being assigned. When the second high toneme from right end is assigned to the rightmost TBU, the third low toneme from right end loses a TBU to be assigned and becomes a floating low toneme. The rightmost TBU associated with a high toneme is pronounced with a downstep high tone after a floating low toneme. The rightmost low toneme has no TBU to be assigned because the rightmost TBU is already associated with the second high toneme from right end. The rightmost low toneme becomes a floating low toneme. If a phonological unit beginning with a high toneme follows the verbal complex *a=ted-o* 'I cooked', the leftmost TBU of the following phonological unit is pronounced with a

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[20] The first person singular independent pronoun *an* 'I' bears a lexical tonal pattern LH. The subject clitic seems to originate from the independent pronoun.

[21] The suffix is subjected to vowel harmony.

[22] Simple verbal stems are those which are not affixed with any derivational suffix.

downstep high tone as in (39).

If the second high toneme from right end is assigned to the rightmost TBU, all lexical tonemes are preserved within a phonological unit *a=ted-o* 'I cooked' except for the rightmost floating low toneme. Floating low tonemes in rightmost position of phonological units are still interpreted as a member of lexical tonal patterns specified to phonological units. Assignment of the second high toneme from right end to the rightmost TBU obeys the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation.

Double downstep is attested in rare languages. Acooli has a double downstep high tone. A double downstep high tone appears in verbal complex of perfect aspect.

(40) LHLHLH L H(L)(H)(L)H

| | /

a=nek-e → a=né!!k-é [23] (vowel sandhi: ɔ + ɛ → ɛ)

1SG=PERF:kill-TR:3SG 'I killed her or him.'

Vowel sandhi takes place between the transitive formative suffix *-ɔ* and the third person singular object suffix *-ɛ*. Even if a vowel is deleted in vowel sandhi, the tone primarily associated with the deleted vowel is preserved as discussed before. Namely, any toneme is not lost in vowel sandhi from lexical tonal pattern which is primarily specified.

The first person singular subject clitic has a lexical tonal pattern LH. The perfect aspect is marked with a low toneme. Every simple verbal stem has a lexical high toneme in indicative. The transitive formative suffix *-ɔ*, which is lost segmentally in vowel sandhi, bears a low toneme in lexicon. The third person singular object suffix *-ɛ* bears a high toneme in lexicon. Consequently the verbal complex *a=nek-e* 'I killed her or him' has a tonal pattern LHLHLH as its lexical tonal pattern.

When tonemes are assigned to TBUs from left to right, the fourth low toneme, the third high toneme and the second low toneme from right end and the rightmost high toneme are left to be assigned to the rightmost TBU in the verbal complex *a=nek-e* 'I killed her or him'. According to one of the general tonal principle that high tonemes are preferable for being assigned to TBUs, the third high toneme from right end or the rightmost high toneme is chosen to be assigned to the rightmost TBU. Among the two high tonemes the rightmost high toneme is chosen to be assigned to the rightmost TBU in compliance with the principle that all lexical tonemes but floating high tonemes are preserved within a phonological unit during tonal

[23] A clitic is not subjected to vowel harmony. The third person singular object suffix *-ɛ* is subjected to vowel harmony.

derivation. Since the verbal complex *a=nek-e* 'I killed her or him' does not satisfy the environments where floating high tonemes appear, the rightmost high toneme does not become a floating high toneme.

The rightmost high toneme must be assigned to the rightmost TBU. If the third high toneme is chosen to be assigned to the rightmost TBU, the second low toneme from right end and the rightmost high toneme are assigned to TBUs of the following phonological unit over the boundary of phonological units. The tonal assignment violates the proposed principle that all lexical tonemes are preserved within a phonological unit during tonal derivation.

When the rightmost high toneme is assigned to the rightmost TBU, the fourth low toneme, the third high toneme and the second low toneme from right end become floating tonemes. The TBU associated with a high toneme is pronounced with a double downstep high tone after a sequence of a floating low toneme, a floating high toneme and a floating low toneme in (40). A double downstep high tone appears after another high tone.

A double downstep high tone sounds auditorily as low as a low tone. However, a double downstep high tone retains phonological characteristics of a high toneme, because a double downstep high tone originates from a high toneme that is lowered by the preceding floating tonemes. A double downstep high tone behaves phonologically as a high toneme. After a double downstep high tone, a TBU of the following phonological unit which primarily bears a low toneme is pronounced with a high tone as in (41). Namely a double downstep high tone causes High spread in the same manner as a high toneme.

(41) (a) LHLHLH LH L H(L)(H)(L)H (L)H

a=nek-e lawor → a=né!!k-é lá!wór High spread

1SG=PERF:kill-TR:3SG yesterday 'I killed her or him yesterday.'

(b) LH L H

lawor → lawór 'yesterday'

The rightmost TBU of the verbal complex *a=nek-e* 'I killed her or him' is pronounced with a double downstep high tone, and the following TBU is pronounced with a high tone. The high toneme associated with the rightmost TBU of the verbal complex *a=nek-e* 'I killed her or him' is copied to the leftmost TBU of the following phonological unit *lawor* 'yesterday' by High spread rule in (41.a). The adverb *lawo*r 'yesterday' bears a tonal pattern LH in lexicon, which

is pronounced with a low tone and a high tone in citation in (41.b).

The rightmost TBU of the verbal complex *a=nek-e* 'I killed her or him' in perfect aspect is pronounced with a double downstep high tone in (40) and (41.a), while the rightmost TBU of the verbal complex *a=nek-e* 'I kill her or him' in imperfect aspect is pronounced with a downstep high tone in (42).

(42) LHHLH L H(H)(L)H

| | /

a=nek-e → a=né!k-é [24] (vowel sandhi: ɔ + ɛ → ɛ)

1SG=IMP:kill-TR:3SG

The first person singular subject clitic *a=* bears a lexical tonal pattern LH. The imperfect aspect is marked without suprasegmental morpheme. Every simple verbal stem has a high toneme in lexicon. The transitive formative suffix *-ɔ*, which is deleted in vowel sandhi, bears a lexical low toneme. The third person singular object suffix *-ɛ* bears a lexical high toneme. Consequently the verbal complex *a=nek-e* 'I kill her or him' in imperfect aspect bears a tonal pattern LHHLH as its lexical tonal pattern. When tonemes are assigned to TBUs from left to right, the third high toneme, the second low toneme from righ end and the rightmost high toneme are left to be assigned to the rightmost TBU. The rightmost high toneme is chosen to be assigned to the rightmost TBU in compliance with the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. When the rightmost high toneme is assigned to the rightmost TBU, all lexical tonemes are included within the phonological unit *a=nek-e* 'I kill her or him'.

Tonemes are assigned to TBUs from left to right, and the rightmost high toneme is assigned to the rightmost TBU. The third high toneme and the second low toneme from right end in the verbal complex *a=nek-e* 'I kill her or him' lose a TBU to be assigned and become floating tonemes. The rightmost TBU associated with a high toneme is pronounced with a downstep high tone after a sequence of a floating high toneme and a floating low toneme in (42).

The distinction between perfect aspect and imperfect aspect is made only by tone. The rightmost TBU of the verbal complex *a=nek-e* 'I killed her or him' is pronounced with a double downstep high tone in perfect aspect, and the rightmost TBU of the verbal complex *a=nek-e* 'I kill her or him' is pronounced with a downstep high tone in imperfect aspect. Basen on this fact we can conclude that a downstep high tone and a double downstep high tone contrast distinctively in Acooli.

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[24] The object suffix is subjected to vowel harmony.

4. Syntactic Functions of tone

As we discussed in section 3.5, tone has a syntactic function to make distinction between imperfect aspect and perfect aspect in Acooli. Perfect aspect is marked with a suprasegmental morpheme, a low toneme in (43) and (45) in the position preceding tonemes of verbal stems. Imperfect aspect is marked without suprasegmental morpheme in (44) and (46).

(43) LHLHL H L H(L) H(L) H

a=ted-o cam → a=té!d-ó !cám

1SG=PERF:cook-TR food 'I cooked food.'

(44) LHHL H L H H(L) H

a=ted-o cam → a=téd-ó !cám

1SG=IMP:cook-TR food 'I cook food.'

(45) LHLHLH L H(L)(H)(L)H

a=nek-e → a=né!!k-é (vowel sandhi: ɔ + ɛ → ɛ)

1SG=PERF:kill-TR:3SG 'I killed her or him.'

(46) LHHLH L H(H)(L)H

a=nek-e → a=né!k-é (vowel sandhi: ɔ + ɛ → ɛ)

1SG=IMP:kill-TR:3SG 'I kill her or him.'

Lexical tonemes in underlying representations are assigned to TBUs in compliance with the general tonal principles and the proposed principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. Though the suprasegmental morpheme, a low toneme, is inserted before a lexical toneme of verbal stem in the underlying representation, it causes a downstep high tone and a double downstep high tone through the tonal process in the rightmost positon of the surface representations of (43) and (45) respectively.

Tone also has a syntactic function to make distinction between a direct speech and an indirect speech constructions.

(47) dákó ɔ=wac-ɔ ki lacɔ́ɔ ní á=!téd-ó Indirect speech
woman 3SG=PERF:say-TR to man that 1SG=IMP:cook-TR
'A woman said to a man that I cooked (habitually).'

(48) dákó ɔ=wac-ɔ ki lacɔ́ɔ ní a=téd-ó Direct speech
woman 3SG=PERF:say-TR to man that 1SG=IMP:cook-TR
'A woman said to a man, 'I cook'.'

The sentence (47) shows an indirect speech construction in which it is not the woman but the speaker who cooks. The sentence (48) is a direct speech construction in which it is the woman who cooks. There is no segmental distinction between an indirect speech and a direct speech construction. A direct speech construction is differentiated from an indirect speech one suprasegmentally. High spread does not take place between the complementizer *ni* 'that' and the following subordinate clause in a direct speech construction in (48), while High spread rule is applied between the complementizer *ni* 'that' and the following subordinate clause in an indirect speech construction in (47)[25].

The complementizer *ni* 'that' bears a high toneme in lexicon. The high toneme is assigned not noly to the TBU of the complementizer *ni* 'that', but also to the leftmost TBU of the following subordinate clause *a=ted-o* 'I cook', according to High spread. The leftmost TBU of the following subordinate clause is pronounced with a high tone in surface representation in indirect speech construction in (49).

The complementizer *ni* 'that' bears a high toneme in lexicon. The high toneme is assigned only to the TBU of the complementizer *ni* 'that' in (50). High spread is blocked by a boundary between the complementizer *ni* 'that' and the following subordinate clause *a=ted-o* 'I cook'. There is a suprasegmental boundary which blocks the application of High spread between the complementizer *ni* 'that' and the following subordinate clause. The suprasegmental boundary has a syntactic function to differentiate a direct speech construction from an indirect speech construction.

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[25] There is phonetically segmental distinction between an indirect speech construction and a direct construction. In rapid speech vowel sandhi takes place between the complementizer *ni* 'that' and the following subordinate clause in an indirect speech construction. However, vowel sandhi does not take place between the complementizer *ni* 'that' and the following subordinate clause in a direct speech construction.

1. Indirect speech construction: [ • • ná!tédó]
2. Direct speech construction: [ • • ní atédó]

(49) • • • H LHHL H (L)HH(L)

| \ | |

• • • ni a=ted-o → • • • ní á=!tédó High spread Indirect speech

• • • that 1SG=IMP:cook-TR '• • • that I cooked (habitually)'

(50) • • • H LHHL H L H H(L)

| | | |

• • • ni a=ted-o → • • • ní a=tédó No High spread Direct speech

• • • that 1SG=IMP:cook-TR '• • • •, 'I cook'

There are other syntactic functions of tone in Acooli. There is a suprasegmental boundary after a topicalized NP, as well as a suprasegmental boundary in original position from which a noun phrase is topicalized.

Topicalized noun phrases are located in sentence initial position. There is a suprasegmental boundary after a topicalized noun phrase, which blocks the application of tone sandhi rules.

(51) LH LHHL H L H (L) H H(L) H

| \ | | |

an a=ted-o cam → an á=!téd-ó !cám 'Floating high assignment'

I 1SG=IMP:cook-TR food 'I cook food.'

(52) H LHHL H L H H L

| | | |

cam, a=ted-o → cám, a=téd-ó

food 1SG=IMP:cook-TR 'Food, I cook.'

The noun phrase *cam* 'food' is topicalized and left-located in sentence initial position in (52). The noun *cam* 'food' bears a high toneme in lexicon. The high toneme of the noun *cam* 'food' is assigned only to the TBU of it. If High spread takes place between a topicalized NP and the following phonological unit, the high toneme of the topicalized NP *cam* 'food' must be assigned not only to the TBU of the topicalized NP *cam* 'food' but also to the leftmost TBU of the following phonological unit *a=ted-o* 'I cook' as in (53). However, the surface representation in (53) is not well-formed. The suprasegmental boundary after a topicalized NP blocks the application of tone sandhi rules.

There is no suprasegmental boundary after a subject NP. The subject *an* 'I' bears a tonal pattern LH and it satisfies the environments where floating high tonemes appear. The floating

high toneme is assigned to the leftmost TBU of the following phonological unit *a=ted-o* 'I cook' according to 'Floating high assignment' rule. The leftmost TBU of the following phonological unit is pronounced with a surface high tone in (51).

Based on this fact we can conclude that the suprasegmental boundary has a function to differentiate a topicalized NP from a subject NP.

(53) H LHHL H (L) H H L

cam, a=ted-o → *cám, á=!téd-ó

food, 1SG=IMP:cook-TR 'Food, I cook.'

The nominal phrase *lacɔɔ* 'man' is topicalized and left-located in sentence initial position in (54). There is a suprasegmental boundary in original position from which the nominal phrase is left-located. The suprasegmental boundary blocks tonal process. In spite of the fact that the TBU associated with a high toneme in the phonological unit *tin* 'now' is preceded by a floating low toneme, it is pronounced with a high tone, not a downstep high tone in (54). When it is preceded by a floating low toneme, a TBU associated with a high toneme must be pronounced with a downstep high tone as in (55). The suprasegmental boundary in original position from which a noun phrase is topicalized blocks the tonal process through which the high toneme is pronounced as a downstep high tone.

(54) LHL LHHL H L H L L H H(L) H

lacɔɔ, a=gɔy-ɔ tin → lacɔ́ɔ, a=gɔ́y-ɔ́ tín

man 1SG=IMP:beat-TR now 'A man, I beat now.'

(55) LHHL H L H H (L) H

a=cam-ɔ tin → a=cám-ɔ́ !tín

1SG=IMP:eat-TR now 'I eat now.'

(56) LHHL LHL H L H H(L) L H L H

a=gɔy-ɔ lacɔɔ tin → a=gɔ́y-ɔ́ lacɔ́ɔ tín

1SG=IMP:beat-TR man now 'I beat a man now.'

We can conclude that suprasegmental boundaries have functions to make distinction of syntactic structures in Acooli.

## 5. Concluding remarks

This is the first attempt to point out that Acooli has two kinds of downstep, a downstep and a double downstep high tones. Moreover, this paper discusses syntactic functions of tone in Acooli.

The data show that 'floating tone approach' is applicative to phonological representations of a downstep and a double downstep in Acooli. I also propose the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation.

## List of abbreviations

ATR: advanced tongue root
ds: downstep high tone
dds: double downstep high tone
f: falling tone
H: high toneme
h: high tone
(H): floating high toneme
IMP: imperfect aspect
L: low toneme
l: low tone
(L): floating low toneme
PERF: perfect aspect
r: rising tone
TBU: tone bearing unit
TR: transitive formative suffix
TRI: transitive infinitive suffix
1SG: first person singular
3SG: third person singular
#: boundary of phonological unit
-: affix morpheme boundary
=: clitic morpheme boundary

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# Grammatical categories of the noun in Chopi (southern Lwoo)

Anne Storch

## 1 Introduction

This paper explores different aspects of the noun morphology in Chopi, a largely undescribed language of Uganda. It focuses on the semantics of grammatical devices such as noun classifiers and derivational morphemes and their functions as means of encoding specific types of referents and their qualities.

Chopi is a Southern Lwoo language spoken in northwest Uganda. According to the 2002 census, there are about 20,000 ethnic Chopi, whereby not all of them may still be speakers of the Chopi language. The Chopi of Masindi immediately neighbour the Banyoro (Bantu E11), and most are bilingual in their mother tongue and in Runyoro. Due to intensive language contact with the Banyoro, many Chopi are now identified with this dominant group. The ongoing process of language shift and cultural change is enhanced by social marginalization and the low prestige which many Chopi experience. Furthermore, many Chopi villages suffered dramatically from the attacks of the Lord's Resistance during the last decade. As a consequence, many villagers associated themselves to Bunyoro in order to be less vulnerable to these attacks.

This tendency has not only resulted in increasing language shift, but also in a relatively new concept of Chopi as a language and community being distinct from that of Acholi. As the *Ethnologue* entry of "Acholi" still illustrates, Chopi is considered one of several Acholi dialects by many linguists, as well as by influential missionary bodies such as SIL (who are responsible for *Ethnologue*). The Ugandan language policy towards the country's Lwoo languages – "Luo" in the national terminology – supports the treatment of Acholi, Chopi, Adhola, Labwor, etc. as dialect variants of one single language. Even though specialists in Nilotic linguistics emphasize that this concept is rather problematic in terms of cultural and cognitive diversity (J. Alowo, pers. comm.) or demonstrate that there is considerable phonological and morphological variety in Southern Lwoo (Heusing 2004, Storch 2005), the politically stimulated concept of "Luo" as one single, large continuum continues to receive support for a number of pragmatic reasons.

The Chopi, however, increasingly consider their language and group identity as non-Acholi as this sets them apart from the North and its violent conflict which presents a lethal threat to them as a minority group. By emphasizing Chopi identity, the choice of becoming part of the Bunyoro area (though not the Banyoro polity and kingdom) is conceptualized and marked as a strategy that helps the Chopi to escape the identification with those who suffered most from the civil war and continuing threat.

Today, the Chopi who reside just north of Lake Albert, between Victoria and Albert Nile are mainly agriculturalists who farm millet, sorghum, maize, groundnuts, and a variety of vegetables. They keep some goats and chicken, but hardly cattle. Relatively many Chopi have migrated to Kampala in their search for better education possibilities or labor, while others have moved beyond Masindi in order to look for work in one of the tea plantations.

Up to now, no linguistic work on Chopi is available, apart from a very brief description of its noun morphology in Storch (2005). An appropriate description that covers the grammar and the lexicon of Chopi is one of the major tasks reserved for future researchers.

Chopi shares with its Southern Lwoo relatives most of the (so-called) basic vocabularies, which reaches up to 82 per cent of common retentions (Blount & Curley 1970). The differences in the phonology and morphosyntax, however, are obvious (Heusing 2004).

Similar to Adhola, Alur, Kumam, and Dholuo, Chopi has nine vowels, which fall into two sets, namely [+ ATR] vowels /i, e, a, o, u/ and [- ATR] vowels /ɪ, ɛ, ʊ, ɔ/. The consonant inventory of Chopi is an innovative one, which exhibits four fricatives, being rather unusual for most Northern Lwoo and other Western Nilotic languages. Like in Acholi, Lango and Kumam, the original dental consonants have merged with alveolar consonants. There are no nasal-stop clusters with the exception of loanwords from Bantu. The consonant inventory can be summarized as /p, t, c, k, ʔ, b, d, j, g, f, s, sh, x, m, n, ɲ, ŋ, r, l, w, y/. Note that the fricatives tend to appear in intervocalic position, e.g. *òfùk* 'tortoise', *àsham* 'left-side', *wɔ̂xɔ́* 'outside'. As far as the presently analysed data suggests, Chopi distinguishes three tones, namely high [á], mid [a], low [à].

Syntactically, Chopi is AVO/SV. The noun morphology is characterized by prefixed number-marking morphemes which are historically derivative morphemes. The language also exhibits remnants of prefixed classifiers. Verb inflection primarily operates by affixation, whereby the conjugated verb basically consists of a pronominal prefix, an affixed TAM-morpheme and in some forms an auxiliary.

## 2 Nominal number and classification

In terms of nominal number, Chopi has departed considerably from the prototypical number-marking system of Eastern Sudanic (Dimmendaal 2000). Many Lwoo languages organize their number-marking system as a tripartite system with marked singulatives and unmarked collectives, unmarked singulars and marked plurals, or marked singulars and plurals. Chopi does not any longer mark singulatives grammatically, but uses periphrastic constructions in order to express singulative concepts.

Moreover, Chopi has lost most of the number-sensitive morphemes that originally functioned as classifiers in Western Nilotic. The reduction of nominal categorization devices is a very common development in many Southern Lwoo languages, where this process sometimes results in a partial loss of nominal number, such as in Lango (Noonan 1992), or in the development of a new, prefix-based number-marking morphology, such as in Dholuo (Tucker 1994). Dimmendaal (2001) was able to demonstrate that the development of prefixed number-markers in Dholuo was enhanced by contact with Bantu and formally resembles Bantu noun class patterns with its prefixed paired genders.

The following sections present an overview of surviving nominal suffixes in Chopi and set out to explore the semantics and functions of its prefixes.

### 2.1 Suffixes

Nominal suffixes were originally nominal classifiers, and these retain their semantics and grammatical functions in a few sub-groups of Western Nilotic. Only some of the more recent studies which have dealt with the productive semantic and functional properties of nominal categorization formatives in Burun (Andersen 1998, 2001) and Shilluk (Gilley 1998, 2000) allow for a partial reconstruction of the original grammatical functions of the suffixes. Storch (2005), taking up these ideas, presents a comparative analysis of Western Nilotic noun classifiers, and also relates these to very similar noun categorization devices found in Southern Nilotic (Tucker & Bryan 1962, 1964, 1965, Kiessling 2001), as well as to areally distributed properties (Bryan 1959, 1968).

In accordance to the existing overview work, it can be stated that Western Nilotic languages employ various grammatical means for the linguistic categorisation of nouns, which, however, never involve any grammatical agreement marking. The nouns themselves may be marked for sex, animacy, shape, and culturally defined categories, but not the accompanying parts of speech, such as adjectives, verbs, or pronouns. According to Aikhenvald's (2000) definition,

the lack of concord morphemes in the categorisation devices are characteristic for classifiers, which in this respect stand in opposition to noun classes and genders with their often elaborate systems of concord. General typological differences between both categories, noun classes (or genders) and classifiers, have been defined by Dixon (1982, 1986).

### 2.1.1 Remnants of the original system

The forms presented in (1) denote singulars and plurals of animals, which typically occur in flocks, swarms or as uncountable masses. In Chopi, the singular forms of these nouns still look like singulatives in Northern Lwoo languages such as Luwo or Shilluk, which tend to express singled-out individuals of referents that otherwise occur as collectives. The grammatical function and meaning of the suffix *–ó,* which the following examples from Chopi exhibit, is largely lost in this language, as the suffix is not any longer used to mark singulatives of collective nouns. Here, the non-singular form of the respective nouns is a plural which is marked by an *–i* suffix.

| (1) | SG | PL | |
|---|---|---|---|
| | wìŋ-ó | wìŋ-ì | 'bird' |
| | bóŋ-ó | bóŋ-ì | 'locust' |
| | rɔ̂m-ɔ́ | rɔ̂m-ì | 'sheep' |
| | gwɛ́n-ɔ́ | gwén-í | 'chicken' |

A singular suffix-*ì* in turn occurs with a few nouns denoting mass items, inanimate objects and, though rarely, animals. Plural formation basically involves the suffixation of *–i*, with the exception of 'louse', where *–o* is used:

| (2) | SG | PL | |
|---|---|---|---|
| | ŋòg-ì | ò-ŋóg-ó | 'louse' |
| | jám-ì | jém-ì | 'thing' |

Furthermore, a singular-marking suffix *–a* is found, which however may derive occasionally from reanalysis of the stem-final vowel in Bantu loans (Storch 2005). This vowel is consequently replaced in the plural with the number-marking suffix *–e*.

(3)

| SG | PL | |
|---|---|---|
| àtúr-á | àtúr-è | 'flower, blossom' |

Apart from such examples, Chopi hardly has any morphologically marked plurals. There are a few examples – all denoting animals – with *–i* suffixes, such as those in example (1) above or in *lé*, pl.*lé-ì*'animal'. A plural suffix *–à* is found as well, as in *ʔìt*, pl. *ʔìt-à* 'ear'.

### 2.1.2 Innovations

Besides these forms, there are characteristic innovations. One innovation is the suffix *–jò* which originates from a derivational prefix *jo-* 'people (of)' which typically constructs agent nouns in most if not all Lwoo languages. The prefix has largely lost this function in Chopi and occurs only very rarely, for example in some respect names and ethnonyms (see example 13b below). Here, the morpheme has been reanalysed as a number-marking device and is used as a suffix, like the other plural morphemes of the language. The resulting forms may be translated as 'X of people'. As a plural marker of body part nouns, as in (4), the morpheme encodes a plural in the sense of 'voice of many individuals', but is not necessarily as a pluralizer of the noun 'voice' itself.

(4)

| SG | PL | |
|---|---|---|
| dwán | dwán-jò | 'voice' |

The reduction of noun classifiers on the one hand and the loss of number-marking devices on the other is a process that is shared with a large part of Southern Lwoo. The retention of original singulative suffixes, a variety of singular and plural-marking morphemes and the possibly recent grammaticalization of *jo* as a plural suffix, however, speak for an underlying pattern that is retained by Northern Lwoo languages such as Luwo and Shilluk. Chopi seems to have rather conservatively retained some of these archaic forms in a linguistic environment that exhibits different preferences in terms of organizing nominal number.

One consequence of this situation is that Chopi has well been able to innovate a plural marker *-jò* which encodes both number and a concept of possession ('people's voices'), but not a singulative-marking morpheme to substitute the old singulative suffix *–o*. Instead, the language has constructions as the following ones to encode singulative concepts:

| | | |
|---|---|---|
| (5a) | mɔɔ | 'oil' |
| | mɔɔòtɔɔn | 'poured oil' ("a drop of oil") |
| (5b) | kaado | 'salt' |
| | làtínkaado | 'child of salt' ("a crystal of salt") |
| (5c) | pii | 'water' |
| | piimàtídí | 'little water' ("a small quantity of water") |

Runyoro, the dominant contact language, has no grammatical device to construct singulatives. The presence of periphrastically constructed expressions of singulatives in Chopi may be a result of grammatical accommodation to the neighbouring Bantu language.

### 2.2 Prefixes and derivation

In his insightful contribution on contact phenomena in Dholuo, Dimmendaal (2001) emphasizes that paired prefixes in Dholuo have developed as both number-marking and nominal categorization devices in such a way that they form a pattern that formally and semantically resembles Bantu noun classes. While some of the prefixes in Dholuo are old derivational morphemes, Dimmendaal claims that the language has acquired or developed a much larger number of such markers than were originally present in Lwoo, and that this process is enhanced by contact to Bantu.

While Chopi is basically surrounded by the Bantu language Runyoro, such a development could be conceivable here as well. However, the system of nominal prefixes in Chopi has not been influenced much by its contact languages, at least with respect to the inclusion of non-Western Nilotic morphemes. This is due to the sociolinguistic situation of Chopi. While the Luo have cattle and Dholuo has been a prestige language for a long time (cf. Dimmendaal 2001), so that many Bantu-speaking groups have shifted to Dholuo, Chopi has not enjoyed much prestige in the area where it is spoken. Rather than shifting to Chopi, the neighbouring Bantu, i.e. Runyoro-speaking groups expect Chopi speakers to master Runyoro in interethnic communication. As a result of its low prestige and the importance of neighbouring languages, Chopi is presently being given up by many of its speakers who then claim to be ethnic Banyoro rather than a Lwoo people who have been deprived of their cattle. As a consequence, little

material from Runyoro has been borrowed by Chopi. The language is probably dying out more quickly than loanwords and foreign grammatical elements can be incorporated.

Consequently, the prefixes that are found in Chopi comprise of common Lwoian ones, and they construct derived nouns rather than function as a form of noun class prefix. Most prefixes are etymologically related to generic nouns, relational morphemes or sex-indicating prefixes. The following section presents an overview of deverbal nouns and strategies of denominal derivation.

### 2.2.1 Deverbal nouns

Simple verbal nouns, deverbal action nouns and abstract nouns are all constructed on the base of the root (examples 6a-c), which is a patterns that is also found in Northern Lwoo languages such as Luwo. Consider the following examples:

| (6a) | SOURCE VERB | | VERBAL NOUN | |
|---|---|---|---|---|
| | géédó | 'build' | géédó | 'building' |
| | maxoréc | 'fish' | maxoréc | 'fishing' |
| | sɔ̂mɔ̀ | 'read' | sɔ̂mɔ̀ | 'reading' |

| (6b) | SOURCE VERB | | ACTION NOUN | |
|---|---|---|---|---|
| | tic | 'work' | tic | 'job' |
| | dúààrò | 'hunt' | dúààrò | 'hunt, chase' |
| | ɲɔ̀mɔ̀ | 'marry' | ɲɔ̀mɔ̀ | 'marriage' |

| (6c) | SOURCE VERB | | ABSTRACT NOUN | |
|---|---|---|---|---|
| | boo | 'be long' | boo | 'length' |
| | cêk | 'be short' | cêk | 'shortness' |

There are, however, exceptions from this pattern, as abstract nouns which are derived from verbs and denote psychological activities and mental states are marked by either a prefix *à-* or a prefix *ò-*. Both prefixes are originally sex-sensitive prefixes which indicate female and male sex respectively. Compare the following examples:

(7)

| SOURCE VERB | | ABSTRACT NOUN | |
|---|---|---|---|
| támò | 'think' | à-támò | 'thought' |
| tíí | 'be old' | ò-tíú | 'old age' |

These forms strikingly resemble agent nouns, which are constructed with a prefix *à-* in the singular and with *lù-* in the plural. Examples are:

(8)

| SOURCE VERB | | AGENT NOUN | |
|---|---|---|---|
| méɛ́rɔ́ | 'be drunk' | à-méɛ́rɔ́, pl. lù-méɛ́rɔ́ | 'drunkard' |
| ŋɔ̂lɔ̀ | 'be lame' | à-ŋɔ̂lɔ̀, pl. lù-ŋɔ̂lɔ̀ | 'lame person' |
| talkɔ̀t | 'make rain' | à-talkɔ̀t, pl. lù-talkɔ̀t | 'wizard, rainmaker' |
| kwàtò | 'herd' | à-kwàt, pl. lù-kwàt | 'herdsman' |

Deverbal nouns that denote a person who has a profession exhibit a prefix *là-* in the singular, but otherwise resemble agent nouns. Examples are:

(9)

| SOURCE VERB | | PROFESSIONAL AGENT NOUN | |
|---|---|---|---|
| tédò | 'cook' | là-tédò, pl. lù-tédò | 'a cook' |
| can | 'be poor' | là-shan, pl. lù-shan | 'pauper, beggar' |
| kɔ̀ɲɔ̀ | 'help' | là-kɔ̀ɲ, pl. lù-kɔ̀ɲ | 'helper, assistant' |

Interestingly, instrumental nouns are constructed like professional agent nouns, with the exception that they don't construct plurals. Consider the following example:

(10)

| SOURCE VERB | | INSTRUMENTAL NOUN | |
|---|---|---|---|
| ʔúmò | 'cover' | là-ʔúm | 'cover of a pot/granary' |
| jôlò | 'cut, harvest' | là-jôlò | 'knife for harvesting' |

The only other category of prefix-marked deverbal nouns are locative nouns. They are constructed with a prefix *kà-*, which etymologically relates to *kàr* 'place', and as most derived nouns that denote inanimate referents do not construct plurals. Examples are:

(11)

| SOURCE VERB | | LOCATIVE NOUN | |
|---|---|---|---|
| cam | 'eat' | kà-sham | 'eating place, restaurant' |
| myél | 'dance' | kà-myél | 'dancing place' |
| tédò | 'cook' | kà-tédò | 'cooking place, kitchen' |

### 2.2.2 Denominal derivation

Denominal derived nouns mostly denote social phenomena and very often differentiate between feminine and masculine, thereby using different formatives than deverbal nouns. Most of the different semantically and morphologically defined categories of nouns are used in complex discursive ways, reflecting cultural praxis and social history of the speech community.

Personal names are always marked for sex and occur in a feminine and a masculine form. The basis of a proper name is often a noun that denotes referents which symbolize circumstances of birth or pregnancy, relationship and other phenomena surrounding the newborn child. These nouns are marked with a prefix *à-* (feminine) or *ò-* (masculine). Unlike the derivative prefixes discussed above, *à-* and *ò-* do not permit a straightforward identification of their grammaticalization sources or etymological origins. Reh (1996: 152) assumes that the masculine prefix, which is *o-* in Anywa, is likely to be derived from an irregular modified form of *wʌ́ʌdó* 'son'. This explanation is not supported by my data, where 'son' is referred to by a different lexeme (see below in the section on ethnonyms).

Note that proper names are not pluralized. Examples for derived proper names are:

(12)

| SOURCE NOUN | | FEM. | MASC. | |
|---|---|---|---|---|
| jɔɔk | 'spirit, god' | à-jɔɔk | ò-jɔɔk | 'born with six fingers/toes' |
| tɔ́ɔ̀ | 'death' | à-tɔ́ɔ̀ | ò-tɔ́ɔ̀ | 'born after death' |
| kec | 'hunger' | à-kec | ò-kec | 'born during famine' |
| lûm | 'grass' | à-lûm | ò-lûm | 'illegitimate child' |

Sex is also indicated for ethnonyms, which use the prefix *wôd-* 'son' in order to construct the masculine forms, and employ *ɲá-* 'daughter' for the feminine forms. The plural is constructed on the basis of the unmarked root. Members of a nation, e.g. 'Ugandans', or a community e.g. 'river dwellers', are commonly used in the plural as collectives and are constructed with *jò-* (13b).

| (13a) | MASC. | FEM. | PL. | |
|---|---|---|---|---|
| | wôd-mádí | ɲá-mádí | mádí | 'Madi' |
| | wôd-achólí | ɲá-rachólí | àchólí | 'Acholi' |
| | wôd-láàwò | ɲá-láàwò | làŋí | 'Lango' |
| | wôd-mùgáàndà | ɲá-mùgáàndà | bàgáàndà | 'Baganda' |
| | wôd-mùtésò | ɲá-mùtésò | tésò | 'Iteso' |
| | mù-ɲóórò | ɲá-mùɲóórò | ɲóórò | 'Banyoro' |

Note that the Bantu class 1 prefix in 'Nyoro man' is analyzed as a masculine prefix.

| (13b) | MASC. | FEM. | PL. | |
|---|---|---|---|---|
| | wôd-jò-nam | ɲá-jò-nam | jò-nam | 'river dwellers, Alur' |
| | wôd-jò-yugáàndà | ɲá-jò-yugáàndà | jò-yugáàndà | 'Ugandans' |

Interestingly, clan names, which may also be used as praise names, are not marked for sex. They tend to be marked with a feminine prefix (either *à-* or *ɲá-*), but are used as respect terms for men and women alike. They are most likely derived from the names of totemic animals or cultural heroes, but this can not always be reconstructed on the present basis of knowledge on the language. Examples are:

| (14) | | |
|---|---|---|
| | à-móòtì | |
| | à-dyéèrí | |
| | à-túòkì | < hyena? |
| | à-kíìkì | |
| | à-téɛ̀ɲì | |
| | à-bwɔ́ɔ̀yì | |

Other derived nouns include life-stock terms and toponyms. Life-stock terms are few and refer to the most common colours or physical shape of either cows or chicken. They are not marked for sex, which is a common property of life-stock terminology in other Western Nilotic languages, but retain only the masculine form, which is marked by the morpheme *mà-*. Plurals were not given, but may still be known by elder speakers. Examples are:

| (15) | TERM | LIFESTOCK COLOUR | SOURCE | |
|---|---|---|---|---|
| | mà-búrú | 'grey cattle/chicken' | búrú | 'ashes' |
| | mà-shól | 'black cattle/chicken' | cól | 'black' |
| | mà-tàà | 'white cattle/chicken' | tàà | 'be light in colour' |

Toponyms are denominal locatives that denote clan areas and villages and are constructed with *pà-* 'area of' (16a). The morpheme is also used in order to express ownership of a place or of alienable possessions (16b)[1]. Examples are:

| | | |
|---|---|---|
| (16a) | pà-lúò | 'Chopi area' |
| | pà-bít | 'a clan's area' |
| (16b) | kà-beedòpàchope | 'home of the Chopi' |
| | pàcupàmamá | 'mother's place' |
| | ʔɔ̀tpàrúot | 'house of the chief' |
| | dògpàrúot | 'cattle of the chief' |
| | wàpàrúot | 'shoe of the chief' |

In its derivational noun morphology, Chopi exhibits rather conservative patterns, which are based on the transformation of only five nouns into prefixes: 'son', 'daughter', 'traveller', 'place', and 'area'. The gender-marking prefixes *à-* and *ò-* have acquired more functions and the common prefix *jò-* may have been grammaticalised twice, as its two realisations – *là-*, pl. *lù-* and *jà-*, pl. *jò-* – suggest. Chopialso exhibits a Bantu prefix *mù-*, which is only found with loanwords and ethnonyms. Apart from these few innovative patterns, its prefix inventory remains rather limited and appears to resemble the systems in Anywa, Päri and Shilluk.

### 3 Concluding remarks

In its noun morphology, Chopi exhibits various retentions and innovations. Some of these are very characteristic for Southern Lwoo languages in general, for example the loss of number-marking suffixes on nouns which rank low in the animacy hierarchy. Number-neutral nouns denoting inanimate referents and plants are very common in Acholi, Lango, Alur, Adhola, and so on. However, Chopi also exhibits a fair number of nouns which exhibit singular-plural suffix

[1]Note that inalienable possession is expressed in constructions without *pà*, e.g. *wírúot* 'head of the chief'.

alternation, and most of the suffixes that are found here are identical with the number-sensitive suffixed noun classifiers of Northern Lwoo and other Western Nilotic languages (see Storch 2005 for a detailed analysis). But Chopi – unlike other Southern Lwoo languages – also compensates the loss of some of these morphemes with the innovation of new suffixes, such as *–jò*. The stimulation of such strategies, which aim at the preservation of a structure that has already been considerably "eroded" is not yet understood, moreover as the contact history, existing linguistic ideologies, language attitudes, and so on in Chopi are yet to be studied by linguists.

What is more obvious, in contrast, is that the number system itself, which bases on a tripartite strategy in Western Nilotic, is simplified and restructured. As mentioned above, tripartite number-marking languages typically have morphologically unmarked nouns that denote uncountable, collective and mass items, from which – e.g. by suffixing a classifier – a singulative form can be derived. Other nouns would exhibit morphologically unmarked singular nouns, from which morphologically marked plurals would be derived. A third pattern would be a replacement pattern, where both singulars and plurals are marked. In Chopi, the third pattern clearly dominates. All nouns which are marked by the original singulative suffix *–o* have developed marked plurals, and consequently collectives in Chopi could be morphologically marked.

The same trend – marked singulars and plurals – can be observed with prefixing nouns. One explanation for this rather atypical situation is language contact to Bantu languages such as Runyoro, which do not have singulatives as a grammatical category. The periphrastically constructed singulative expressions presented in examples (5) above would then be a result of linguistic accommodation towards Bantu.

If such a development has taken place, it would be conceivable that other contact-induced changes of the noun morphology have happened. Considering the development of paired nominal prefixes which closely resemble Bantu noun-classes in Dholuo, as Dimmendaal (2001) describes them, it should be conceivable that Chopi incipiently develops similar structures. Chopi speakers are stable bilinguals in Chopi and Runyoro, and Chopi exhibits a relatively large number of noun prefixes.

However, all prefixes on nouns exhibit very conservative functions and meanings. They are typically used as derivative morphemes which construct deverbal and denominal nouns. Sex-indicating prefixes also occur as lexicalized morphemes, e.g. on nouns that denote animals. This is also common in many other Lwoo languages, such as Anywa, Luwo, and so on. There is no indication of Bantu calques or the spread of Bantu morphological and/or classificatory

patterns into Chopi. Moreover, Bantu prefixes are reanalysed as masculine sex-indicating morphemes, thus totally deviating from their original meaning in Benue-Congo.

Why is this so? Obviously Chopi as a contact language with a slightly marginalized status, being spoken by a low-prestige minority group, exhibits various forms of morphological reduction. This does not lead, however, to the emergence of new cognitive patterns in noun categorization. Here, semantics and cognitive conceptualizations remain surprisingly stable and "typically Nilotic". This is observation supported by the occurrence of a relatively developed terminology for smells and tastes, which is a characteristic feature of many Western Nilotic languages, but absent in much of Bantu (Thanassoula forthcoming). Some examples for such ophresasthemes (smell words) in Chopi are:

| | | |
|---|---|---|
| (17) | tíík | 'smell of he-goat' |
| | kúúr | 'smell of perfume or cooked meat' |
| | ŋwéé | 'smell of faeces or rotten things' |
| | míèt | 'smell of mango' |
| | lim | 'smell of something nice' |
| | kéc | 'smell or taste of something bitter' |
| | wàsh | 'smell of fermentation, sour taste (alcohol)' |
| | bot | 'neutral smell or taste (saliva, water)' |
| | òkwôk | 'smell or taste of rotten fish' |
| | òsòp | 'smell or taste of something rotten or spoilt (food)' |
| | ŋaàr | 'smell or taste of unready food' |

Likewise "typically Nilotic" patterns are found in the grammar of possession, where alienable and inalienable possession is distinguished, and where kinship as well as livestock terms are inalienable and often obligatorily marked as possessed (very much like e.g. Luwo, Storch forthcoming).

These first observations on the noun in Luwo suggest that – probably because contact scenarios never last long enough to produce more salient change – most of the cognitive patterns behind the grammatical categories in question persist, despite morphological reduction and loss of grammatical morphemes.

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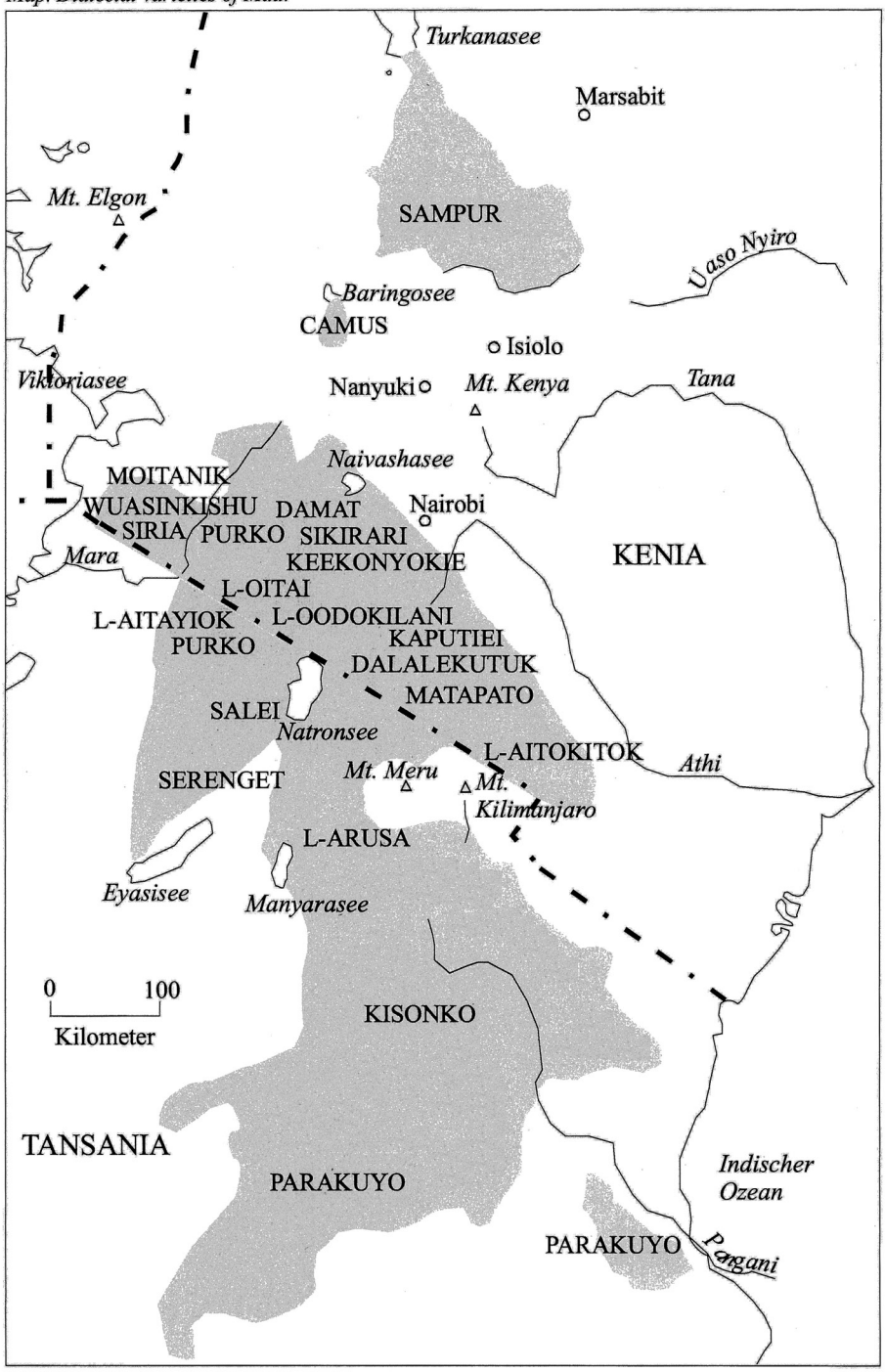
*Map. Dialectal varieties of Maa.*



# Some remarks on Swahili borrowings in Maa

Antje Meissner

Abstract

Maa belongs to the eastern branch of the Nilotic languages of the Nilo-Saharan phylum and is spoken in Kenya and Tanzania. It has about twenty dialectal varieties. The distribution of these varieties is shown on the map below. This paper[1] aims to show how nouns of the neighbouring Bantu language Swahili are transferred into Maa and its varieties.

## 1 Introduction

Maa varieties are divided into North (Sampur and Camus) and South (Maasai) dialect clusters, as shown below (cf. Vossen 1988). South Maa is subdivided into a Tanzania and a Kenya division. Four varieties (L-Aitayiok [ATK], Serenget [SER], Salei [SAL] and Moitanik [MOI]) remain to be classified.

*Table 1: Varieties of Maa*

| 1 | *North Maa* | | | 2 | *South Maa* | |
|---|---|---|---|---|---|---|
| 1.1 | Sampur | (SAM) | | 2.1 | Kenya South Maa | |
| 1.2 | Camus | (CAM) | | | L-Aitokitok | (AIT) |
| | | | | | Dalalekutuk | (DAL) |
| | | | | | Damat | (DAM) |
| | | | | | Kaputiei | (KAP) |
| | | | | | Keekonyokie | (KEE) |
| | | | | | Matapato | (MAT) |
| | | | | | L-Oitai | (OIT) |
| | | | | | L-Oodokilani | (OOD) |
| | | | | | Purko | (PUR) |
| | | | | | Sikirari | (SIK) |
| | | | | | Siria | (SIR) |
| | | | | | Wuasinkishu | (WUA) |

[1] The data used in this paper is taken from wordlists collected and tape-recorded by Rainer Vossen in Kenya and Tanzania in the late 1970s. At that time just a small amount of the data was transcribed. From 1998 to 2003 more of this data was transcribed with the help of the German Research Society (Deutsche Forschungsgemeinschaft).

| | | | | | |
|---|---|---|---|---|---|
| | | | 2.2 | Tanzania South Maa | |
| | | | 2.2.1 | L-Arusa | (ARU) |
| | | | | Kisonko | (KIS) |
| | | | 2.2.2 | Parakuyo | (PAR) |

Maa has a nominal gender system. Various affixes, sometimes also tone, mark plural and singular. Maa exhibits vowel harmony, which is based on the feature [± ATR].

*Table 2: Gender and number distinction*

| | m. | | | f. | |
|---|---|---|---|---|---|
| | sg. | pl. | | sg. | pl. |
| (1) 'crocodile' | kìnɔ́s, ɔ̀l- | kìnɔ̀s-ín, ìl- | (4) 'grass-hopper' | tàrgɛ́ɛ́t-ì, èn- | tàrgɛ́ɛ́t, ìn- |
| (2) 'dung beetle' | mɔ̀ìlɑ́ɑ̀, ɔ̀l- | mɔ̀ìlɑ́ɑ̀-shí, ìl- | (5) 'hare' | kìtɔ̀cɔ́, èŋ- | kìtɔ̀cɔ̂-n, ìŋ- |
| (3) 'porcupine' | sùrúsùrì, ò | súrùsùrì-n, ì- | (6) 'rat' | dɛ́rɔ́ì-nì, èn- | dɛ̂rɔ́, ìn- |

Number and gender are expressed by /ol / (sg.) and by /il / (pl.) for the masculine and by /en / (sg.) and /in / (pl.) for feminine gender. In northern dialects like SAM and CAM, the prefix vowel, which indicates number, is lost: In PUR we have in Example (6) èn-dɛ̂rɔ́-nì, whereas in SAM we have n-dɛ̂rɔ́-nì 'rat'. Because of phonetic rules, /l / and /n / indicating gender can be assimilated or get lost in all varieties; cf. Example (3): ò-sùrúsùrì / ì-súrùsùrì-n 'porcupine'. Here, /l / is deleted before /s /.

Different singular and plural suffixes can also be identified in Table 2. Two singulative suffixes – /-i / and /-ni / – are demonstrated in èn-tàrgɛ́ɛ́t-ì in Example (4) and èn-dɛ̂rɔ́-nì in Example (6), while some examples of plural suffixes like /-in / and /-shi / are shown in ìl-kìnòs-ín and ìl-mɔ̀ìlɑ́ɑ̀-shí in Examples (1) and (2) (cf. Meissner 2011).

Maa has three distinct tones (cf. Rasmussen 2002: 20, Tucker & Mpaayei 1955: 167):

| | | |
|---|---|---|
| H: | high | á |
| L: | low | à |
| F: | falling (composite high-low) | â |

In addition, Maa exhibits stress which has no distinctive function and will not be marked in the present paper (see also Heine 1981: 103). Tonal distinctions are particularly relevant as a mean

of distinguishing noun case and sometimes number. Tone can have a lexical function as well, e.g. l-ácê 'calf' (absolutive) and l-ácé 'lice' (König 1993: 8).

## 2 Which nouns are borrowed?

Borrowings in Maa exist particularly where the influence of the Swahili neighbours was high in the last centuries. In Table 3 borrowings are listed according to semantic fields. As a result of trade with neighbouring groups nouns like 'money' and 'market' were transferred into Maasai. The diet of the Maa people also changed. In former times they lived on the milk, blood and meat of their cattle (Beckwith & Saitoti 1981: 29). Owing to trade, new foods like 'beans', 'sorghum', 'potatoes', 'tomatoes' and fruit like 'oranges' and 'mangos' were introduced.

Additionally, a lot changed regarding domestic life. Basically Maa people have huts made of twigs and cow dung (Beckwith & Saitoti 1981: 192). But new buildings like schools are built in a different way and therefore words like 'window', 'lamp' and 'door' were borrowed. In domestic life, some nouns for house-wares like 'bottle', 'pot' and 'basket' were transferred into Maa.

Borrowings regarding to stock farming are seldom found. Only names for animals which have no relation to cattle breeding, like 'chicken', 'cock', 'cat' and 'pig', are borrowed.

Maa people wear often capes or aprons made of materials like leather which exist in their natural environment, but in the last decades they have worn more and more "modern" clothing (Meissner 1995: 99, 114, 116-117). This is also reflected by borrowings like 'shirt', 'trousers', 'hat', 'shorts' and 'stockings'.

Borrowings exist in all dialectal varieties of Maa. Interestingly in my data KIS has the highest amount of borrowings, namely 35, whereas the lowest amount is to be found in PAR, namely only 1. This is all the more noteworthy as both varieties belong to Tanzania South Maa. The PAR lives on the outermost border of the Maa area and so they have a special position within the Maa people. Not only the small number of borrowings but also the existence of many lexemes which only exist in PAR and in no other variety show this special position.

*Table 3: Borrowings in Maa according to semantic fields*

| | | |
|---|---|---|
| 1 | What refers to the body | No borrowings in my data. |
| 2 | Social structure | 'tribe', 'judge', 'law', 'lie', 'truth' |
| 3 | Domestic life | 'broom', 'machete', 'window', 'bottle', 'garden', 'pot', 'basket', 'lamp', 'door' |
| 4 | Profession | |
| 4.1 | Agriculture | 'field', 'hoe', 'load', 'barn' |
| 4.2 | Stock farming | 'chicken, fowl', 'cock', 'cat', 'pig' |
| 4.3 | Hunting, fishing and food-gathering | 'trap' |
| 5 | Undomesticated animals | |
| 5.1 | Antelopes | No borrowings in my data |
| 5.2 | Insects and parasites | 'tick' |
| 5.3 | Wild animals, rodents and others | 'monkey', 'fish', 'camel', 'horse' |
| 5.4 | Birds | 'parrot' |
| 5.5 | Parts of body | No borrowings in my data. |
| 6 | Handicrafts and general activities | 'work', 'iron', 'money', 'market' |
| 7 | Nourishment and reception of food | 'beans', 'porridge', 'egg', 'vegetables', 'sorghum', 'potato', 'pumpkin', 'mango', 'cassava', 'flour', 'orange', 'pepper', 'rice', 'salt', 'tomato', 'sugarcane' |
| 8 | Clothing and decoration | 'arm clasp, arm-spiral', 'finger-ring', 'shirt', 'trousers', 'hat', 'shorts', 'stockings' |
| 9 | Nature | |
| 9.1 | Natural phenomena | 'darkness' |
| 9.2 | Surface | 'street' |
| 9.3 | Plants | No borrowings in my data. |

### 3 Morphological structure of borrowings

In contrast to other nouns, borrowings do not show a great heterogeneity regarding their suffixes. Singulative suffixes always have the form /–(n)i /, whereas plural suffixes display mostly /–ni /. The lexeme for 'window' in Example (8) has the typical plural suffix / -ni / and 'judge' in Example (7) exhibits a singular suffix / –i / and a plural suffix / –ni /. The number in parentheses show how many varieties have the borrowing as well, for example in Example (8) "SIR (+2)" means that SIR and two other varieties exhibit the same borrowing for 'window'.

Borrowings adopt suffixes from Maa. Since also Swahili has affixes, the question is if these affixes get lost when they are transferred into Maa. The Swahili noun class system consists of 16 different classes which are characterized by semantic differences. The following Table 5 shows the classes three to ten, because only these classes are important for the following discussion.

*Table 4: Gender and number distinction*

| | sg. | pl. | variety | Swahili |
|---|---|---|---|---|
| (7) 'judge' | àìkìmó-ì, òl- | àìkìmò-nî, l- | ARU (+1) | hakimu (ma-) 'judge' (Höftmann 1989: 75) |
| (8) 'window' | dìríshà, òl- | dìrìshà-ní, ìl- | SIR (+2) | dirisha (ma-) 'window' (Legère 1990: 83) |
| | dìrícà | | CAM | |

The nouns of class 3/4 have a singular prefix / m- / and a plural prefix / mi- /. Amongst others this class includes denotations for trees and objects made of wood (Brauner & Herms 1986: 71). Class 5/6 includes different semantic entities and has not only an augmentative function, but also comprises parts of body, fruits, liquids, borrowings and others. The nouns of this class show mostly a singular prefix / ji- / and generally a plural prefix / ma- / (Drolc 1999: 192, Brauner & Herms 1986: 101).

The nouns of class 7/8 have a singular prefix / ki- / and a plural suffix / vi- /. This class consists of nouns for tools, languages and small items (Brauner & Herms 1986: 85).

Class 9/10 comprises most borrowings and shows the same prefix / n- / in singular and plural.

*Table 5: Examples of the Swahili noun class system (according to Drolc 1999: 45-56)*

| | sg. | | pl. | |
|---|---|---|---|---|
| ... | | | | |
| class 3/4 | m-ti | 'tree' | mi-ti | 'trees' |
| class 5/6 | ji-tu | 'giant' | ma-ji-tu | 'giants' |
| class 7/8 | ki-tu | 'thing' | vi-tu | 'things' |
| class 9/10 | n-goma | 'drum' | n-goma | 'drums' |
| ... | | | | |

Drolc analyzed how Maa people (ARU and KIS) speak Swahili and discovered that they often used the plural prefix / ma- / of class 5/6. Even Swahili lexemes which belong to other classes than class 5/6 were used frequently with / ma- / as a plural prefix. According to Drolc, this could be due to the heterogeneity of class 5/6 which shows different semantic entities (1999: 192).

Remarkably, as shown in Table 6, Maa speakers in my data also use the prefix / ma- / frequently with borrowings. In such cases this prefix does not distinguish number anymore, but

is often conserved in singular and plural. For the lexeme "pot (made of metal)" ARU for example displays màbátì in singular and mábátí-nî in plural in Example (12). ÀRU maintains in both forms the prefix / ma- / and the lexeme is based on the Swahili plural form mabati 'tin, zinc".

*Table 6: Borrowings showing the Swahili prefix / ma- /*

| | sg. | pl. | variety | Swahili |
|---|---|---|---|---|
| (9) 'egg' | máàì, òl- | máàì-ní | DAL | yai (ma-) 'egg' (Legère 1990: 65) |
| | màyáì, ò- | | SIK (+1) | |
| (10) 'orange' | màshúŋkwà-ì, òl- | màshúŋkwà, ìl- | DAL (+1) | chungwa (ma-) 'orange' (Legère 1990: 25) |
| | màshùŋkwó-ì, òl- | màshùŋkwó, ìl- | DAM | |
| | màshíŋkwó-ì, òl- | màshíŋkwɔ́-à, ìl- | MAT | |
| | màshúŋkw-òì, òl- | màshúŋkw-à, ìl- | KEE (+1) | |
| | màshùŋkw-óì | màshùŋkw-àní | OIT | |
| | màshúŋkwà, òl- | màshùŋkwà, ìl- | KAP (+1) | |
| (11) 'orange' | màtùndá-ì, òl- | màtúndà, ìl- | WUA | tunda (ma-) 'orange' (Legère 1990: 90) |
| | màtúndà, òl- | màtúndâ-n, ìl- | MOI | |
| | màtùndáì | | SAM (+1) | |
| (12) 'pot (made of metal)' | màbátì, è- | mábátí-nî | ARU | bati (ma-) ,tin, zinc' (Höftmann 1989: 26) |

An assimilation of the prefix / ma- / is shown in Table 7. A regressive assimilation is to be observed for 'load' in Example (14), in case of KIS and ATK / a / undergoes the change and assimilates to / i / of the word stem and in case of CAM / a / assimilates to / o /. The lexeme for 'field' in Example (13) exhibits a similar behavior.

*Table 7: Regressive assimilation of the prefix / ma- / in borrowings*

| | sg. | pl. | variety | Swahili |
|---|---|---|---|---|
| (13) 'field' | mʊ̀kʊ̀ntá, ɜ̀- | | WUA (+1) | konde (ma-) 'field' (Legère 1990: 82) |
| (14) 'load' | mɔ̀sɔ́kɔ̀, l- | mɔ̀sɔ̀kɔ̀-àní, l- | CAM | mzigo (ma-) 'load' (Höftmann 1989: 239) |
| | | mìsíkwànì, ì- | KIS | |
| | mìsíkʊ̀, ɔ̀l- | | ATK | |

Maa sometimes derivates lexemes not from the Swahili plural form like in Examples (13) and (14), but from the singular form. In Swahili the lexeme 'machete' in Example (18), for example, displays in singular panga and in plural mapanga. In Maa only the singular form is relevant.

Accordingly, Maa shows in singular páŋkà and in plural páŋkà or pàŋkà-í. More samples are listed in Table 8.

*Table 8: Swahili singular forms as a basis for borrowings*

| | sg. | pl. | variety | Swahili |
|---|---|---|---|---|
| (15) 'barn' | kɔ̀ndɜ́, ɔ̀l- | kɔ̀ndé-n, ìl- | MAT | konde (ma-) 'acre, cultivated field' (Höftmann 1989: 144) |
| (16) 'hoe, hoe made of iron' | cémpè, èn- | cèmpe-í, ìn- | KAP (+5) | jembe (ma-) 'hoe' (Höftmann 1989: 92) |
| | kémpè, ɔ̀l- | kémpé-n, ìl- | MAT | |
| | cɜ́mpɜ̀, ɔ̀l- | cémpè-nì, ìl- | KIS | |
| | cémpè, ɔ̀l- | | DAM (+9) | |
| (17) 'judge' | àìkìmó-ì, ɔ̀l- | àìkìmò-nî, l- | ARU (+1) | hakimu (ma-) 'judge' (Höftmann 1989: 75) |
| (18) 'machete' | páŋkà, ɔ̀l- | pàŋkà-í | KEE (+1) | panga (ma-) 'machete' (Höftmann 1989: 262) |
| | páŋkà, ɔ̀l- | páŋkà, ìl- | PUR | |
| | páŋkà | | SAM | |
| (19) 'tribe' | kàpílà, èŋ- | kàpílà-nî | KIS | kabila (ma-, –) 'tribe, people' (Höftmann 1989: 98) |
| | kápílá, èŋ- | kàpìlà-r-ítì, ìŋ- | KEE | |
| (20) 'window' | dìríshà, ɔ̀l- | dìrìshà-ní, ìl- | SIR (+2) | dirisha (ma-) 'window' (Legère 1990: 83) |
| | dìrícà | | CAM | |

Whereas the Swahili plural prefix / ma- / is often transferred into Maa, the Swahili plural prefix / vi- / is never borrowed. Maybe the reason is that the consonant / v / is not distinctive in Maa, so that the borrowings always preserve the Swahili singular prefix /ki- / of class 7 as in Table 9.

*Table 9: Borrowings with Swahili singular prefix /ki- /*

| | sg. | pl. | variety | Swahili |
|---|---|---|---|---|
| (21) 'barn' | kìtálà, èŋ- | | PAR | kitalu (vi-) 'fence, enclosure, wall, yard, bed' (Höftmann 1989: 135) |
| (22) 'basket' | kìkápù, èŋ- | kìkàpù-nî, ìŋ- | KEE (+3) | kikapu (vi-) 'basket' (Legère 1990: 131) |
| (23) 'field' | kìwáncà, èŋ- | kìwàncà-ní | MAT (+2) | kiwanja (vi-) 'location, estate, field' (Höftmann 1989: 140) |
| (24) 'tick' | kìròbótò, n- | | CAM | kiroboto (vi-) 'tick' (Höftmann 1989: 132) |

The plural prefix / mi- / of class 4 is seldom borrowed with the vowel / i /, but shows structures like / ma- / or / mu- / (Table 10). For example, the lexeme 'trap' in (28) exhibits the Swahili

plural form mitego, while Maa has a singular form like màtékò or mɔ̀tékò and in plural màtèkò-ní or mùtèkò-nî. In Example (25) 'door' KEE and PUR are based upon the Swahili plural form, whereas in SAL the consonant / m / of mlango 'door' is dropped.

*Table 10: Borrowings with an assimilated Swahili plural prefix / mi - /*

| | sg. | pl. | variety | Swahili |
|---|---|---|---|---|
| (25) 'door' | mùláŋgò, è- | mùlàŋgò-nî | KEE | mlango (mi-) 'door' (Legère 1990: 223) |
| | mìláŋgò, è- | mìláŋgò-tîn, ì- | PUR | |
| | láŋkò, ò- | | SAL | |
| (26) 'rice' | mùshélè, l- | mùshélè-n, l- | SIR | mchele (mi-) 'rice (shucked)' (Legère 1990: 179) |
| | mùshélè | mùshèlè-ní | DAL (+2) | |
| | mùshélè, òl- | mùshélè, ìl- | MOI | |
| | mùshélè, òl- | | DAM (+8) | |
| (27) 'sorghum' | mùtámà, òl- | | MAT | mtama (mi-) 'sorghum' (Höftmann 1989: 223) |
| (28) 'trap' | màtékò | màtèkò-ní | CAM | mtego (mi-) 'trap' (Legère 1990: 80) |
| | mɔ̀tékò, òl- | mùtèkò-nî, ìl- | SAL (+2) | |
| | mùtékò, òl- | | ATK | |

As shown in Example (29) the Swahili locative suffix / -ni / was transferred into different Maa varieties (Swahili: soko-ni 'on the market'). Except for CAM all the other varieties display / -ni / in the singular. SAM and another variety distinguish singular and plural only by a different tone pattern. DAL exhibits / -ni / only in the singular, whereas the plural form has no suffix. Another informant of DAL uses a plural suffix / -ni /, so that DAL – and additionally six other varieties – show a plural form sòkónì-nì.

*Table 11: Borrowings with the Swahii locative suffix / -ni /*

| | sg. | pl. | variety | Swahili |
|---|---|---|---|---|
| (29) 'market' | sòkó-nì | sòkó | DAL | soko (ma-) 'market' (Legère 1990: 145) -ni "locative suffix" (Höftmann 1989: 248) |
| | sòkónì | sòkónì-nì | DAL (+6) | |
| | sókò | sókò-nìnì | CAM | |
| | sòkónì | sókònì | SAM (+1) | |
| | sòkónì | | DAM (+5) | |

## 4 Nominal tone in borrowings

Usually no tonal structure can be predicted for Maa nouns. But there seems to be an exception with regard to some borrowings. Borrowings with original syllable structures CVCVCV, CVCVV and CCVCV are nearly always transferred into Maa adopting the stem structure

CVCVCV, having the tonal pattern LHL. This applies primarily to Maa singular borrowings, as shown in Table 12 below. The tone pattern of some plural forms is also similar to each other: LLLH or LLLF, but the tone pattern of the singular forms seem to be more predictable (Meissner 2007: 149-151).

*Table 12: Nominal tone in borrowings*

| | sg. | pl. | variety | Swahili |
|---|---|---|---|---|
| (30) 'barn' | kìtálà, èŋ- | | PAR | kitalu (vi-) 'fence, enclosure, wall, yard, bed' (Höftmann 1989: 135) |
| (31) 'basket' | kìkápù, èŋ- | kìkàpù-nî, ìŋ- | KEE (+3) | kikapu (vi-) 'basket' (Legère 1990: 131) |
| (32) 'door' | mùláŋgò, è- | mùlàŋgò-nî | KEE | mlango (mi-) 'door' (Legère 1990: 223) |
| | mìláŋgò, è- | mìláŋgò-tîn, ì- | PUR | |
| | láŋkò, ò- | | SAL | |
| (33) 'fish' | sàmákì, ò- | | KIS | samaki (–) 'fish' (Höftmann 1989: 286) |
| (34) 'hat' | kòpíyà, èŋ- | kòpìyà-ní, ìŋ- | DAM (+13) | kofia (–) 'headdress, cap' (Höftmann 1989: 142) |
| (35) 'load' | mɔ̀sɔ́kɔ̀, l- | mɔ̀sɔ̀kɔ̀-àní, l- | CAM | mzigo (ma-) 'load' (Höftmann 1989: 239) |
| | | mìsíkwànì, ì- | KIS | |
| | mìsíkɔ̀, ɔ̀l- | | ATK | |
| (36) 'pot (made of metal)' | màbátì, è- | mábátí-nî | ARU | bati (ma-) 'tin, zinc' (Höftmann 1989: 26) |
| (37) 'rice' | mùshélè, l- | mùshélè-n, l- | SIR | mchele (mi-) 'rice (shucked)' (Legère 1990: 179) |
| | mùshélè | mùshèlè-ní | DAL (+2) | |
| | mùshélè, ɔ̀l- | mùshélè, ìl- | MOI | |
| | mùshélè, ɔ̀l- | | DAM (+8) | |
| (38) 'sorghum' | mùtámà, ɔ̀l- | | MAT | mtama (mi-) 'sorghum' (Höftmann 1989: 223) |
| (39) 'trap' | màtékò | màtèkò-ní | CAM | mtego (mi-) 'trap' (Legère 1990: 80) |
| | mɔ̀tékɔ̀, ɔ̀l- | mùtèkò-nî, ìl- | SAL (+2) | |
| | mùtékò, ɔ̀l- | | ATK | |
| (40) 'window' | dìríshà, ɔ̀l- | dìrìshà-ní, ìl- | SIR (+2) | dirisha (ma-) 'window' (Legère 1990: 83) |
| | dìrícà | | CAM | |

The tonal structure of these borrowings resembles the tonal structure of the singular and plural of a noun agent. Both borrowings and noun agents have to be created anew; the former by borrowed nouns, and the latter by verbs. Maybe this similar way of building nouns is decisive

for nearly the same tonal structure in noun agents as well as in borrowings.

It is notable that in Example (34) 'hat' the Swahili-borrowed stem structure CVCVV is adapted into CVCVCV. Additionally, the labiodental fricative turns into a bilabial plosive, probably because / f / is not distinctive in Maa. Likewise, the Swahili stem structure CCVCV is adapted into CVCVCV in Examples 'rice' (37) and 'trap' (39). Here, it may be considered that possibly the Swahili plural forms with their CVCVCV structure have influenced the Maa syllable structure even though the Swahili vowel / i / has not been borrowed (Meissner 2007: 149-151).

## 5 Concluding remarks

This paper wanted to show some morphological and tonal aspects with regard to borrowings of Swahili nouns. It was shown that borrowings exist particularly in such semantic fields in which the influence of the Swahili neighbours was high in the last centuries. For example, nouns regarding to "domestic life" and "nourishment and reception of food" were transferred into Maa. In all dialectal varieties of Maa borrowings exist. Interestingly in my data KIS has the highest amount of borrowings, whereas the lowest amount is to be found in PAR. This is all the more noteworthy as both varieties belong to Tanzania South Maa. The PAR lives on the outermost border of the Maa area and have a special position within the Maa people. This may perhaps be an explanation for the low number of borrowings.

We looked at the morphological structure of borrowings. In contrast to other nouns borrowings do not show a great heterogeneity regarding their suffixes. Singulative suffixes always have the form /–(n)i /, whereas plural suffixes display mostly /–ni /. Borrowings adopt these suffixes from Maa.

Since Swahili also has affixes, we observed how these affixes were transferred into Maa. The Swahili plural prefix / ma- / for example can be found frequently with borrowings. In such cases this prefix does not distinguish number anymore, but is often conserved in singular and plural. Borrowings can also be based on the Swahili singular form. For example, in Swahili the lexeme 'machete' displays in singular panga and in plural mapanga. Accordingly, Maa shows in singular páŋkà and in plural páŋkà or pàŋkà-í. Besides / ma- /, other Swahili prefixes like / ki- / and / mi- / and also the Swhahili locative suffix / -ni / can be transferred into Maa. Thereby these affixes lose the original meaning they had in Swahili. In contrast, the Swahili prefix / vi- / is never borrowed. Maybe the reason is that the consonant / v / is not distinctive in Maa.

Usually no tonal structure can be predicted for Maa nouns. But there seems to be an exception

with regard to some borrowings. Items with the stem structures CVCVCV, CVCVV and CCVCV are nearly always transferred into Maa by adopting the stem structure CVCVCV with the tonal pattern LHL.

The present paper presents only a glimpse at some characteristics with regard to borrowings in Maa. Hopefully, further research will allow for a more detailed analysis.

Abbreviations and symbols

| | |
|---|---|
| C | consonant |
| f. | feminine |
| F | falling tone |
| H | high tone |
| L | low tone |
| m. | masculine |
| pl. | plural |
| sg. | singular |
| V | vowel |

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# Meanings of the spatial deictic verb suffixes in Kupsapiny, the southern Nilotic language of the Sebei region of Uganda

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Abstract

This study examines the meanings of two pairs of verb suffixes that show deictic contrast in Kupsapiny, the southern Nilotic language of the Sebei region of Eastern Uganda. It shows that they do not consistently show exactly the same deictic contrast – unlike the hither suffixes, which always mean 'toward the deictic center', one of the thither suffixes, which is usually used for motion 'in a direction other than the deictic center', is sometimes used non-deictically. This is similar to the phenomenon that Wilkins & Hill (1995) found in the use of 'come' and 'go' verbs in other languages, where they claim the 'go' verb roots are non-deictic, general verb roots of translational motion, and take on the sense of 'thither' through pragmatic processes, based on Levinson's (1995) theory of three levels of meaning. However, one of the thither suffixes in Kupsapiny cannot be analyzed as only encoding translational motion or path. The deictic suffixes in each pair in this language are semantic as well as formal opposites.

## 1. Introduction[1]

This study examines the meanings of the two pairs of verb suffixes in Kupsapiny that show deictic contrast. It addresses the main issue that Wilkins & Hill (1995) raise, namely how to analyze cases where the thither form that is in contrast with the hither form has a wide range of application. The main findings of the present study are as follows.

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Abbreviations. AD: Addressee, ALL: Allative, CON: Connective (the same form as the third person distant past prefix), DIST.PAST: Distant past, EP: Epenthis, IMMED.PST: Immediate past, NEUT: Deictically neutral, REFL: Reflexive, SP: Speaker, V.DST.PAST: Very distant past

The hither suffixes in both pairs invariably mean 'toward the deictic center', and the thither suffix in one of the pairs usually means 'in a direction other than the deictic center'. On the other hand, the thither suffix in the other pair, which usually expresses 'in a direction other than the deictic center' when an unsuffixed verb form is used for a deictically neutral event, is sometimes used for motion 'in a direction other than the deictic center' especially when no unsuffixed form is used at all. This is similar to the phenomenon that Wilkins & Hill (1995) pointed out about the 'come' and 'go' verbs in Mparntwe Arrernte (Arandic, Pama-Nyungan, Australian) and Longgu (Oceanic, Austronesian), where the 'go' verb roots are used as long as the figure object moves in a direction other than the deictic center. They analyze these verb roots as general, non-deictic motion verb roots at the level of stored meaning. According to their analysis, unlike the 'come' verbs, which conventionally or non-defeasibly implicate that the direction of the motion is 'toward deictic center', the 'go' verb roots only defeasibly implicate that the direction of the motion is 'not toward deictic center'.[2] Thus, the 'go' verb roots acquire the meaning 'not toward deictic center' through pragmatic processes, and this meaning may be canceled depending on the context. However, even under the same framework, Wilkins & Hill's analysis of the 'go' verb roots in these languages as non-deictic does not work with one of the thither suffixes in Kupsapiny. Applying their analysis is applied to the Kupsapiny deictic suffixes, they will be analyzed as follows.

The hither suffixes and one of the thither suffixes conventionally, or non-defeasibly, implicate that the figure moves 'toward the deictic center' and 'in a direction other than the deictic center', respectively, whereas the other thither suffix only defeasibly implicates 'in a direction other than the deictic center'. At the level before pragmatic processes, the hither suffixes and one of the thither suffixes have the meanings of 'toward the deictic center' and 'in a direction other than the deictic center', respectively, but the other thither suffix generally expresses motion.

Thus, if the thither meaning of one of the suffixes in question were analyzed as nothing but utterance-token meaning, it would be a suffix that conventionally or non-defeasibly expresses only motion, or more specifically path; otherwise, it would be a meaningless suffix. However, this language has a suffix for the ALONG vector of path (section 3.2.1), which this thither suffix (and the hither suffix in the pair) can directly follow. Moreover, unlike the 'come' and 'go' verbs in Mparntwe Arrernte and Longgu, the two pairs of deictic suffixes are formal opposites with the same formal complexity that occur in the same set of grammatical environments, and can reasonably be considered to have the same conceptual complexity. Therefore, although Levinson (1995) claims that his argument for three levels of meaning applies to closed-class forms, it does not work with one of the deictic suffixes in Kupsapiny.

The present study also deals with another question that Wilkins & Hill (1995) address (also other researchers such as Miller & Johnson-Laird 1976 and Levin & Rappaport Horav 1992 do),

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[2] Wilkins & Hill (1995) use 'not toward deictic center' to characterize the defeasible meaning of the 'go' verb in Mparntwe Arrernte and the 'go' verb in Longgu. Whenever I talk about their argument, I use it, but otherwise, I use 'in a direction other than the deictic center'.

that is whether a class of motion verbs can be grammatically defined. Because the deictic suffixes in Kupsapiny attach not only to translational motion verbs but also to other types of verbs including self-contained motion verbs and perception verbs, the occurrence with these suffixes cannot be a criterion for motion verbs. Thus, this supports Wilkins & Hill's claim that motion verbs cannot be formally defined. Nevertheless, whenever these suffixes are used, translational motion occurs in the described event, regardless of whether the verb is a translational motion verb or not, though the motion could be fictive motion or motion with which a non-motion event is associated (associated motion). In relation to this, the present study also touches on the question of whether or not associated motion can be regarded as a cross-linguistically valid conceptual category (Koch 1984, Wilkins 1991). In an associated motion event, a non-motion event component (an action or state-change) expressed by the verb stem is associated with a translational motion event component that is expressed by an affix; the translational motion component is expressed in a backgrounded way in the sense that it is treated as a subordinate event component, rather than a main event component, and also in the sense that it is expressed with a closed-class form, namely a verb affix, rather than a open-class form like a verb or adverbial. An associated motion event is expressed as in the following: 'to do the action indicated by the verb or undergo the state change indicated by the verb as one moves hither/thither', and there are languages with a system of verb inflections that are used specifically for such a type of event.[3] When Kupsapiny expresses an associated motion event, it uses a suffix complex made up of the hither or thither suffix in one of the deictic suffix pairs and the suffix for the ALONG vector. However, this suffix complex is not devoted to associated motion events. A verb with this suffix complex expresses an associated motion event only when the verb is a non-motion verb. When the verb is a motion verb, a verb with this suffix complex expresses a translational motion event.

The organization of the present study is as follows. Section 2 provides an overview of motion expressions in Kupsapiny, and reviews Wilkins & Hill (1995) and Levinson (1995, 2000). Section 3 presents how the pairs of suffixes in Kupsapiny are used. Section 4 analyzes the data in section 3, and discusses the above issues that Wilkins & Hill (1995) raise. Section 5 concludes the paper.

## 2. Background

Three subsections make up this section. Section 3.1 provides basic information about Kupsapiny and its grammar, section 3.2 gives an overview of motion expressions in this language, and section 3.3 reviews literature, especially Wilkins & Hill (1995) and Levinson (1995).

### 2.1 Basic information about Kupsapiny grammar

Speakers of Kupsapiny live in the Sebei region in east Uganda (Kawachi 2010b). The Sebei

[3] As far as I know, apart from Mparntwe Arrernte (Wilkins 1991), associated motion at least in the following languages has been described in literature: Kaytej (Kaytetye) (Koch 1984) and Adnyamathanha (Tunbridge 1988), both of which are Pama-Nyungan languages of Australia, and Cavineña, a Tacanan language of Bolivia (Guillaume 2000).

region is an unofficial and informal label for the Kupsapiny-speaking region, more correctly called the 'Sebei sub-region'. It used to be one administrative unit called the Kapchorwa district, but divided into the two administrative districts of Bukwa and Kapchorwa in 2005. The Sebei region is about 300 kilometers east of Kampala (about 360 kilometers by car), and covers an area of approximately 1,750 square kilometers on the northern slopes of Mt. Elgon, an extinct volcano. The Uganda-Kenya border crosses Mt. Elgon northeast to southwest.

According to the national census in 2002 (Uganda Bureau of Statistics), the population of the Sebei people rose from 120,000 in 1994 to 181,000 (a little over 130,000 in Kapchorwa District and a little below 50,000 in Bukwa District).

The Sebei region is the only community where Kupsapiny is spoken, and almost all the people in this region speak this language. Many Sebei seem to consider Sabaot, which about 280,000 people speak on the Kenyan side of Mt. Elgon, to be another intelligible dialect of their language. Thirty percent of the Sebei people are monolingual in Kupsapiny. Most of the remaining population speaks English as their second language. Many of them also speak Lugisu (also called Lumasaaba), a Bantu language spoken by the Bagisu people (also called Bamasaaba) in the Sironko and Mbale Districts to the southwest of the Kapchorwa District, as well as Swahili. Additionally, some of them speak Luganda, the language of the Baganda people, which is the most widely spoken Bantu language in Uganda.

Kupsapiny belongs to the Elgon group in the Kalenjin branch of the Southern Nilotic language family. Researchers have conducted only a small number of studies on this language (Montgomery 1966, O'Brien & Cuyers 1975a, 1975b, Kawachi 2010a, 2010b). Only a few past studies included Southern Nilotic languages though there are some studies on other Kalenjin languages (e.g. C. Creider 1982, Creider & Creider 1990).

This language has the set of vowels in Figure 1. As shown on the left side of this figure, the eight types of short vowels make the ATR distinction. [+ATR] and [-ATR] are represented with the left- and right-tack subscript diacritics, ˖ and ˗, respectively. Five out of the eight types of vowels have long counterparts. Vowels of the three qualities, ɨ, ə, and ɑ, which are always short, are uncommon, as compared to those of the other five qualities.

| SHORT [+ATR] | | | LONG [+ATR] | |
|---|---|---|---|---|
| i̘ | ɨ̘ | u̘ | ii̘ | uu̘ |
| e̘ | ə̘ | o̘ | ee̘ | oo̘ |
| | a̘ | ɑ̘ | aa̘ | |

| SHORT [-ATR] | | | LONG [-ATR] | |
|---|---|---|---|---|
| i̙ | ɨ̙ | u̙ | ii̙ | uu̙ |
| e̙ | ə̙ | o̙ | ee̙ | oo̙ |
| | a̙ | ɑ̙ | aa̙ | |

Figure 1: Vowels in Kupsapiny

Kupsapiny has consonant phonemes shown in Table 1.

| | bilabial | labiodental | dental | palatal | velar |
|---|---|---|---|---|---|
| stop | p | | t | c | k |
| fricative | | (f) | s | š | |
| nasal | m | | n | ɲ | ŋ |
| lateral | | | l | | |
| flap | | | r | | |
| glide | w | | | y | |

Table 1: Consonants in Kupsapiny[4]

Kupsapiny makes a three-way tonal distinction, high, mid, and low. In the examples in the present study, ´ and ` represent high and low tones, respectively, and the mid tone is not indicated.

This language basically has VSO word order, as in (1) and (2). It is an accusative language, where case is marked with tone. Nominative case is marked with overall high tone or rising tone, and accusative case is marked with overall low tone or falling tone.

(1) kị-mụy cẹ́mtáy.
V.DST.PAST.3-become.scared Cemtay
'Cemtay got scared.'

(2) kị-mụy cẹ́mtáy cẹẹpèt.
V.DST.PAST.3-scare Cemtay Ceepet
'Cemtay scared Ceepet.'[5]

There are a series of affix slots for verbs. There are several slots for verb prefixes and several slots for verb suffixes. Montgomery (1966: 47-48) and O'Brien & Cuyers' (1975a: 61) analyses of the verb affix slots are shown in (3a) and (3b), respectively, where the lower the number of the affix is, the closer it is to the verb root. The deictic suffixes discussed in the present study are 4 in (3a) and 5 in (3b).

(3) a. Montgomery (1966)
8. Previous past prefix – 7. Degree of past time prefix – 6. Past and future prefix –
5. Degree of past or future time prefix – 4. Negative prefix – 3. First adverbial prefix –
2. Second adverbial prefix – 1. Pronominal prefix –
Root
– 1. Directional suffix – 2. Intransitive suffix – 3. First aspect marker suffix –

[4] /f/ occurs only in loan words.

[5] VOS order is possible when the subjet is in focus. Notice that the tone patterns of the two nouns are the same in the VOS example (i) as in the VSO example (2), which is propositionally the same as (i).

(i) kị-mụy cẹẹpèt cẹ́mtáy.
V.DST.PAST.3-become.scared Ceepet Cemtay
'Cemtay scared Ceepet.'

4. Peripatetic suffixes – 5. First pronominal suffix – 6. Indirect object marker –
7. Second pronominal suffix – 8. Second aspect marker – 9. Reflexive suffix

b. O'Brien & Cuyers (1975a)

5. Reduplicated past prefix – 4. Tense prefix – 3. Negative prefix – 2. Adverbial prefix – 1. Subject prefix –
Root
– 1. Directional suffix – 2. Inceptive suffix – 3. State suffix – 4. Intransitive suffix –
5. Peripatetic suffix – 6. Instrumental suffix – 7. Direct/Indirect/Reciprocal object suffix – 8. Aspect suffix – 9. Reflexive suffix

One of the prefixes, the tense prefix, in O'Brien & Cuyers' analysis, (the tense prefix complex in Montgomery's analysis) has to occur as part of a finite verb form. All the sentence examples in this study use one of the past tense prefixes, *kạ-* (immediate past; for an event that happened today), *kụ-* (distant past; for an event that happened some time between yesterday and one week ago), and *kị-* (very distant past; for an event that happened more than one week ago).

### 2.2 An overview of motion expressions in Kupsapiny

This subsection provides an overview of the inventory of expressions for spatial expressions in Kupsapiny. It uses some terminology used in Talmy's (1985, 1991, 2000, 2007) typology of event integration, which deals with (translational) motion as one type of macro-event. According to Talmy (2000b: 312), the figure object is "a moving or conceptually movable entity whose path, site, or orientation is conceived as a variable, the particular value of which is the relevant issue" and the ground object is "a reference entity, one that has a stationary setting relative to a reference frame, with respect to which the Figure's path, site, or orientation is characterized". In translational motion, the figure changes its relative location in space, and when fully described linguistically, the translational motion event is expressed as the main event in which the figure moves along a path with respect to the ground(s), with the option of expressing co-event (e.g. manner, cause). The core schema of a motion event consists of the path, and its main components are the vector, the conformation, and the deictic (Talmy 2000a, 2000b). The vector "comprises the basic types of arrival, traversal, and departure that a [f]igure schema can execute with respect to a [g]round schema" (Talmy 2000b: 53) (e.g., AT, TO, FROM, VIA, etc.). The conformation is a path component that relates the fundamental ground schema to "the geometric schema for the full [g]round object" (Talmy 2000a: 246) (e.g., "TO a point which is of the inside of [an enclosure]" for English *in(to)*). The deictic component of the path consists of 'toward the deictic center' and 'in a direction other than the deictic center'.

According to Talmy (1985, 1991, 2000b, etc.), the cognitive process of event integration is the conceptual integration or conflation of an event as unitary that closer analysis would conceptualize as complex. In language, this process emerges as the expression of an event in a single clause that a more complex syntactic structure could express more analytically (Talmy 2000b: 215-216). He argues that although languages can differ as to what can be conceptualized as single events and expressed in a single clause, there is a class of events that tend to be recurrently conceptualized as unitary events and expressed in single clauses across languages. Talmy cross-linguistically investigated event integration patterns, i.e. patterns of

expressing a macro-event (a complex event conceptualized as a unitary event; e.g. motion event) consisting of a framing event, or a main event (e.g. motion along a path), and a co-event event, or a subordinate event (e.g. manner of motion, means of causation). He found that languages fall into one of two typological types, verb-framed and satellite-framed languages, depending on how components of the macro-event are syntactically expressed, particularly, (i) whether the core schema of the framing event is expressed in the verb (the framing verb) or in the satellite (the framing satellite), which is "the grammatical category of any constituent other than a nominal or prepositional-phrase complement that is in a sister relation to the verb root" (Talmy 2000b: 102, 222), and (ii) whether the co-event appears in the satellite or adjunct, or in the verb. Those languages that usually express the core schema of the framing event in a verb and the co-event with a satellite or adjunct are called "verb-framed languages", whereas those languages that characteristically express the core schema of the framing event in the satellite (sometimes, a satellite plus an adposition, or an adposition alone) and the co-event with a verb are called "satellite-framed languages". Verb-framed languages include: Romance languages, Semitic languages, Korean, Japanese, Tamil, Polynesian languages, Bantu, some branches of Mayan, Nez Perce, and Caddo. On the other hand, satellite-framed languages include: most Indo-European languages minus the Romance languages, Finno-Ugric languages, Chinese, Ojibwa, and Warlpiri. Talmy claims that the two types of languages consistently show the two different patterns of expressing the components of macro-events across the following five event domains: motion (specifically, translational motion), state-change, realization, temporal contouring (aspect), and action correlating. The present study focuses on motion.

#### 2.2.1 Motion expression patterns in Kupsapiny

Kupsapiny uses many more motion expressions characteristically found in satellite-framed languages than those characteristically found in verb-framed languages. This is noticeable when the motion is non-agentive or self-agentive motion. Examples are shown in (4)-(6).

(4) kụ-rọn-cị nẹẹtọ́ ạnṇọ (ạrít).
DIST.PAST.3-float-to 3SG.NOM river inside
'S/he jumped into the river.' (deictically neutral)

(5) kụ-mụkụrụkụụrụ-t-ẹ́ rwáánṭẹt lạkám.
DIST.PAST.3-roll-thither-from stone hill
'The stone rolled down the hill (in a direction other than the deictic center).'

(6) kụ-mwál-ọọ-nnw-ẹ nẹẹtọ́ kọ́.
DIST.PAST.3-limp-along-hither-from 3SG.NOM house
'S/he limped out of the house (toward the deictic center).'

In these sentences, manners of motion are expressed in the verb roots. Path information is expressed only by the verb suffix or the suffix complex, which serves as a satellite to the verb.

For agentive motion events, Kupsapiny may follow the satellite-framed language pattern, as in (7) and (8), but may also deviate the satellite-framed language pattern, as in (9) and (10). In fact, the construction in (9) is more common than that in (7). However, (9) and (10) seem to follow neither type of expression pattern. In these sentences, the manner of motion and the

means of causation are expressed in the first verbs, which are main verbs, but the paths of motion are expressed in the second verb, which are non-main verb. These sentences look like of the verb-framed type in that they employ a multiple verb construction and express path with a verb, but they look like of the satellite-framed type in that they express co-events with the main verb.

(7) kù-mmụkùrùkùùrù-t-ẹ nẹẹtọ́ rwáántẹt lạkám.
DIST.PAST.3-roll-thither-from 3SG.NOM stone hill
'S/he rolled the stone down the hill (in a direction other than the deictic center).'

(8) kụ-sịrịr-t-ẹ nẹẹtọ́ sịrọk-wạạní tịríísạ.
DIST.PAST.3-throw-NEUT-via 3SG.NOM clothes-1SG.POSS window
'S/he threw away my clothes through the window.' (deictically neutral)

(9) kạ-tọ́ọr-tạ nẹẹtọ́ rwáántẹt kụ-mmụkụrụkụụrụ-t-ẹ́
IMMED.PST.3-push-thither 3SG.NOM stone DIST.PAST.3-roll-thither-from
lạkám.
hill
'S/he pushed the stone (in a direction other than the deictic center), and it (the stone) rolled down the hill (in a direction other than the deictic center).'

(10) kú-sịrịr nẹẹtọ́ sịrọk-wạạní kú-kkwạ sáŋ.
DIST.PAST.3-throw 3SG.NOM clothes-1SG.POSS CON-come.PL outside
'S/he threw away my clothes, and they (my clothes) came outside.'

### 2.2.2 Inventory of grammatical categories used in motion expressions in Kupsapiny

The grammatical categories that are used to express components of motion events in this language include verbs, locational nouns, and prepositions, verb suffixes, and adverbs.

Verbs: Path of motion verbs in Kupsapiny are listed in (11) and (12).[6] The verbs in (11) are non-agentive or self-agentive motion verbs, and the verbs in (12) are agentive motion verbs. The first two verbs in each group are deictic verbs.

(11) cọ́ 'to come', wọ́ 'to go', kwáy 'to move through/across', tɬ́l 'to cross', tọ́c 'to move up, ascend', lọọŋụ 'to move up', rẹkụ 'to move down, descend', pụnụ 'to arrive', sụttíyẹ 'to fall', nạạm 'to follow', lẹẹkụụté 'to approach, move close to', nọọkù 'to approach, move close to', kụr 'to escape', mwɨy 'to move away', yelli 'to move aside, bend one's body', pụntè 'to pass, move over, arrive, reach', keettiye 'to pass over/by/across', mọ́ŋ 'to pass through', cúútu 'to pass through (illegally and secretly)', muutù 'to move around, surround', kạttḛ́ 'to return', wụt 'to enter, insert, put in', sịịr 'to move over/across/through/along (depending on the ground object and the suffix)', pạkáttyẹ

[6] Kupsapiny has an existential/locational verb: *mịịtẹ* (colloquial form: *mịị*). This verb is used for expressing the existence of a figure object with respect to a (usually) given ground object (e.g. *There is a book on the table.*), or locating a (usually) given figure object with respect to a ground object (e.g. *The book is on the table.*).

'to leave'

(12) sụt 'to take (an inanimate figure object)', sụt (sụt-u) 'to bring (an inanimate figure object)', kwooru 'to take/bring (an animate figure object)', yịwẹ 'to put', tọọr 'to put/carry on head, place on the surface of', kạsạn 'to put/carry on back', yoome 'to put together', ŋẹt 'to lift up, look up'

The deictic verbs in Kupsapiny seem to be used for approximately the same ranges of types of situations as those in English. The deictic center can be either the speaker or addressee.

Manner of motion verbs are shown in (13). All of these verbs are used for self-agentive motion, and a few can also be used for non-agentive motion.

(13) mur 'to roll', kọŋ 'run', cirway 'to run', kụy 'crawl', tẹrẹ́rtẹ 'to fly', rạạn 'to jump', wạstáátẹ/wọstóótẹ 'to walk', sạrtạkẹy 'to walk fast', tạrtạráń 'to stagger', mwạl 'to limp', cạpáttyẹ 'to slide', pụr pụŋpụŋíṭ 'to swim' (*lit.* 'beat swimming'), sáptẹ 'to tiptoe, walk slowly'

Means of causation verbs, which are agentive, are shown in (14).

(14) wíṛ 'to throw', worte 'to throw (a short distance)', sịrírtẹ 'to throw (a long distance)', tọọrtẹ 'to push (intentionally)', wụnúktẹ́ 'to push (maybe accidentally)', cụụt 'to pull'

There is also one verb that expresses not only the path of motion but also the manner and cause of motion: *túytúy* 'move backward slowly because of fear'.

Like *sụt* 'to take' and *sụt* 'to bring' in (12), which differ in ATR, a small number of verbs make the deictic distinction with part of their sounds. Examples are shown in (15)-(17). The pairs of verbs in (15) contrast in their final consonant, those in (16) contrast in their vowel and final consonant (There are no forms like * *kụ-lạ́ŋ-n-ẹ* nor * *kụ-lọ́ŋ-t-*ẹ), and those in (17) contrast in their ATR and tone.

(15) kụ-koŋ/kụ-koŋ (kạpọn ạríṭ).
DIST.PAST.3-run.hither/DIST.PAST.3-run.thither cave/cave inside
'S/he ran (into the cave) toward the deictic center/in a direction other than the deictic center.'

(16) kụ-lọ́ŋ-n-ẹ/kụ-lạ́ŋ-t-ẹ tọọtẹt.
DIST.PAST.3-climb.hither-hither-via/ wall
DIST.PAST.3-climb.thither-thither-via
'S/he climbed over the wall toward the deictic center/in a direction other than the deictic center.'[7]

[7] The form that can be used as a deictically neutral form in (16) is *kụ-lạ́ŋ*, whose root is the same as the thither form *kụ-lạ́ŋ-t-e* in this sentence.

(17) kʊ̀-wọn/kʊ-wǫ́n tǫ́ǫ́kạ.
DIST.PAST.3-move.animal.hither/DIST.PAST.3-move.animal.thither cow.PL
'S/he moved cows somewhere toward the deictic center/in a direction other than the deictic center.'

Locational nouns: Kupsapiny has a series of locational nouns like (18), which specify a component of a path or a particular portion of a ground object.[8] They are nouns, though they are treated as adverbs in O'Brien & Cuyers (1975a: 34, 85). They follow a noun phrase that refers to a ground object. In other words, the possession construction "POSSESSOR POSSESSUM" ("PR PM" for short) is formed by juxtaposing a possessor noun phrase and a possessum noun (a noun phrase for a ground object and one of the locational nouns, respectively) without using any possession marker, as in (18).

(18) arít/orít 'inside', sáŋ 'outside', tárat 'aboveness, top', ŋúŋ 'underness, belowness, bottom', karéŋ 'bottom', kérìta 'bottom', tay 'front, aheadness, right', lɨ́t 'back, left', tapán 'closeness, end (of a corner)', kamás 'besideness', pùtoo 'a (particular) side of (river, road, field) (e.g. pùtoo-nì 'this side', pùtoo-nìn 'that side'), kwén 'in the middle of', matow 'aboveness, the other side of the bed in a house, the area behind the headboard of the bed'

Prepositions: Kupsapiny has the following spatial prepositions: *am/om* 'at (event location), from (source), than (standard of comparison)' (*am* and *om* are in free variation), *kʊcạ́kẹ́* '(starting) from (one place to another place)', *akay* 'up to', *paka* 'up to', *keeliya* 'in the direction of, along'.

This language makes a distinction between the two types of location, object location and event location, and groups object location with goal and event location with source in patterns of marking them; object location and goal always have zero marking, whereas event location and source are marked with the preposition *am/om* when the verb has no applicative suffix (Kawachi 2010 a). These marking patterns are independent of the use of the locational nouns discussed above. However, the use of these prepositions in a sentence with one of the applicative suffixes that each semantically corresponds to the preposition is considered to be ungrammatical. For example, the use of *am/om* 'from' in such a sentence with the applicative suffix as (5), which is repeated as (19) below, is normally judged as ungrammatical, unlike in a non-applicative sentence such as (20).

(19) kʊ-mʊkʊrʊkʊʊrʊ-t-ɛ́ rwɑ́ɑ́ntɛt lakɑ́m.
DIST.PAST.3-roll-thither-from stone hill
'The stone rolled down the hill (in a direction other than the deictic center).'

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[8] Like *arít/orít* 'inside', there are pairs of forms that alternate between their initial *a* and their initial *o* (e.g. *am/om* 'at (event location), from (source)', *amík/omík* 'food', *anɲo/onɲo* 'river', *ayeŋ/oyeŋ* 'two'). They are in free variation, but the Mbai dialect, which is spoken in the western-most Sebei region (the west edge of the Kapchorwa district), seems to use only forms with the initial *a*.

(20) kụ-mụkụrụkụụru rwaantet ạm lạkạ́m tárạt.
DIST.PAST.3-roll stone from hill top
'The stone rolled down the hill (*lit.,* rolled from the top of the hill).' (deictically neutral)[9]

Verb suffixes: Kupsapiny has verb suffixes that can form an applicative construction, where a noun phrase that does not express a direct object but an event location, source, instrument, accompanied entity, or beneficiary occurs syntactically as if it were a direct object. Examples are already given in (5) (= (16)), (7), and (19), and are given in various places in the next section. The deictic suffixes are discussed in detail in section 3.

Adverbs: There are adverbs for approximate locations like (21), which can be used with motion verbs.

(21) a. yu 'here', yun 'there', yúún 'over there'
b. lì 'this way (pointing)', lin 'that way (pointing)', líín 'that way over there (pointing)', wuli 'this way (not pointing)', wulin/wulo 'that way (not pointing)', wulíín 'that way over there (not pointing)'
c. póóre/keel 'downward (in/to a relatively lower location)', tááko/matow 'upward (in/to a relatively higher location)', ŋuŋ 'beneath (in/to a vertically lower location)', tárat 'above (in/to a vertically higher location)'

Of the three types of adverbials, those in (21b) concern deictic components of paths in translational motion events. They are organized in terms of the direction of motion relative to the deictic center, the distance from the deictic center, and whether or not pointing is accompanied, as shown in Table 2. Their meanings are stable, unlike those of the deictic suffixes.

| direction and distance / pointing | 'hither, this way': 'toward SP' | 'thither, that way': 'away from both SP and AD (not very far)' or 'toward AD' | 'yonder, that way over there': 'away from both SP and AD (very far)' |
|---|---|---|---|
| pointing | lị | lịn | lịịn |
| not pointing | wụlị | wụlịn | wụlịịn |

Table 2: Deictic adverbs in Kupsapiny

[9] The preposition *am* in this sentence could also be interpreted as the preposition for the location of the event. In this case, the sentence would mean 'The stone rolled on the top of the hill', though such an event is unlikely to occur.

(22) and (23) show examples with a verb that does not take any of the deictic suffixes. (22) is deictically neutral, and (23) has deictic information.

(22) kạ-yụwẹ cẹ́mtáy ŋạcạrẹt kọ́.
IMMED.PST3-put Cemtay chair house
'Cemtay put the chair in the house.' (deictically neutral)

(23) kạ-yụwẹ cẹ́mtáy ŋạcạrẹt ko wụlị/wụlịn.
IMMED.PST3-put Cemtay chair house hither/thither
'Cemtay put the chair in the house toward the speaker/away from both the speaker and addressee (not very far)' or toward the addressee.'

The deictic adverbs can also occur with the combination of the direction marker *po* and one of the locational nouns, as in (24).

(24) kụ-kọŋ lịn pọ tạrạt.
DIST.PAST.3-run.thither thither direction aboveness
'S/he ran upward that way.'

### 2.3 Literature review

#### 2.3.1 Three levels of meaning and spatial deixis

Wilkins & Hill (1995) argue that 'come' and 'go' verbs are not lexical universals that show a semantic opposition, by presenting data on Mparntwe Arrernte (Arandic, Pama-Nyungan, Australian) and Longgu (Oceanic, Austronesian). Following Levinson (1995), they distinguish three levels of meaning that are modularly distinct from each other, (i) the lexical semantic level, or the basic schematic semantic structure level (Semantics 1), where linguistic items are stored as conventionalized signs with fixed meanings that are characterizable independently of other linguistic items, (ii) the pragmatic level, or the level of meaning-affecting processes, where information in (i), as an input, is processed against context, and information at the next level (iii) is derived as an output, (iii) the contextualized meaning level, or the final semantic interpretation level (Semantics 2), where linguistic items are structured as categories and are interpreted in relation to other linguistic items in the system and in particular contexts, and pragmatic implicatures are assigned. Meanings are schematic, fixed, and explicitly describable at the (i) level, and exhibit fuzziness, polysemy, and context-dependency at the (iii) level. Wilkins & Hill argue that 'come' and 'go' verbs in some languages show deictic opposition not on the level of (i) but on the level of (iii), because 'go' verbs in such languages are not deictic verbs but general verbs of translational motion on the (i) level. They take on the deictic meaning only in opposition to 'come' verbs in the system; hence, 'come' and 'go' verbs are not lexical universals.

They base their argument on data on Mparntwe Arrernte and Longgu, whose 'go' verbs they claim are inherently non-deictic. In Mparntwe Arrernte, the verb *lhe-* shares the widest ranges of use with the English verb *go*, but it has a wider range of application than *go*, because it is used in cases where English would use manner of motion verbs, and suggests that the figure object moves in a manner typical of it. This verb root belongs to the category of basic motion

verb roots with three other verbs (*unte-* 'to hurry, go speedily', *knge-* 'to take, carry', and *alpe-* 'to go back'). These verbs show different grammatical behaviors from other motion verbs, specifically, the incompatibility with associated motion inflections, the occurrence with plural subject agreement suffix, and the involvement in the processes of derivation and compounding. Although this language has no suffix for 'thither', it has a deictic suffix for 'hither', *-tye*, 'towards place thought of as the place where the speaker is (i.e., hither)' (Wilkins & Hill 1995: 222), which derives from the verbs *unte-* 'to hurry, go speedily' and *knge-* 'to take, carry' the following verb stems: *unte-tye* 'to hurry hither' and *knge-tye* 'to bring'. Unlike the verb root *lhe-*, which is monomorphemic (and does not take the hither suffix: **lhe-tye*), the verb root for 'to come', *petye-*, contains this hither suffix, though there is no verb root like **pe-*, which seems to be related to the Proto-Arandic 'go' verb **ape-*. Thus, what seems to be the 'go' verb, *lhe-*, and the 'come' verb, *petye-*, are at different levels in the lexical system of this language: the former is an unanalyzable, simplex root, whereas the latter is a derived stem. Another difference from English is that *petye-* 'to come' is used for any motion of the figure in a direction of the deictic center, as long as the figure gets closer to the deictic center in the course of the motion than it was before, regardless of the absolute distance between the figure and the deictic center after the motion (thus, the endpoint of the path may be far from the deictic center). Wilkins & Hill claim that although *lhe-* is used for 'motion-*not*-towards-deictic-center', it is a general verb of translational motion that is inherently non-deictic in its lexical semantics because it is formally simpler than *petye-* 'to come'. Thus, it should be less conceptually simpler than it is, according to the iconicity principle: the formal complexity of a linguistic form reflects the complexity of the concept that it expresses (e.g., Haiman 1985). Thus, *lhe-* takes on the deictic sense only though a pragmatic implicature based on its opposition with *petye-* 'to come' in the system, and its deictic sense is defeasible. The fact that it is cross-linguistically more common for 'come' verbs to derive from 'go' verbs through the addition of an morpheme than vice versa also supports this analysis.

In Longgu, 'come' and 'go' verb forms that are in formal opposition are both complex. The form for 'to come' is *la mai*, which is made up of the verb *la* 'to go, travel, move along a path' and the deictic particle for 'hither' *mai*, and the form for 'to go' is *la hou*, which is made up of the verb *la* and the deictic particle for 'thither' *hou*. The two complex forms, *la mai* 'to come' and *la hou* 'to go', are in direct opposition at the same systemic level, but *la mai* and *la* are not. Unlike the 'come' verb in Mparntwe Arrernte, the 'come' verb form in this language, *la mai*, requires the figure to move to be at the deictic center after the motion. By contrast, the 'go' verb form, *la hou*, requires the figure to start at and move away from the deictic center. The verb *la* can occur without either deictic suffix to be used as a main verb that takes path and ground complements, as long as the motion is 'not-*to*-deictic-center'. However, according to Wilkins & Hill, this verb is inherently non-deictic at the lexical semantic level, though it is interpreted as deictic at the pragmatic level through opposition with *la mai* 'to come', which is used for motion 'to-deictic-center'.

Thus, Wilkins & Hill's main argument is that when 'go' verb forms are not inherently deictic at the semantics 1 level, their thither interpretation (at semantics 2 level) should be attributed to the pragmatic processes, through which they are in opposition with the 'come' verb forms.

Wilkins & Hill suggest that there may be a universally valid notion of translational motion

that genetic, non-deictic verbs express. However, they claim that even 'come' verbs differ in their lexical semantics, by pointing out that the 'come' verb in Arrernte only requires the figure to move closer to the deictic center, whereas that in Longgu requires the figure to arrive at the deictic center. However, one could say that also for the 'come' verb in Arrernte, the same requirement as that for the Longgu 'come' verb, the figure's arrival at the deictic center, actually exists at the lexical semantic level, but is waived to be used for any motion in a direction of the deictic center at the pragmatic level, where it is in opposition with the 'go' verb, that is the verb for 'motion-*not*-towards-deictic-center'.

Levinson (1995), on whom Wilkins & Hill base their argument, makes the distinction between the three levels of meaning slightly differently: (i) sentence-meaning (e.g., the conventionally implicated meaning of 'Some of the guests are already leaving.' as a response to 'What time is it?'), (ii) utterance-type-meaning, where utterances are interpreted against generalized conversational implicatures (e.g., an inference generally drawn from the above example sentence: 'Not all of the guests are already leaving.'), and (iii) utterance-token-meaning, where utterances receive interpretations based on particularized conversational implicatures, which are defeasible (e.g., an inference drawn from the above example sentence in a particular context: 'It must be late.'). Unlike (iii), which is a level of context-bound pragmatic inference, (ii) is "a level of systematic pragmatic inference based ... on *general expectations about how language is normally used*" (Levinson 1995: 93), and is the level at which Grice's (1975) conversational maxims serve as default heuristics for inferences (Levinson 1995: 97).[10] One such default heuristic is: 'What is not said is not the case', namely 'If "x is G" is said, and G and F form a contrast set of expressions, then 'x is not F' is implicated'. For example, 'All of the students were in class' and 'Some of the students were in class' are contrast sets of expressions with the former being the strong member and the latter being the weak member. An assertion of the latter yields a generalized implicature that the former does not hold true, namely 'Not all of students were in class'.

Levinson (1995: 106) argues that his argument about the three levels of meaning applies not only open-class forms but also closed-class forms. Citing Hawkins' (1991) argument, he discusses the definite and indefinite articles in English as an example. He gives counterexamples (taken from Hawkins 1978, 1991) to the basic rule of the use of the definite and indefinite articles, namely 'Introduce a new referent under description Y with *a* Y and a previously mentioned one under description X with *the* X' or 'Use the X to refer to a unique entity, a Y to refer to a non-unique entity'. The definite article may introduce entities (e.g., 'I'm late because I missed *the train*.'), and the indefinite article can be used for previously introduced referents (e.g., 'His arms and legs were damaged in the blast, and in the end he lost *a leg*.') or unique entities (e.g., 'England has *a Queen* and Spain *a King*.') (Levinson 1995: 107). Following Hawkins (1991), he states that these counterexamples can be explained by means of the above default heuristic: 'What is not said is not the case'. Thus, the articles form a contrastive set with the definite article being the strong member and the indefinite article being the weak member – *the X* entails (i.e., conventionally, or non-defeasibly, implicates) the

[10] Unlike Wilkins & Hill (1995), who describes (iii) as one level of semantics, Levinson treats it as one level of pragmatics.

uniqueness of X, whereas *a Y* defeasibly implicates the non-uniqueness of Y. However, a question arises as to whether the indefinite article has any meaning at the (i) level, and if it does, what it is.

After presenting data in section 3, the present study examines how Levinson's (1995) argument and Wilkins & Hill's (1995) argument apply to the deictic suffixes in Kupsapiny.

### 2.3.2 Other issues

Another claim that Wilkins & Hill (1995) make is that a class of motion verbs cannot be formally identified (also, Miller & Johnson-Laird 1976, Levin & Rappaport Horav 1992, etc.). They show that there are no formal criteria for defining motion verbs in either Mparntwe Arrernte or Longgu. Nevertheless, they state a possibility of identification of a subclass of motion verbs, for example, a class of intransitive path-encoding verbs (both motion and perception verbs) in Longgu, which belong to a certain formally defined verb class and can take the deictic particles *mai* 'hither' and *hou* 'thither'. The present study looks at whether or not it is possible to identify a class or subclass of motion verbs in Kupsapiny, and shows that although a class of motion verbs cannot be formally defined, translational motion always occurs whenever any of the deictic suffixes is used.

Another issue that the present study deals with is whether or not associated motion is a conceptual category that can be expressed by a set of verbal morphemes (Wilkins 1991) in Kupsapiny. Wilkins argues that associated motion is a cross-linguistically valid conceptual category that may undergo morphological marking in various languages. However, the present study shows that although Kupsapiny can express associated motion with the suffix complex consisting of the hither or thither suffix in one of the pairs of deictic suffixes and the suffix for the ALONG vector, it uses this suffix complex for associated motion only when the verb is a non-motion verb; otherwise, it uses the suffix complex for translational motion events.

## 3. Data on Kupsapiny Deictic Suffixes

This section describes the verb suffixes in Kupsapiny that carry spatial deictic information.[11] As shown in Table 3, Kupsapiny has two pairs of verb suffixes that seem to show contrast in deixis, *-u/-ø* 'hither' and *-tọ/-tạ* 'thither' and *-n* 'hither' and *-t* 'thither' (I and II on the table, respectively). They differ as to the slot they occupy in relation to the verb root; the former is closer to the verb root than the latter. Each pair of suffixes usually show contrast in terms of whether the motion is directed 'hither' ('toward the deictic center') and 'thither' ('in a direction other than the deictic center'). However, as described later, there are cases where *-t* is deictic-neutral, and does not convey any deictic information.

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[11] In the example sentences with the third-person singular pronoun subject *nɛ́ɛ́tọ́*, this pronoun is omitted. The short form of this pronoun is *nɛ̣*, which is identical in form with the verb suffix complex *-n-ɛ̣*. When I elicited the sentences with the third-person singular pronoun subject, I checked with my consultants about them using its full form *nɛ́ɛ́tọ́*, though it is not used in the examples in the present study.

| Path components expressed | 'hither' | 'thither' |
|---|---|---|
| I. Direction (section 3.1) | -u/-ø | -to̤/-ta̤ |
| II. Direction (section 3.2) | -n | -t |
| II-1. 'along' (section 3.2.1) | -o̤o̤-n/-a̤a̤-n | -o̤o̤-t/-a̤a̤-t |
| II-2. 'via', 'from', or 'with' (section 3.2.2) | -n(w)-e̤ | -t-e̤ |
| II-3. 'along' and 'from' or 'with' (section 3.2.3) | -o̤o̤-nnw-e̤/-a̤a̤-nnw-e̤ | -o̤o̤-t-e̤/-a̤a̤-t-e̤ |
| III. Other suffixes (section 3.3) | | |
| III-1. Direction of a habitual motion (section 3.3.1) | -(n)ṳ | -tini/-cini/-ti |
| III-2. 'to' (section 3.3.2) | —— | -ci̤ |

Table 3: Deictic Suffixes and Suffix Complexes in Kupsapiny

The first pair of deictic suffixes, *-u/-ø* 'hither' (if the subject is the third person and the tense is past; *-u* elsewhere; Cuyers 1975a: 70) and *-to̤/-ta̤* 'thither', simply express the direction of the motion relative to the deictic center.

The second pair of deictic suffixes, *-n* (*-nw* after a stem ending in *m* or *n*; *-n* elsewhere) 'hither' and *-t* 'thither', are always accompanied by another suffix or other suffixes to form suffix complexes. They may be preceded by the suffix for the ALONG vector, *-o̤o̤/-a̤a̤*, to form the suffix complex, *-o̤o̤-n/-a̤a̤-n* or *-o̤o̤-t/-a̤a̤-t*, or followed by the suffix *-e̤*, which is used for the VIA vector, the FROM vector, or an instrument or someone/something with whom/which the person moves, to form the suffix complex, *-n(w)-e̤* or *-t-e̤*. They may also be both preceded by the suffix *-o̤o̤/-a̤a̤* and followed by the suffix *-e̤* to form the suffix complex, *-o̤o̤-nnw-e̤/-a̤a̤-nnw-e̤* or *-o̤o̤-t-e̤/-a̤a̤-t-e̤*. Thus, the suffix complexes containing the pair of deictic suffixes, *-n* and *-t*, always express not only the direction of the motion relative to the deictic center, but also the ALONG, VIA, or FROM vector or the instrumental or comitative relation.

Sections 3.1 and 3.2 present the uses of these two pairs of deictic suffixes, and section 3.3 describes a few other pairs of suffixes that seem to carry deictic information (III in Table 3). Note that in the examples in the following sections, examples contrasting in deixis are presented in the order of (a) deictic-neutral, (b) hither, and (c) thither as the direction of the motion. Thus, (a), (b), and (c) are semantically labeled, and when one of the deictic suffixes is used in a deictically neutral way, an example of it is given as (a), and the suffix used this way is glossed as 'NEUT'. Glosses for the deictic concepts are not provided for the example sentences for the rest of the paper except for the sentences that express associated motion.

As noted by previous researchers (e.g., Craig 1979, Anderson & Keenan 1985), whether the deictic center corresponds to the speaker or is projected to include another participant, especially the addressee, seems to depend on the verb.. For example, Craig (1979) found that in Jacaltec, the deictic center is the speaker with intransitive verbs like 'to climb', 'to come up', and 'to go up', but is the subject with transitive verbs like 'to push', 'to pull', 'to put in' and 'to take out'. In Kupsapiny, the deictic center is usually the speaker, and can be projected from the speaker often to the addressee in many cases if the deictic center is not the speaker. However, the deictic center seems to be limited to the speaker and does not seem to be extended to the addressee with the verbs in (25).

(25) mǫ́ŋ- 'to pass through', cʊ́ʊ́t- 'to pass through (illegally and secretly)', kwą́y- 'to cross', tɪ́l- 'to cross', sɪ́ɪ́r- 'to jump', mʊʊ́t- to move around', lǫ́ŋ- (hither)/lą́ŋ- (thither) 'to climb', lɛ́k- 'to approach', tą́mbʊlɪɪ́l- 'to float', mʊkʊrʊkʊʊrʊ- 'to roll', są́rɛp- 'to march', kʊy- 'to crawl', tɛrɛ́r- 'to fly', nąm- 'to carry', wǫ́ǫ́n- 'to move an animal', tǫ́ǫ́r- 'to push', wʊnʊ́k- 'to push', rǫ́ǫ́t- 'to stare', lʊ́m- 'to listen', rǫ́tǫ́t- 'to stare', sɪ́l- 'to write', kʊʊrʊ- 'to announce'

The deictic center can also be projected from the speaker to a character in a story or the speaker who is reporting in reported speech. My data also contains one verb for which the deictic center is the agent (*cʊ́t-* 'to uproot, pull'), and one verb for which the deictic center is interpreted as the speaker or the addressee at some times and as the agent at other times (*pʊ́ʊ́k-* 'to sweep'). It is not clear what governs the different interpretations of the deictic center. The present study hereafter does not handle this issue.

### 3.1 *-u/-ø* 'hither' vs. *-to/-ta* 'thither'

This hither suffix is zero if the subject is the third person, and *-u* elsewhere (Cuyers 1975a: 70).[12] Vowel harmony seems to govern the distributions of the allomorph of the thither suffix for the third person subject, *-to* and *-ta*: *-to* is used after a back stem-final vowel, and *-ta* is used after a front or central stem-final vowel.[13] However, there are a small number of cases to which these rules do not apply.

Almost all verbs that take these suffixes are verbs of translational motion, which may be self-agentive or non-agentive motion or agentive motion. However, there is one example where these suffixes use a non-motion verb to show contrast in the deixis of the motion of the object that moves in the event (specifically, the 'write' example (30)). Nevertheless, whenever these suffixes are used, the occurrence of translational motion in the event is always implied.

These suffixes only have deictic meanings, and express the direction of the figure object with respect to the deictic center.[14] The figure object is the subject of an intransitive verb in the case of self-agentive or non-agentive motion, and is the object of a transitive verb in the case of agentive motion.

The most common pattern of verbs that take these suffixes is that suffixed verb forms contrast

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[12] The present study has only examples with third person subject due to the lack of data.

[13] One of my informants states that the difference between *-to* and *-ta* may be dialectal at least in some cases (e.g. *kʊ-sap-to/kʊ-sap-ta* DIST.PAST.3-tiptoe-?) like the difference between some words with *o* and their equivalents with *a* (see footnote 8). This needs further investigation.

[14] There are also verbs whose forms with the thither suffix have a slightly different function. The verb for 'to look' with this suffix has to be used when there is no object expressed, unlike its unsuffixed form, which is used when the object is expressed.

(i) kʊ-kás-ta nɛɛtǫ́ (am lakám).
DIST.PAST.3-look-? 3SG.NOM frommountain
'S/he looked (from the mountain).'

(ii) kʊ-kás nɛɛtǫ́ lakám.
DIST.PAST.3-look 3SG.NOM mountain
'S/he looked at the mountain.'

with each other in deixis, and there are no deictically neutral verb forms. This pattern is exemplified by (26)-(30).

(26) (b) kwẹ-sụụ-ø/(c) kwẹ-sṵṵ-tọ ntṵṵtẹk ám tạráạca.
DIST.PAST.3-fall-hither/DIST.PAST.3-fall-thither banana ABL bridge
'The banana fell from the bridge.'[15]

(27) (b) kụ-tṵṵr-ø/(c) kụ-tṵṵr-tạ mẹ́ẹ́sẹt.
DIST.PAST.3-push-hither/DIST.PAST.3-push-thither table
'S/he pushed the table.'

(28) (b) kụ-wụnụk-ø/(c) kụ-wụnṵk-tọ mẹ́ẹ́sẹt.
DIST.PAST.3-push-hither/DIST.PAST.3-push-thither table
'S/he pushed the table.' (maybe accidentally)

(29) (b) kụ-wṵrṵsọn-ø pạ́rọọwẹ̀t kụ-cṵ́ sụkṵ́ṵ́lụ.
DIST.PAST.3-send-hither letter CON-come school
'S/he sent a letter to school.'
(c) kụ-wṵ́rṵ́sạn-tạ́ pạ́rọọwẹ̀t kụ-wṵ́ sụkṵ́ṵ́lụ.
DIST.PAST.3-send-thither letter CON-go school
'S/he sent a letter to school.'

(30) (b) kụ-sɨ́l-ø pạ́rọọwẹ̀t kụ-cṵ́ sụkṵ́ṵ́lụ.
DIST.PAST.3-write-hither letter CON-come school
(c) kụ-sɨ́l-tọ pạ́rọọwẹ̀t kụ-wṵ́ sụkṵ́ṵ́lụ.
DIST.PAST.3-write-thither letter CON-go school
'S/he wrote a letter to school.'[16]

There are also a small number of verbs that can take both suffixes for the contrastive deictic notions and have another suffixed form that is deictically neutral, as in (31) and (32). However, although the suffixes in the deictically neutral forms seem to express deictic-neutrality, such use of these suffixes seems to be quite restricted.

(31) (a) kụ-pṵ́ṵ́-c/(b) kụ-pṵ́ṵ́k-ø/(c) kụ-pṵ́k-tọ tụttwṵ́k.
DIST.PAST.3-sweep-NEUT/DIST.PAST.3-sweep-hither/ rubbish
DIST.PAST.3-sweep-thither
'S/he swept rubbish' (DC: SP/AD or agent)

(32) (a) kạ́ạ́-pṵ́n-tẹ/(b) kạ́ạ́-pṵ́n-ø/(c) kạ́ạ́-pṵ́n-tọ ŋẹẹŋṵ́.
IMMED.PAST-arrive-NEUT/DIST.PAST.3-arrive-hither/ Ngeenge
DIST.PAST.3-arrive-thither
'S/he arrived in Ngeenge.'

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[15] The form of this verb with the applicative suffix complex *-t-e* (section 3.2.2), *kwẹ-sṵṵ-tẹ*, which is deictically neutral, is incompatible with the preposition *ạm*.

[16] In (29b) and (30b), *kụ-wṵ́rṵ́sạn-tạ́* and *kụ-sɨ́l-tọ* cannot be used, respectively. On the other hand, in (29c) and (30c), *kụ-wṵrṵsọn-ø* and *kụ-sɨ́l-ø* cannot be used, respectively.

There is also one set of examples like (33) where a form with the thither suffix contrasts in deixis with two unsuffixed forms that have different tones, one of which is deictically neutral and the other of which expresses 'hither'.

(33) (a) kụ-wọ́n/(b) kù-wọn-ø/(c) kụ-wọ́ǫ́n-tạ́ tǫ́ǫ́kạ́.
DIST.PAST.3-move.animals/DIST.PAST.3-move.animals-hither/ cow.PL
DIST.PAST.3-move.animals-thither
'S/he moved cows somewhere.'

Verbs with this pair of deictic suffix almost always seem to follow one of the above patterns (but see (52a) in section 3.2.1 for an apparent counterexample).[17]

### 3.2 *-n* 'hither' vs. *-t* 'thither'

As mentioned at the beginning of section 3, this pair of deictic suffixes always occur with the suffix *-ǫǫ́/-ąą́*, which is used for the ALONG vector, with the suffix *-ę́*, which is used for the VIA vector, the FROM vector, or the instrumental or comitative relation, or with both suffixes. Thus, they are preceded by the suffix *-ǫǫ́/-ąą́*, to form the suffix complex, *-ǫǫ-n/-ąą-n* or *-ǫǫ-t/-ąą-t*, are followed by the suffix *-ę́* to form the suffix complex, *-n(w)-ę́* or *-t-ę́*, or are both preceded by *-ǫǫ́/-ąą́* and followed by *-ę́* to form the suffix complex, *-ǫǫ-nnw-ę́/-ąą-nnw-ę́* or *-ǫǫ-t-ę́/-ąą-t-ę́*. The hither suffix takes the form of *-nw* after a stem ending in *m* and the form of *-nnw* after a stem ending in *n*, and is *-n* elsewhere.

Section 3.2.1, Section 3.2.2, and Section 3.2.3 describe the use of the suffix complexes, *-ǫǫ-n/-ąą-n* and *-ǫǫ-t/-ąą-t*, that of the suffix complexes, *-n(w)-ę́* and *-t-ę́*, and that of the suffix complexes, *-ǫǫ-nnw-ę́/-ąą-nnw-ę́* and *-ǫǫ-t-ę́/-ąą-t-ę́*, respectively.

#### 3.2.1 'along': *-ǫǫ-n/-ąą-n* 'hither' vs. *-ǫǫ-t/-ąą-t* 'thither'

The ALONG vector suffix is always followed by the deictic suffix *-n* 'hither' or *-t* 'thither'. This suffix has the following allomorphs: *-ą́, -ąą́, -ǫ́, -ǫǫ́, -nǫǫ́, -tǫǫ́*. The first consonants of the last two allomorphs, *-n* and *-t*, do not convey any deictic information because both can occur in both the ALONG-hither and ALONG-thither suffix complexes. The forms of the suffix complexes with the deictic suffixes and the allomorphs of this pair of suffixes are shown in (34).

(34) 'hither': *-ą́-n, -ąą́-n, -ǫ́-n, -ǫǫ́-n, -nǫǫ́-n, -tǫǫ́-n*
'thither': *-ą́-t, -ąą́-t, -ǫ́-t, -ǫǫ́-t, -nąą́-t, -tąą́-t*

Because the most common allomorphs used with the deictic suffixes *-n* and *-t* are *-ǫǫ́* and *-ąą́*, the most common combinations of them are *-ǫǫ-n* and *-ąą-t*, respectively. The choice of the

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[17] There are also three verbs whose forms with *-tǫ́/-tą́* (*kụ-wíŕ-tą́* [DIST.PAST.3-throw-NEUT?], *kụ-síŕíŕ-tą̀* [DIST.PAST.3-throw-NEUT?], *kụ-téŕęŕ-tą̀* [DIST.PAST.3-fly-NEUT?]) one of my informants says are deictically neutral, and whose thither forms do not exist. However, because I have not been able to check whether they can be used for motion toward the deictic center, and such examples are so few, I do not regard it as deictically neutral in the present study.

allomorphs with *ạ* or those with *ọ* appears to be based on their vowel harmony with the vowel in the stem in some cases, but there are many words that do not follow it. Thus, these suffix complexes are represented as *-ọọ-n/-ạạ-n* and *-ọọ-t/-ạạ-t*. Some verbs change their vowel qualities when accompanied by one of these suffixes.

The suffix complexes essentially express the vector 'along (a path)' as well as the deictic path components (though they may express the aspectual notion of repetition or continuation in addition to deixis, as discussed later). Most verbs that these suffix complexes attach to are motion verbs, translational motion verbs in particular, which express translational motion as the main event, but they can also attach to non-motion verbs, which do not express translational motion as the main event. When these suffix complexes attach to non-motion verbs, translational motion is expressed as associated motion (Koch 1984, Wilkins 1991), and such verbs with these suffix complexes mean 'to do the action indicated by the verb or undergo the state change indicated by the verb as one moves hither/thither'.

When translational motion is the main event, the figure object is usually the subject of an intransitive verb (or sometimes a transitive verb) in the case of self-agentive or non-agentive motion, and is the object of a transitive verb in the case of agentive motion.[18] However, when translational motion is not the main event but is expressed as associated motion, the figure object in it is the subject of the verb regardless of the transitivity of the verb.

When the verb is a translational motion verb, which conveys motion along a path by definition as its semantic component, either of these suffix complexes seems to carry only the deictic information. In most cases, the verb forms with the suffix complexes contrast not only with each other but also with the deictically neutral verb form, which usually does not have either of these suffix complexes. Hence, the three verb forms show the deictic distinction between (a) deictic-neutral motion, (b) motion hither, and (c) motion thither. (35)-(41) are examples of the three types of forms of non-agentive or self-agentive motion verbs. (42) and (43) are examples of the three types of forms of agentive motion verbs. (There are cases where the vowel quality of the verb changes when one of the suffixes is attached.)

(35) (a) kụ-mwẹy/(b) kụ-mwẹy-ọọ-n/(c) kụ-mwẹy-ọ́-t (kọ́).
DIST.PAST.3-escape/DIST.PAST.3-escape-along-hither/ house
DIST.PAST.3-escape-along-thither
'S/he escaped (to the house).'

(36) (a) kụ-tụr/(b) kụ-tọr-ọ-n/(c) kụ-tụrt-ạ́ạ́-t (kọ́).
DIST.PAST.3-escape/DIST.PAST.3-escape-along-hither/ house
DIST.PAST.3-escape-along-thither
'S/he escaped (to the house).'

[18] The figure object is the subject of a transitive verb when the verb is 'to follow' or 'to chase', which is used for an event where the figure object moves after the ground object.

(37) (a) kụ-nǫ́k/(b) kụụ-nǫ́ǫ́k-nǫǫ-n/(c) kụụ-nạạk-tą́ą́-t (kǫ́)
DIST.PAST.3-approach/DIST.PAST.3-approach-along-hither/ house
DIST.PAST.3-approach-along-thither
(kụcạké/ạm wọk).
from forest
'S/he approached (the house) (from the forest).'

(38) (a) kụ-tụ́ytụ́y/(b) kụ-tụ́ytụ́y-ǫǫ-n/(c) kụ-tụ́ytụy-ǫ́-t
DIST.PAST.3-move.back.slowly/DIST.PAST.3-move.back.slowly-along-hither/
DIST.PAST.3-move.back.slowly-along-thither
(ạkáy ą́rạn).
up.to road
'S/he moved backward slowly because of fear (up to the road).'[19]

(39) (a) kú-kkwạt/(b) kụ-kkwạt-ǫ́ǫ́-n/(c) kụ-kkwạt-ą́ą́-t
DIST.PAST.3-chase/DIST.PAST.3-chase-along-hither/
DIST.PAST.3-chase-along-thither
cẹẹlíímọ cẹẹpẹt.
Ceeliimo Ceepet
'Ceeliimo chased Ceepet.'

(40) (a) kụụ-nąm/(b) kụụ-nǫ́ǫ́-n/(c) kụụ-nąąm-ą́ą́-t cẹẹlíímọ cẹẹpẹt.
DIST.PAST.3-follow/DIST.PAST.3-follow-along-hither/ Ceeliimo Ceepet
DIST.PAST.3-follow-along-thither
'Ceeliimo followed Ceepet.'

(41) (a) kụụ-mú́ú́t/(b) kụ-mụụt-nǫ́ǫ́-n/(c) kụ-mụụt-nąą́-t kǫ́t.
DIST.PAST.3-move.around/DIST.PAST.3-move.around-along-hither/ house
DIST.PAST.3-move.around-along-thither
'S/he moved around the house.'[20]

(42) (a) kụ-kạsạn/(b) kụ-kạsą́n-ąą-n/(c) kụ-kạsạn-ą́ą́-t kwẹnịk.
DIST.PAST.3-carry.on.back/DIST.PAST.3-carry.on.back-along-hither/ firewood
DIST.PAST.3-carry.on.back-along-thither
'S/he carried firewood on his/her back.'

(43) (a) kụụ-nụm/(b) kụụ-nú́m-nǫǫ-n/(c) kụụ-nụm-nąą́-t sąąlịyąąntẹ-tạp kẹẹtị́t.
DIST.PAST.3-remove/DIST.PAST.3-remove-along-hither/ branch-POSS tree
DIST.PAST.3-remove-along-thither
'S/he removed a branch off the tree.'

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[19] As indicated in the gloss, this verb expresses not only the path of motion but also the manner and cause of motion.

[20] (41a) may be either a translational motion event where the figure object moves around the ground object only one time or a self-contained motion where the figure object moves around the ground object multiple times. (41b) and (41c), on the other hand, express mean a translational motion event where the figure moves around the ground object and moves toward the deictic center and away from the deictic center, respectively.

The verb in (41a), *kụụ-mú́ú́t*, can be replaced by *kụ-mụụt-ǫ́ǫ́-t*, which seems to have the ALONG-thither suffix complex but is neutral as to deixis. This is the only one example in my data where a verb with ALONG-thither suffix complex is deictically neutral.

These suffix complexes can accompany manner of motion verbs to express motion directed hither or thither in the manner, as in (44)-(46). However, it is not clear whether such verbs when used without either suffix complex are verbs of translational motion along a path with any directionality. For example, (44a) may be used for swimming in one place without change in location or swimming along a river. On the other hand, manner verbs with the ALONG-deictic suffix complexes always express translational motion.

(44) (a) kụ-pụr/(b) kụ-pụr-ǫ́ǫ́-n/(c) ku-pụr-ǫ-t pụŋpụŋíṭ.
DIST.PAST.3-beat/DIST.PAST.3-beat-along-hither/ swimming
DIST.PAST.3-beat-along-thither
'S/he swam (*lit.* beat swimming).'

(45) (a) kụ-mwạl/(b) kụ-mwą́l-ǫǫ-n/(c) kụ-mwą́l-ąą-t (ąkáy kǫ́).
DIST.PAST.3-limp/DIST.PAST.3-limp-along-hither/ up.to house
DIST.PAST.3-limp-along-thither
'S/he limped (up to the house).'

(46) (a) kụ-ląpą́t/(b) kụ-ląpąt-ǫǫ-n/(c) kụ-ląpąt-ą́ą́-t
DIST.PAST.3-run.long.distance/DIST.PAST.3-run.long.distance-along-hither/
DIST.PAST.3-run.long.distance-along-thither
(kéŋạ).
Kenya
'S/he ran a long distance (to Kenya).'

When the verb is not a translational motion verb, its form with either of the suffix complexes implies the occurrence of translational motion in the event. In other words, these suffix complexes cause events expressed with such non-translational motion verbs (an action or state-change) (associated motion) to include translational motion in the event. Thus, the non-motion event is associated with the translational motion. When the occurrence of translational motion is entailed this way, it is always non-agentive or self-contained motion, where the figure object is the referent of the subject noun phrase, regardless of the transitivity of the verb.

Verb forms with these suffix complexes, which are used for events where translational motion occurs, are in opposition with each other in deixis. However, they are not in opposition with forms without either suffix complex, which are used for events to which the occurrence of translational motion is irrelevant. Of the sets of examples in (47)-(51) below, the (a) examples have nothing to do with the occurrence of translational motion. On the other hand, in the (b) and (c) examples, the event expressed by the verb takes place while the figure object (the referent of the subject noun phrase) moves toward the deictic center and away from the deictic center, respectively. Note that in (b) and (c), the figure's motion takes place relative to the deictic center, but the event expressed by the verb is independent of the location of the deictic center. For example, in (49), s/he moves toward or away from the deictic center, but his/her perception has nothing to do with the deictic center – whether or not s/he looks at the speaker or addressee is not an issue. Thus, events expressed by non-translational motion verbs with these suffixes can be regarded as associated motion.

(47) (a) kụ-pẹ́l/(b) kụ-pẹ́l-ọ-n/(c) kù-pẹl-ạạ-t cẹ́mtáy tạ́ạ́rịt.
DIST.PAST.3-burn/DIST.PAST.3-burn-along-hither/ Cemtay candle
DIST.PAST.3-burn-along-thither
(a): 'Cemtay lit the candle.'
(b)/(c): 'Cemtay lit the candle as she moved (b) toward the DC/(c) away from the DC.'

(48) (a) kụ-ɲẹ́ẹ́r/(b) kụ-ɲẹ́ẹ́r-nọọ-n/(c) kụ-ɲẹ́ẹ́r-nạạ-t.
DIST.PAST.3-get.angry/DIST.PAST.3-get.angry-along-hither/
DIST.PAST.3-get.angry-along-thither
(a): 'S/he got angry.'
(b)/(c): 'S/he got angry repeatedly (or was angry) as s/he moved (b) toward the DC/(c) away from the DC.'

(49) (a) kụ-kạs/(b) kụ-kạs-tǫ́ǫ́-n/(c) ku-kạs-ą́ą́-t lạkạ́m.
DIST.PAST.3-look/DIST.PAST.3-look-along-hither/ mountain
DIST.PAST.3-look-along-thither
(a): 'S/he looked at the mountain.'
(b)/(c): 'S/he looked at the mountain as s/he moved (b) toward the DC/(c) away from the DC.'

(50) (a) kú-rǫ́tǫ̀t/(b) kụụ-rǫ́ǫ́t-ọọ-n/(c) kụụ-rǫ́ǫ́t-ạạ-t lẹ́kwẹ́t.
DIST.PAST.3-stare/DIST.PAST.3-stare-along-hither/ child
DIST.PAST.3-stare-along-thither
(a): 'S/he stared at the child.'
(b)/(c): 'S/he stared at the child as s/he moved (b) toward the DC/(c) away from the DC.'

(51) (a) kụ-lúm-tạ/(b) kụ-lụm-tǫ́ǫ́-n/(c) kụ-lụm-tą́ą́-t rą́dịyẹ̀t.
DIST.PAST.3-listen-NEUT/DIST.PAST.3-listen-along-hither/ radio
DIST.PAST.3-listen-along-thither
(a): 'S/he listened to the radio.'
(b)/(c): 'S/he listened to the radio as s/he moved (b) toward the DC/(c) away from the DC.'

In some cases, the suffix complexes may express repetition or continuation of an action, rather than the ALONG vector, in addition to the deictic information, as in (52)-(54). This is perhaps because the events expressed by a verb with one of the suffix complexes can last longer than those expressed by a verb without either of them. In (52a), *kụ-pụką́k-tẹ* seems to be a dialectal variation of *kụ-pụkąk-tạ*, which contains the thither suffix in section 3.1 but is deictically neutral. It is not clear what the suffixes in (53a) and (54a) are.

(52) (a) kụ-pụkąk-tẹ/(b) kụ-pụkąk-nọọ-n/(c) kụ-pụkąk-tạạ-t cẹẹpẹ́t sịịmụt.
DIST.PAST.3-leave-NEUT?/DIST.PAST.3-leave-along-hither/ Ceepet phone
DIST.PAST.3-leave-along-thither
(a): 'Ceepet left the phone.'
(b)/(c): 'Ceepet kept on leaving the phone multiple times (b) in a place that was in the direction of the DC/(c) in a place that was not in the direction of the DC.'

(53) (a) kẹẹ-sṵt-tyọ/(b) kẹẹ-sṵṵt-ọọ-n/(c) kẹẹ-sṵṵt-ạ-t pẹ́ẹ́nịt.
DIST.PAST.3-drop-?/DIST.PAST.3-drop-along-hither/ pen
DIST.PAST.3-drop-along-thither
(a): 'The pen dropped.'
(b)/(c): 'The pen kept on dropping over and over (b) toward the DC/(c) in direction other than the DC.'

(54) (a) kṵṵ-nậật-ẹ/(b) kṵṵ-nọ́ọ́k-nọọ-n/(c) kṵṵ-nậật-ạạ-t.
DIST.PAST.3-move.a.little-?/DIST.PAST.3-move.a.little-along-hither/
DIST.PAST.3-move.a.little-along-thither
(a): 'S/he moved a little.'
(b)/(c): 'S/he kept on moving a little (b) toward the DC/(c) in direction other than the DC.'

There is only one example (55) that do not follow the patterns discussed above. It seems to be extremely rare, and far from a systematic counterexample. The verb *lẹẹkutẹ́* 'to approach' does not have a hither form (unlike the other verb of approaching *nọọkṵ*).

(55) (a) kṵ-lẹ́ktẹ/(b) kṵ-lẹ́ẹ́kt-ọọ-n.
DIST.PAST.3-approach/DIST.PAST.3-approach-along-hither
'S/he approached.'

Thus, the suffix complexes, *-ọọ-n/-ạạ-n* and *-ọọ-t/-ạạ-t*, are almost always semantically in opposition with each other.

### 3.2.2 'via/from/with ...' : *-n-ẹ* 'hither' vs. *-t-ẹ* 'thither'

The deictic suffixes, *-n* 'hither' and *-t* 'thither', can be followed by the suffix *-ẹ*, which is used for the vector VIA, the vector FROM, or the instrumental or comitative relation. Thus, the suffix complexes, *-n(w)-ẹ* and *-t-ẹ*, express deictic information as well as one of these notions. They are described in sections 3.2.2.1-3.2.2.3.

#### 3.2.2.1 'via' : *-n(w)-ẹ* 'hither' vs. *-t-ẹ* 'thither'

The combination of the pair of deictic suffixes, *-n* 'hither' and *-t* 'thither', and the suffix *-ẹ* as the VIA suffix, express the VIA concept, 'by way of/across/over/through (a ground object)', as well as the deictic information. The ground object may be a point, a plane, or a volume.

The suffix *-ẹ* is used as the VIA suffix when the verb also expresses the VIA vector. Hence, the verb forms with these suffix complexes, which contrast with each other, can also show contrast with that without either of them, as in (56)-(58), where the deictic-neutral form in (a) is not marked with either suffix and thus deictic-neutral, the hither form in (b) is marked with the hither suffix, and the thither form in (c) is marked with the thither suffix.[21] As in the previous

[21] When this suffix complexes are used for these senses, the deictic center seems to be usually the speaker, and the location of the addressee seems to be irrelevant (except (60b), where the deictic center can be either the speaker or addressee).

suffix, some verbs change their vowel quality when used with these suffix complexes. My data contain only self-agentive or non-agentive motion examples, and lack agentive motion examples, but it is not clear whether this is systematic or only coincidental.

(56) (a) kụ-cụt/(b) kụ-ccụụt-n-ẹ/(c) kụ-cụt-t-ẹ́ tụttyo.
DIST.PAST.3-pass.through/DIST.PAST.3-pass.through-hither-via/ fence
DIST.PAST.3-pass.through-thither-via
'S/he passed through the fence.'

(57) (a) kụ-sḭḭr/(b) kù-sḭḭr-n-ẹ́/(c) kụ-sḭḭr-t-ẹ tụttyą́.
DIST.PAST.3-jump/DIST.PAST.3-jump-hither-via/ fence
DIST.PAST.3-jump-thither-via
'S/he jumped over the fence.'[22]

(58) (a) kụ-kkwạy/(b) kụ-kkwǫ́ụ-n-ẹ/(c) kụ-kkwą́y-t-ẹ kụsą́ą́wą.
DIST.PAST.3-cross/DIST.PAST.3-cross-hither-via/ field
DIST.PAST.3-cross-thither-via
'S/he crossed the field.'[23]

(59) (a) kụ-lạn/(b) kụ-lǫ́ŋ-n-ẹ/(c) kụ-lą́ŋ-t-ẹ tǫǫtẹ́.
DIST.PAST.3-climb/DIST.PAST.3-climb-hither-via/ wall
DIST.PAST.3-climb-thither-via
'S/he climbed the wall.'[24]

There are three verbs that deviate only slightly from the above pattern. These seem to be due to idiosyncrasies of the verbs, rather than forming any systematic pattern.

The verb *pun-* 'to cross, pass through, pass by' can be accompanied by either of these suffix complexes, and its forms with the suffixes contrast with each other, but its form without either suffix cannot be used as a deictically neutral form.[25] An example is in (60).

(60) (b) kạ-pǘn-nw-ẹ/(c) kà-pụn-t-ẹ
IMMED.PAST.3-cross-via-hither/IMMED.PAST.3-cross-via-thither
kụsą́ą́wą/wǫk/kǫ-ḭ́n.
field/forest/house-that
'S/he crossed the open field/passed through the forest/passed by that house.'

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[22] In (57c), *kụ-sḭḭr-t-ẹ* can be replaced by *kụ-sḭḭr-tǫ* without any difference in meaning. (57a) differs from (57b) and (57c) (and also *kụ-sḭḭr-tǫ*) in another respect – in the former, his/her jump may occur one or more times, whereas in the latter, it occurs only one time.

[23] In this and the next examples, the verbs make a slight change of their (b) forms.

[24] Note that as mentioned in section 2.2, this verb changes its form depending on the deictic component of the path.

[25] There are neutral forms of *pun-* in the sense of 'to cross' with a suffix whose meaning is not clear, *kạ-pun-tẹẹ-n-ẹ́* and *kà-pụn-nee-n-ẹ́*. However, they are unlikely to be in opposition with (60b) and (60c), because there are other hither and thither forms with these suffixes, *ka-pun-tǫǫ́-nw-ẹ* and *ka-pun-tǫǫ́-t-ẹ*, respectively, which my consultants think are in opposition with the compex neutral forms.

Another verb that does not follow the above pattern is *moŋ* 'to pass through'. This verb can also be used with either suffix complex, and their suffixed forms are in deictic opposition with each other. However, its unsuffixed form *moŋ* is used not deictic-neutrally but as a hither form just like in *ku-moŋ-ne* in (61b1).

(61) (b1) kụ-mǫ́ŋ-n-ẹ́/(b2) kụ-mǫ́ŋ/(c) kụ-mǫ́ŋ-t-ẹ́
DIST.PAST.3-pass.through-via-hither/DIST.PAST.3-pass.through/
DIST.PAST.3-pass.through-via-thither
kụrkẹ́t/kẹẹtǫ́t/kúpastít.
door/gate/small.opening
'S/he passed through the door/gate/the small opening (e.g. in the fence).'

A third verb is *tɨ́l* 'to cross', whose hither form is marked not with any suffix but a change in vowel, as in (62).

(62) (a) kụ-tɨ́l/(b) kụ-tʉ́l/(c) kụ-tɨ́l-t-ẹ́ kụṣą́wą.
DIST.PAST.3-cross/DIST.PAST.3-cross.hither/ field
DIST.PAST.3-cross-via-thither
'S/he crossed the field.'

### 3.2.2.2 'from': *-n(w)-ẹ* 'hither' vs. *-t-ẹ* 'thither'

The ablative suffix *-ẹ* is an applicative suffix, and is always preceded by either the hither or thither suffix to form the suffix complexes, *-n(w)-ẹ* or *-t-ẹ*. The hither suffix complex is *-nw-ẹ* after the stem ending in *n*, *m*, or *r* (sometimes also *s*). This pair of suffix complexes express the vector FROM in addition to the deictic information, namely 'hither from (a ground object)' and 'thither from (a ground object)'.

(63a) and (63b) illustrate the difference between the non-applicative construction with the ablative-prepositional phrase and the applicative construction with the ablative suffix *-ẹ*. In the non-applicative example (63a), the verb is not marked with any suffix, and the noun phrase for the source *kapən* 'cave' is preceded by the ablative preposition am. On the other hand, in the applicative example (63b), the verb is marked with the applicative suffix *-ẹ*, and the source noun phrase *kapən* occurs without the preposition am. Notice that (63a), which does not have any deictic information, is deictically neutral, whereas (63b) and (63c) convey deictic information with the suffixes.[26] Note that young speakers and careless or less conservative speakers may use the preposition am in (63b) and (63c), though older speakers and careful or

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[26] If the verb is a deictic verb, the construction with one of the suffix complexes and that without either suffix complexes can have the same meaning, as in the pairs of examples in (i) and (ii).

(i) (a) kụ-cǫ́ ąm kąpǫ́n.
DIST.PAST.3-come from cave
(b) kụ-cǫ́-n-ẹ kąpǫ́n.
DIST.PAST.3-come-hither-from cave
'S/he came from the cave.'

(ii) (a) kụ-wǫ ąm kąpǫ́n.
DIST.PAST.3-go from cave
(b) kụ-wẹ́ẹ́-t-ẹ́ kąpǫ́n.
DIST.PAST.3-go-thither-from cave
'S/he went from the cave.'

more conservative speakers consider this use of *am* incorrect.

(63) (a) kʊ̣ʊ̣-tą́mbʊ̣lḭḭl cʊ́ʊ́pe̯t a̯m kạpǫ́n.
DIST.PAST.3-float bottle from cave
(b) kʊ̣ʊ̣-tą́mbʊ̣lḭḭl-n-ę̀/(c) kʊ̣ʊ̣-tą́mbʊ̣lḭḭl-t-ę̀ cʊ́ʊ́pe̯t kạpǫ́n.
DIST.PAST.3-float-hither-from/DIST.PAST.3-float-thither-from bottle cave
'The bottle floated out of the cave.'

Therefore, the verb forms with *-n(w)-e̯* and *-t-e̯* show contrast with each other because they do not use the preposition *a̯m* before the source noun phrase, but these verb forms do not show contrast with the deictic-neutral verb form, which requires *a̯m* (or sometimes *kʊ̣cạ́kę́* '(starting) from (one place to another place)') before the source noun phrase. (63b) and (63c) are parallel with each other, but (63a) is structurally different from them.

Other examples are shown in (64)-(74), where only hither and thither examples are presented, and deictically neutral examples, which are structurally different, are not. Examples of self-agentive or non-agentive motion are in (64)-(68), and examples of agentive motion are in (69)-(74). Some verbs change their forms when followed by the suffix complexes. When the suffix *-n* attaches to a verb stem ending in *t* or *n*, the epenthetic vowel *-ʊ̣* may be inserted. When the suffix *-t* attaches to a verb stem ending in *t*, the latter t is dropped.

(64) (b) kę̣ę̣-mʊ̣kʊ̣rʊ̣kʊ̣ʊ̣rʊ̣-n-ę́/(c) kę̣ę̣-mʊ̣kʊ̣rʊ̣kʊ̣ʊ̣rʊ̣-t-ę́ pḭḭre̯t mę̣ę̣sà/lạką́m.
DIST.PAST.3-roll-hither-from/DIST.PAST.3-roll-thither-from ball table/hill
'The ball rolled off the table/down the hill.'

(65) (b) kʊ̣-cʊ́ʊ́t-n-ę̣/(c) kʊ̣-cʊ́t-t-ę̣ kʊ̣są́ą́wạ koŋŋasíís.
DIST.PAST.3-cross-hither-from/ field east
DIST.PAST.3-cross-thither-from
'S/he crossed the field from the east.'

(66) (b) kạ-lǫ́ŋ-n-ę̣/(c) kạ-lą́ŋ-t-ę́ kạpǫ́ń.
IMMED.PAST-climb.hither-hither-from/ cave
IMMED.PAST-climb.thither-thither-from
'S/he climbed upward out of the cave.'

(67) (b) kʊ̣-kǫ́t-n-ę̣ę̣-ké̯y/(c) kʊ̣-ká̯t-t-ę̣ę̣-ké̯y kḛ́ḛ́ŋạ.
DIST.PAST.3-return-hither-from-REFL/ Kenya
DIST.PAST.3-return-thither-from-REFL
'S/he returned from Kenya.'

(68) (b) kʊ̣ʊ̣-wʊ́t-n-ę̣/(c) kʊ́ʊ́-wʊ̣-t-ę̀ mátakèt tạpą́n.
DIST.PAST.3-enter-hither-from/DIST.PAST.3-enter-thither-from car side
'He entered the car from the side.'

(69) (b) kʊ̣ʊ̣-sʊ́wʊ́-n-ę̣/(c) kʊ̣ʊ̣-sʊ́ʊ́-t-ę̣ pḛ́ḛ́nḭt tạrą́ą́cạ.
DIST.PAST.3-drop-hither-from/DIST.PAST.3-drop-thither-from pen bridge
'S/he dropped the pen from the bridge.'

(70) (b) kụ-nąm-nw-ẹ/(c) kụ-nąm-t-ẹ mẹẹsẹt kọ́.
DIST.PAST.3-carry-hither-from/DIST.PAST.3-carry-thither-from table house
'S/he carried the table from the house.'

(71) (b) kụ-kọ́t-n-ẹ/(c) kụ-kąt-t-ẹ́ mẹẹsẹt kọ́.
DIST.PAST.3-return-hither-from/DIST.PAST.3-return-thither-from table house
'S/he returned the table from the inside of the house.'

(72) (b) kụ-yọ́k-n-ẹ/(c) kụ-yọ́k-t-ẹ pą́rọọwẹ̀t sụkṵ́ṵ́lụ.
DIST.PAST.3-send-hither-from/ letter school
DIST.PAST.3-send-thither-from
'S/he sent a letter from school.'

(73) (b) kụ-sịrí̱r-n-ẹ/(c) kụ-sịrí̱r-t-ẹ mpíí̱rẹt kọ́.
DIST.PAST.3-throw-hither-from/DIST.PAST.3-throw-thither-from ball house
'S/he threw a ball from the house.'

(74) (b) kụụ-cṵ́t-ṵ́-n-ẹ/(c) kụụ-cṵ́-t-ẹ są́ą́mịttyą̀ mprạrẹ́n.
DIST.PAST.3-uproot-EP-hither-from/ weed ground
DIST.PAST.3-uproot-EP-thither-from
'S/he uprooted the weed from the ground.'

Like the deictic-ALONG suffix complexes in section 3.2.1, these suffix complexes can be used with verbs that are usually used for non-motion events, as in (75)-(78). (As seen in section 3.2.1, they can express associated motion with the ALONG suffix.) In (75), the action of giving something to someone does not necessarily involve motion in space, but the use of one of the suffix complexes indicates that the thing given moves in relation to the deictic center. In (76), the information is treated as an object that can move in space. In (77), the direction of looking changes, and in (78), the line of sight moves through the window. In all these examples, the motion of the referent of the subject noun phrase is irrelevant.

(75) (b) kṳ̀-kọọn-nw-ẹ́/(c) kụ-kọ́ọ́n-t-ẹ pẹẹkọ́ cọkọ́ọ́nị.
DIST.PAST.3-give-hither-from/DIST.PAST.3-give-thither-from water kitchen
'S/he gave water from the kithen.'

(76) (b) kẹẹ-kụụrụ-n-ẹ́/(c) kẹẹ-kṵ́r-t-ẹ ŋạlẹ́k lạkạm.
DIST.PAST.3-call-hither-from/DIST.PAST.3-call-thither-from information mountain
'S/he announced information from the mountain (*lit.,* called information).'

(77) (b) kụ-kąs-n-ẹ/(c) kụ-kąs-t-ẹ lạkạm.
DIST.PAST.3-look-hither-from/DIST.PAST.3-look-thither-from mountain
'S/he looked away from the mountain.'[27]

(78) (b) kụ-kąs-n-ẹ/(c) kụ-kąs-t-ẹ tíríịsą̀.
DIST.PAST.3-look-hither-from/DIST.PAST.3-look-thither-from window
'S/he looked out/through the window (*lit.,* looked from/via the window).'[28]

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[27] The hither form *kụ-kąs-n-ẹ* both in (77b) and (78b) is interchangeable with *kụ-kąs-nw-ẹ*.

[28] In (78), it is not clear whether the suffix *-ẹ* expresses 'from' or 'via' (specifically, 'through').

As has been shown so far, the suffix complexes, *-n(w)-e* or *-t-e*, make the deictic distinction between 'hither' and 'thither'. However, there are cases where the suffix complex *-t-e* is used in a deictically neutral way, though *-n(w)-e* expresses 'hither'. In such a case, there is no thither form. Examples are in (79)-(83). Note that in these examples with the verbs in (a), the adverb *wuli* 'this way' (section 2.2) can occur to form grammatical sentences.

(79) (a) kụ-tẹrér-t-ẹ/(b) kụ-tẹrér-nw-ẹ tạrɨtét kọ-jní.
DIST.PAST.3-fly-NEUT-from/ bird nest-3SG.POSS
DIST.PAST.3-fly-hither-from
'The bird flew out of the nest.'

(80) (a) kụ-cápạt-ty-ẹ/(b) kụ-cápọw-n-ẹ lạkám tárạt.
DIST.PAST.3-slide-NEUT-from/DIST.PAST.3-slide-hither-from mountain top
'S/he slid from the top of the mountain.'

(81) (a) kụ-sạr-t-ẹẹ-kéy/(b) kụ-sár-n-ẹẹ-kéy kọ́.
DIST.PAST.3-walk.fast-NEUT-from-REFL/ house
DIST.PAST.3-walk.fast-hither-from-REFL
'S/he walked fast from the house.'

(82) (a) kwẹ-súú-t-e(b) kwẹ-súú-n-ẹ ntóótẹk
DIST.PAST.3-fall-NEUT-from/DIST.PAST.3-fall-hither-from banana
mọ́t/mẹẹsạ/tarɑ́ɑ́ca.
head/table/bridge
'The banana fell from the head/table/bridge.'

(83) (a) kụ-kkwá-t-é/(b) kụ-kkwát-n-ẹ cẹẹlíímọ cẹẹpẹt kạpán.
DIST.PAST.3-chase-NEUT-from/ Ceeliimo Ceepet cave
DIST.PAST.3-chase-hither-from
'Ceeliimo chased Ceepet from the cave.'

In these cases, the expressed motion is fast, and the fast speed of the motion seems to neutralize the direction of the motion expressed by the thither suffix. If a figure object moves very fast, it may move past the deictic center, regardless of the direction of the motion. Thus, the question seems to be whether or not the figure object has the potential to terminate its path at the deictic center. Nevertheless, this needs to be further investigated because there is an example like (84) that follows this pattern, but does not involve fast motion.

(84) (a) kụ-sɨ́l-t-é/(b) kụ-sɨ́l-n-ẹ páróọwèt sụkúúlụ.
DIST.PAST.3-write-NEUT-from/ letter school
DIST.PAST.3-write-hither-from
'S/he wrote a letter from school.'

### 3.2.2.3 'with': *-n(w)-e* 'hither' vs. *-t-e* 'thither'

Like the suffix complexes made up of the deictic suffix and the ablative suffix discussed in section 3.2.2.2, these suffix complexes, which have the same forms as them, also contain one of the deictic suffixes and the instrumental-comitative suffix *-e*, which is used as an applicative

suffix. Note that unlike the ablative suffix, whose applicative use is considered to be obligatory, the instrumental-comitative suffix may or may not be used applicatively, and even when it has to be used applicatively, its non-applicative use is likely to be tolerated in some cases, especially when it is preceded by the thither suffix *-t*.[29]

(85) and (86) illustrate the difference between the non-applicative instrumental-comitative construction and the applicative instrumental-comitative construction. In the non-applicative example (85), the instrument is indicated with the prepositional phrase, and the verb is not marked with any suffix. On the other hand, in the applicative examples (86), which cannot use the preposition *ạkọ* before the instrumental noun phrase, the instrument is indicated with the instrumental suffix. Note that (85) does not have any deictic information, whereas the sentences in (86) obligatorily convey deictic information.[30]

(85) kẹẹ-púúk tụtwẹ́k ạkọ sẹrẹ́ẹ́rwẹt.
DIST.PAST.3-sweep rubbish with broom

(86) (b) kẹẹ-púúk-ụ-n-ẹ̀/(c) kẹẹ-púk-t-ẹ tụttwẹ́k sẹrẹ́ẹ́rwẹt.
DIST.PAST.3-sweep-EP-hither-with/ rubbish broom
DIST.PAST.3-sweep-thither-with
'S/he swept rubbish with a broom.'

Other examples are shown in (87)-(89).

(87) (b) kụụ-cút-n-ẹ̀/(c) kụụ-cút-t-ẹ̀ méẹ́sẹt paróọ́wẹt.
DIST.PAST.3-pull-hither-with/DIST.PAST.3-pull-thither-with table rope
'S/he pulled the table using the rope.'

(88) (b) kụ-súṭ-ụ-n-ẹ̀/(c) kụ-sụ-t-ẹ peẹkọ́ cukoompeť.
DIST.PAST.3-bring-EP-hither-with/ water cup
DIST.PAST.3-take-thither-with
'She brought/took water using the cup.'

(89) (b) kụ-kọ́ŋ-n-ẹ/(c) kụ-kọ́ŋ-t-ẹ pííṛẹt/lẹkwẹt/kẹẹtọ́t.
DIST.PAST.3-run-hither-with/DIST.PAST.3-run-thither-with ball/child/stick
'S/he ran with a ball/child/stick.'

An example where the instrumental-comitative suffix *-ẹ* cannot be used as an applicative suffix is illustrated in (90), where *ạkọ* has to be used.

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[29] For example, it is possible to use *ạkọ* in (86c).

[30] The locale suffix *-ẹ* seems to be used as a deictic-neutral, applicative instrumental suffix at least in some cases, for example (i).

(i) kẹẹ-púúc-ẹ tụttwẹ́k sẹrẹ́ẹ́rwẹt.
DIST.PAST.3-sweep-with rubbish broom
'S/he swept rubbish with a broom.'

(90) (a) kụ-lą́ŋ/(b) kụ-lǫ́ŋ-n-ẹ/(c) kụ-lą́ŋ-t-ẹ tǫǫtét ąkǫ pąrǫ́ǫ́wẹt.
DIST.PAST.3-climb/DIST.PAST.3-climb-hither-with/ wall with rope
DIST.PAST.3-climb-thither-with
'S/he climbed the wall with a rope.'

3.2.3 Combinations of three suffixes 'along from/with': *-ǫǫ-nnw-ẹ/-ąą-nnw-ẹ* 'hither' vs. *-ǫǫ-t-ẹ/-ąą-t-ẹ* 'thither'

The along suffix, the deictic suffix, and the ablative or instrumental-comitative suffix can occur together to form a suffix complex: *-ǫǫ-nnw-ẹ/-ąą-nnw-ẹ* or *-ǫǫ-t-ẹ/-ąą-t-ẹ*. Because the ALONG suffix has allomorphic variations, and the hither suffix also does, the suffix complexes can have the forms in (91).

(91) 'hither': *-ą-nnw-ẹ, -ąą-nnw-ẹ, -ǫ-nnw-ẹ, -ǫǫ-nnw-ẹ, -nǫǫ-nnw-ẹ, -tǫǫ-nnw-ẹ*
'thither': *-ą-t-ẹ, -ąą-t-ẹ, -ǫ-t-ẹ, -ǫǫ-t-ẹ, -nąą-t-ẹ, -tąą-t-ẹ*

These suffix complexes express the figure object's motion from a source along a path in a direction relative to the deictic center. When a translational motion verb is used for self-agentive or non-agentive motion, the figure object is its subject, and when it is used for agentive motion, the figure object is its object. When a non-motion verb is used with these suffix complexes to express translational motion as associated motion, the figure object is its subject.

When these suffix complexes are used for translational motion events (as main events), verb forms with these suffix complexes usually have the same meanings as forms without the ALONG vector suffix, though the former express the ALONG vector path component explicitly unlike the latter. For example, (92b) and (92c) are almost the same as *kụụ-tą́mbụlịịl-n-ẹ̀* [DIST.PAST.3-float-hither-from] and *kụụ-tą́mbụlịịl-t-ẹ̀* [DIST.PAST.3-float-thither-from] in (63b) and (63c) in section 3.2.2.2, respectively, except that the vector ALONG is explicitly depicted in the former.

(92) (a) kụụ-tą́mbụlịịl cúúpẹt ąm ląką́m tą́rąt.
DIST.PAST.3-float bottle from mountain top
(b) kụụ-tą́mbụlịịl-ǫǫ-nnw-ẹ̀/(c) kụụ-tą́mbụlịịl-ąą-t-ẹ̀ cúúpẹt ląką́m tą́rąt.
DIST.PAST.3-float-along-hither-from/ bottle mountain top
DIST.PAST.3-float-along-thither-from
'The bottle floated from the top of the mountain.'

Note that a sentence with the deictically neutral form of the verb (e.g., (92a)) is not in direct contrast with sentences with verb forms with these suffix complexes. A neutral verb form lacks the ALONG vector suffix, and a neutral form cannot use the applicative construction, and has to use a prepositional phrase.

Most of the things discussed for the ALONG suffix in section 3.2.1 apply to these suffix complexes. Other examples are shown in (93)-(100).

(93) (b) kụ-tú́ytú́y-o̱o̱-nnw-e̱/(c) kụ-tú́ytụ́y-a̱a̱-t-e̱ á́ra̱n.
DIST.PAST.3-move.back.slowly-along-hither-from/ road
DIST.PAST.3-move.back.slowly-along-thither-from
'S/he moved backward slowly from the road.'

(94) (b) kụ-tór-ó-nnw-e̱/(c) kụ-tụ́r-áá́-t-e̱ má́á́pụụsì̱t.
DIST.PAST.3-escape-along-hither-from/ prison
DIST.PAST.3-escape-along-thither-from
'S/he escaped from the prison.'

(95) (b) kụ-mwe̱y-óó-nnw-e̱/(c) kụ-mwe̱y-óó-t-e̱ má́á́pụụsì̱t.
DIST.PAST.3-escape-along-hither-from/ prison
DIST.PAST.3-escape-along-thither-from
'S/he escaped from the prison.'

(96) (b) kù̱-kkwò̱r-o̱o̱-nnw-è̱/(c) kù̱-kkwè̱r-o̱o̱-t-è̱ téé́ta̱ pé́y.
DIST.PAST.3-bring.animal-along-hither-from/ cow fence.enclosure
DIST.PAST.3-bring.animal-along-hither-from
'S/he brought/took the cow from the fence-enclosure.'

(97) (b1) kụ-na̱m-á́-nnw-e̱/(b2) kụ-na̱m-ó-nnw-e̱/(c) kụ-na̱m-áá́-t-e̱ me̱e̱se̱t kó.
DIST.PAST.3-carry-along-hither-from/ table house
DIST.PAST.3-carry-along-thither-from
'S/he carried the table from the house.'

(98) (b) kụ-wórós-o̱-nnw-é/(c) kụ-wórós-a̱-n-t-é pá́ro̱owè̱t sụkú́ụ́lụ.
DIST.PAST.3-send-along-hither-from/ letter school
DIST.PAST.3-send-along-thither-from
'S/he sent a letter from school.'

(99) (b) kụ-se̱rè̱t-o̱-nnw-è̱/(c) kụ-se̱rè̱t-a̱a̱-t-e̱ pá́re̱yo̱nì̱k me̱e̱sa̱.
DIST.PAST.3-scatter-along-hither-from/ beans table
DIST.PAST.3-scatter-along-thither-from
'S/he scattered the beans from table.'

(100) (b) kụụ-nú́m-no̱o̱-nnw-è̱/(c) kụ-nú́m-na̱a̱-t-è̱ sa̱a̱li̱ya̱a̱nte̱t ke̱e̱té̱t.
DIST.PAST.3-remove-along-hither-from/ branch tree
DIST.PAST.3-remove-along-thither-from
'S/he removed a branch off the tree.'

The ALONG-deictic-FROM or ALONG-deictic-instrumental/comitative suffix complex can attach to manner of motion verbs, as in (101)-(106), but it is not clear whether all these verbs are actually transformational motion verbs when they are not accompanied by the ALONG suffix.

(101) (b) kụ-la̱pá́t-a̱a̱-nw-è̱/(c) kụ-la̱pá́t-a̱a̱-t-è̱ kéé́ŋa̱.
DIST.PAST.3-run.long.distance-along-hither-from/ Kenya
DIST.PAST.3-run.long.distance-along-thither-from
'S/he ran a long distance from Kenya.'

(102) (b) kụ-ttíyẹ́n-ọ-nnw-ẹ̀/(c) kụ-ttíyẹ́n-ọọ-t-ẹ̀ kọ́.
DIST.PAST.3-dance-along-hither-from/DIST.PAST.3-dance-along-thither-from house
'S/he danced from the house.'

(103) (b) kụ-sárẹp-ọ-nnw-ẹ̀/(c) kụ-sárẹp-ąą-t-ẹ̀ kwẹ́nụụ-tą̀p sąąŋtą.
DIST.PAST.3-march-along-hither-from/ center-POSS village
DIST.PAST.3-march-along-thither-from
'S/he marched from the center of the village.'

(104) (b) kị-pụr-ọọ-n-wẹ/(c) kị-pụr-ọọ-t-ẹ
V.DST.PAST.3--beat-along-hither-from/V.DST.PAST.3--beat-along-thither-from
pụŋpụŋít ąŋŋọ kẹ́ẹ́l/mątǫ́w.
swimming river lower.side/upper.side
'S/he swam from the lower/upper side of the river (*lit.* beat swimming).'

(105) (b) kụ-tąrtą́rąn-nǫ̀ǫ̀-nw-ẹ̀/(c) kụ-tąrtą́rąn-nǫ̀ǫ̀-t-ẹ̀ kọ́.
DIST.PAST.3-stagger-along-hither-from/ house
DIST.PAST.3-stagger-along-thither-from
'S/he staggered from his/her house.'

(106) (b) kẹẹ-kụy-ọ-nw-ẹ́/(c) kẹẹ-kụy-ǫ́ǫ́-t-ẹ kąpǫ́n.
DIST.PAST.3-crawl-along-hither-from/ cave
DIST.PAST.3-crawl-along-thither-from
'S/he crawled from the cave.'

Like the ALONG vector suffix (section 3.2.1), these suffix complexes, which contain it, can associate non-motion with translational motion. There are no corresponding deictically neutral forms.[31] Examples are shown in (107)-(112).

(107) (b) kù-ɲẹẹr-nǫ̀ǫ̀-nnw-ẹ/(c) kù-ɲẹẹr-nąą̀-t-ẹ kọ́.
DIST.PAST.3-get.angry-along-hither-from/ house
DIST.PAST.3-get.angry-along-thither-from
'S/he was angry (all the way) from the house as s/he moved along (b) toward the DC/(c) in a direction other than the DC.'

(108) (b) kụ-pẹl-ǫ́n-nw-ẹ́/(c) kù-pẹl-ąą-t-e cẹ́mtáy tą́ą́rit ąrą́n.
DIST.PAST.3-burn-along-hither-from/ Cemtay candle road
DIST.PAST.3-burn-along-thither-from
'Cemtay lit the candle as she moved along from the road (b) toward the DC/(c) in a direction other than the DC.'

(109) (b) kụ-yụwẹẹn-ǫ́-n-nw-ẹ/(c) kụ-yụwẹẹn-ǫ́ǫ́-t-ẹ cẹ́mtáy lẹ́ẹ́kọk ąmịk ą́rąn.
DIST.PAST.3-distribute-along-hither-from/ Cemtay children food road
DIST.PAST.3-distribute-along-thither-from
'Cemtay distributed food to the children from the road.'

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[31] Not to mention, an event expressed by a sentence with a verb form without any suffix involves no motion (e.g., *kù-ɲẹẹr kọ́.* "S/he was angry.').

(110) (b) kụ-kạs-tǫ́ǫ́-nnw-ẹ/(c) kụ-kạs-tą́ą́-t-ẹ tą́ą́rịt.
DIST.PAST.3-look-along-hither-with/DIST.PAST.3-look-along-thither-with candle
'S/he looked with the light from the candle as s/he moved along (b) toward the DC/(c) in a direction other than the DC.'

(111) (b) kụ-rǫ́tǫ́t-ǫǫ-nnw-ẹ/(c) kụụ-rǫ́ǫ́t-ąą-t-t-ẹ lẹ́kwẹt kǫ́.
DIST.PAST.3-stare-along-hither-from/ child house
DIST.PAST.3-stare-along-thither-from
'S/he stared at the child from the house as s/he moved along (b) toward the DC/(c) in a direction other than the DC.'

(112) (b) kụ-lụm-tǫ́ǫ́-nnw-ẹ/(c) kụlụm-tą́ą́-t-ẹ rą́dịyẹ̀t ląkąm.
DIST.PAST.3-listen-along-hither-from/ radio mountain
DIST.PAST.3-listen-along-hither-from
'S/he listened to the radio from the mountain as s/he moved along (b) toward the DC/(c) in a direction other than the DC.'

Because the suffix complexes contain the ALONG suffix (section 3.2.1), which can serve as an aspectual marker, they can also be used to express repetition or continuation of an action in addition to the deictic path component and the FROM vector component, as in (113).

(113) (b) kụ-tow-u-nǫ́ǫ́-nnw-ẹ/(c) kụ-tẹt-ǫ́ǫ́-tt-ẹ kụmṇatẹ́ẹ́t cịkǫǫnpẹ́t.
DIST.PAST.3-drip-EP-continuously-hither-from honey cup
DIST.PAST.3-drip-continuously-thither-from
'The honey dripped from the cup continuously.'

However, the pair of suffix complexes sometimes do not make the deictic distinction between hither and thither as discussed so far. As is the case with the deictic-FROM suffix complexes, although *-ǫǫ-nnw-ẹ/-ąą-nnw-ẹ* expresses hither, *-ǫǫ-t-ẹ/-ąą-t-ẹ*, which is usually used for thither, is deictic-neutral. There is no verb form for thither that is in opposition with a verb form with the hither suffix complex *-ǫǫ-nnw-ẹ/-ąą-nnw-ẹ*. Examples are shown in (114)-(116). Note that the adverb *wuli* 'this way' (section 2.2) can occur in the (a) examples to form grammatical sentences.

(114) (a) kụ-są́r-tą́ą́-t-ẹẹ-kẹy/(b) kụ-sǫr-nǫ́ǫ́-nnw-ẹẹ-kẹ́y kǫ́.
DIST.PAST.3-walk.fast-along-NEUT-from/ house
DIST.PAST.3-walk.fast-along-hither-from
'S/he walked fast from the house.'

(115) (a) kụ-kkwạt-ą́ą́-t-ẹ/(b) kụ-kkwạt-ǫ́ǫ́-nnw-ẹ cẹẹlíímǫ cẹẹpẹt kạpǫ́n.
DIST.PAST.3-chase-along-NEUT-from/ Ceeliimo Ceepet cave
DIST.PAST.3-chase-along-hither-from
'Ceeliimo chased Ceepet from the cave.'

(116) (a) kụụ-nąą́m-ąą-t-ę̀/(b) kụụ-nǫ́ǫ́m-ǫ-nnw-ę̀ cẹẹlíímǫ cẹẹpẹt kąpǫ́n.
DIST.PAST.3-follow-along-NEUT-from/ Ceeliimo Ceepet cave
DIST.PAST.3-follow-along-hither-from
'Ceeliimo followed Ceepet from the cave.'

There is an example like (117), where the suffix complex containing *-t* is used in a deictically neutral way when the ALONG suffix is used for the continuation or repetition of an action.

(117) (a) kụ-sụsúúṭ-ąą-tt-ę̀/(b) kụ-sụsúúṭ-nǫǫn-nw-ę̀ cúúpẹt tąráą́ącą.
DIST.PAST.3-sink-continuously-NEUT-from/ bottle bridge
DIST.PAST.3-sink-continuously-hither-from
'The bottle kept sinking from the bridge.'

### 3.3 Other suffixes

There is one other pair of suffixes and another suffix that can express deictic information. As compared to the pairs of suffixes discussed in sections 3.1 and 3.2, they seem to be less productively used, though it may be only because my data are not sufficiently large.

#### 3.3.1 Habitual motion: *-(n)u̱* 'hither' vs. *-tini/-cini/-ti* 'thither'

This pair of suffixes is used for habitual motions as well as their deixis. The hither suffix takes the form of *-u̱* or *-nu̱*, and the thither suffix takes the form of *-tini*, *-cini*, or *-ti*. Examples are shown in (118)-(122).

(118) (b) kụ-cąpǫw-ụ/(c) kụ-cąpǫw-cini.
DIST.PAST.3-slide-hither/DIST.PAST.3-slide-thither
'S/he slid habitually.'

(119) (b) kụ-kụy-ǫ́ǫ́-nụ/(c) kụ-kụy-ǫ́ǫ́-tị.
DIST.PAST.3-crawl-hither/DIST.PAST.3-crawl-thither
'S/he crawled habitually.'

(120) (b) kị-cúúṭ-ụ/(c) kị-cúúṭ-tini tụttyǫ.
V.DST.PAST-pass-hither/V.DST.PAST-pass-thither fence
'S/he passed through the hole in the fence habitually.'

(121) (b) kụ-sḭ́ḭr-ụ/(c) kụ-sḭr-ciní ąnnẹt.
DIST.PAST.3-jump-hither/DIST.PAST.3-jump-thither stream
'S/he jumped over the stream habitually.'

(122) (b) kụ-wǫ́ǫ́n-ú/(c) kụ-wǫ́ǫ́n-tíní tǫ́ǫ́ką ąkáy pḛ́y.
DIST.PAST.3-move.animal-hither/ cows up.to fence.enclosure
DIST.PAST.3-move.animal-thither
'S/he moved cows up to the fence enclosure habitually.'

However, there is one example like (123), where the verb form with the suffix *-u̱* is deictically neutral, though it has a habitual meaning.

(123) kụụ-mú́ú́t-ụ koḍ.
DIST.PAST.3-move.around-NEUT house
'S/he moved around the house habitually.'

### 3.3.2 'to': *-cị* 'thither'

The allative suffix *-cị* (*-kyị* after a stem ending in *k*), which expresses the path vector component TO (and perhaps, the inside path conformation in some cases), is often used for motion away from the deictic center, as in (124)-(128). It does not have its hither counterpart. The deictic center is always the speaker, and the location of the addressee is irrelevant. This suffix serves as an applicative suffix, and when it is used, the goal cannot be marked with the preposition *ạkáy*. Although this suffix is the same in form as the benefactive suffix, which is also used applicatively, none of the examples below has any benefactive meaning.

(124) kụụ-tạ́mbụlịịl-cị cú́ú́pẹt kạpọ́n.
DIST.PAST.3-float-to bottle cave
'The bottle floated into the cave.'

(125) kụ-tẹrẹ́r-cị tạrịtẹ̀t kọŋḭ́.
DIST.PAST.3-fly-to bird house-3SG.POSS
'The bird flew into the nest.'

(126) kụ-lẹ́k-cị/kụ-nọ́k-kyị neẹtọ́ cẹmtáy.
DIST.PAST.3-approach-to/DIST.PAST.3-approach-to 3SG.NOM Cemtay
'S/he approached Cemtay.'

(127) kụ-wụnú́k-kyị/kụ-tọ́ọ́r-cḭ́ mẹ́ẹ́sẹt kọ́.
DIST.PAST.3-push-to/DIST.PAST.3-push-to table house
'S/he pushed the table into the house.'

(128) kụ-yụwẹ́ẹ́n-cḭ́ cẹmtáy ŋạcạrẹt kọ́.
DIST.PAST.3-put-to Cemtay chair house
'Cemtay put the chair in the house.'

For motion that is not directed toward the deictic center, a hither expression like (129) or a deictically neutral expression like (130) is used.

(129) kụụ-tạ́mbụlịịl-ọọn cú́ú́pẹt ạkáy kạpọ́n.
DIST.PAST.3-float-hither bottle up.to cave
'The bottle floated into the cave.'

(130) kụ-tẹrẹ́r-tà tạrịtẹ́t ạkà́y kọ-ŋḭ́.
DIST.PAST.3-float-NEUT bird up.to house-3SG.POSS
'The bird flew into the nest.'

However, there are examples like (131)-(135), where a verb form with the allative suffix is deictically neutral, and expresses the goal.

(131) kụ-rọn-cị ạnṇọ (ạrít).
DIST.PAST.3-float-to river inside
'S/he jumped into the river.'

(132) kụ-mmúrụkùùr-ù-cị rwạạntét mwẹnét ạrít.
DIST.PAST.3-roll-EP-to stone hole inside
'S/he rolled the stone into the hole.'

(133) kụ-kót-cí-kéy kọ́.
DIST.PAST.3-return-to-REFL house
'S/he returned to the house.'

(134) kù-nạm-cị mẹ́ẹ́sẹt kọ́.
DIST.PAST.3-carry-to table house
'S/he carried the table to the house.'

(135) kụ-mwạt-cí/kụ-pụr-cí cẹẹlíímọ cẹẹpẹt ŋ̀ŋ̀n.
DIST.PAST.3-hit-to/DIST.PAST.3-beat-to Ceeliimo Ceepet ground
'Ceeliimo hit/beat Ceepet to the ground.'

## 4. Analysis and Discussion

This section analyzes the data on the deictic suffixes in Kupsapiny, and discusses the issues brought up in section 2.3.

### 4.1 Meanings of the deictic suffixes

Wilkins & Hill (1995) make their claim against the universality of deictic verbs with 'come' and 'go' verbs that are not formally in opposition with each other. Unlike such verbs, the pairs of deictic suffixes in Kupsapiny are each semantic as well as formal opposites. The suffixes in each pair both occur in the same set of morphological environments, and the deictic concepts that they express usually show contrast in terms of 'hither' ('toward the deictic center') vs. 'thither' ('in a direction other than the deictic center'). However, as described in two of the preceding sections (specifically, sections 3.2.2.2 and 3.2.3), one of the thither suffixes *-t* is sometimes used in a deictic-neural way for not only motion 'in a direction other than the deictic center' but also motion 'toward the deictic center'; in this case, it can even occur with *wuli* 'this way'. The question is whether the deictic concept expressed by this thither suffix should be analyzed as defeasible. According to Levinson (1995), his theory of three levels of meaning applies to closed-class forms, and to deictic expressions. The following discussion looks at how to analyze the Kupsapiny deictic suffixes.

The meaning of the hither suffixes seems to be consistently 'toward the deictic center'. These suffixes cannot be used if the figure is far from the deictic center at the end of motion, unlike the Mparntwe Arrernte 'come' verb, but does not require the figure to arrive exactly at the deictic center, unlike the Longgu 'come' verb, as long as it ends up being close enough to the deictic center. On the other hand, one of the thither suffixes is almost always and the other thither suffix is usually used for events where the figure moves 'in a direction other than the deictic center'. These suffixes do not require the figure to be exactly at the deictic center, but do require the figure to move farther from the deictic center in the course of the motion. However, although the thither suffix *-t* is normally used for motion in a direction other than the

deictic center, it can also be used for motion toward the deictic center in some cases, as in (136) and (137) (a little modified from (79) and (114)). This occurs (i) when *-t* precedes the FROM vector suffix *-e*, (ii) when there is no unsuffixed form of the verb that can be used in a deictically neutral way, and perhaps (iii) when the motion is fast. The first factor is difficult to explain. The direction of path might likely be neutralized when attention is directed to the starting point of the path. The second factor seems to make sense as a motivation for this phenomenon. If *-t* were not used in a deictic-neutral way, any motion event would have to be categorized either as motion 'toward the deictic center' or 'in a direction other than the deictic center', and there would be no form used for motion classifiable into either category, though a question remains as to why there are cases where there are no deictic-neutral forms. The third factor, the fast speed of the motion, is mysterious, but one could conjecture that it is because the direction of fast motion relative to the deictic center is often difficult to determine.

(136) kṳ-ṭẹṛẹ́ṛ-t-ẹ ṭạṛịṭẹ́ṭ kọ-ɲí wuli/wulin.
DIST.PAST.3-fly-NEUT-from bird nest-3SG.POSS this.way/that.way
'The bird flew out of the nest this way/that way.'

(137) kṳ-sạ́ṛ-tạ́ạ́-t-ẹẹ-kẹy kọ́ wuli/wulin.
DIST.PAST.3-walk.fast-along-NEUT-from house this.way/that.way
'S/he walked fast from the house this way/that way.'

Following Wilkins & Hill's (1995) argumentation, and using Levinson's (1995) framework, one might claim that the pair of deictic suffixes, *-n* and *-t*, form a contrast set, with the hither suffix *-n* being a strong member and the thither suffix *-t* being a weak member; thus, the hither suffix conventionally, or non-defeasibly, implicates that the figure moves 'toward the deictic center'. On the other hand, the thither suffix only defeasibly implicates 'in a direction other than the deictic center'. This would mean that this thither suffix generally expresses motion (or more specifically, path or direction) at the Semantics 1 level. Through pragmatic processes, it acquires the meaning of 'in a direction other than the deictic center' at the Semantics 2 level, where a verb form with *-t* is in direct opposition with one with *-n* and often also with a neutral form.

However, assuming that there are levels of meaning of such closed-class forms as the Kupsapiny deictic suffixes, which are analogous to those of such open-class forms as 'come' and 'go' verbs, it seems to be reasonable to think the other way around – the thither suffix *-t* is deictic at the Semantics 1 level. Through pragmatic processes, it becomes deictic-neutral at the Semantics 2 level. Thus, unlike the 'go' verbs in Mparntwe Arrernte and Longgu, which may be general, non-deictic verbs of translational motion, the Kupsapiny thither suffix *-t* is inherently deictic. It is not the case that it is a general path-encoding suffix, and obtains the thither sense through pragmatic processes, unlike the 'go' verbs in Mparntwe Arrernte and Longgu.

Differently from 'come' and 'go' verbs, the pair of deictic suffixes, *-n* and *-t*, in Kupsapiny allows the above analysis. First, they are formal opposites that occur in the same set of grammatical conditions. Second, unlike 'come' and 'go' verbs, which can differ in their derivational status, the hither and thither verb suffixes have an equal morphological status. If a

thither notion is analyzed as 'in a direction other than the deictic center', it is more complex than 'toward the deictic center' because the former is a negation of the latter. This analysis is problematic in the case of the 'come' and 'go' verbs in Mparntwe Arrernte, where the 'go' verb is formally less complex than the 'come' verb. On the other hand, in the case of the pair of deictic suffixes in Kupsapiny, this analysis does not create any problem. Both *-n* and *-t* consist only one consonant (though *w* is sometimes inserted after *-n*). Third, if the thither suffix *-t* were analyzed as a general path-encoding suffix at the Semantics 1 level, it would be difficult to explain why it is needed, because path is already expressed elsewhere when this suffix is deictic-neutral. Usually combined with another path-encoding suffix (or other path-encoding suffixes), it often attaches to translational motion verbs, which encode path by definition. Generally, the characterization of meanings of closed-class forms in terms of their defeasibility at the Semantics 2 level seems to have a danger of regarding their meanings at the Semantics 1 level as extremely abstract or even null.

### 4.2 Occurrence of translational motion in the described event

As Wilkins & Hill (1995) and other researchers (e.g., Miller & Johnson-Laird 1976, Levin & Rappaport Horav 1992) argue, it is impossible to propose formal criteria for a class of motion verbs. Motion verbs can be defined only notionally. A class of path-encoding motion verbs are also difficult to define. The compatibility of a verb with one of the suffixes for path components does not necessarily mean that the verb encodes path. Such suffixes can attach many non-motion verbs.

Nevertheless, the occurrence of translational motion in the event can be predicted when any of the deictic suffixes is used with the verb in a sentence.[32] The deictic suffixes can attach to most motion verbs. They also attach to verbs like *sɨ́l* 'write', *kọọnụ* 'give', and *kụụr* 'to call', which are used for events that do not necessarily involve motion, but that can have a potentially movable event participant. When they attach to such verbs, the sentence expresses the motion of the figure object, as in (138)-(140), where the letter, water, and information move, respectively.

(138) [Repeated from (30)]

| | | | |
|---|---|---|---|
| (b) kụ-sɨ́l-ø | párọọwèt | kụ-có | sukúúlụ. |
| DIST.PAST.3-write-hither | letter | CON-come | school |
| (c) kụ-sɨ́l-tọ | párọọwèt | kụ-wó | sukúúlụ. |
| DIST.PAST.3-write-thither | letter | CON-go | school |

'S/he wrote a letter to school.'

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[32] However, there is one example where the occurrence of motion is not implied despite the use of the thither suffix *-t*.

(i) kụ-kás-t-ẹ táárɨt.
DIST.PAST.3-look-thither-with candle
'S/he looked with the light from the candle.'

(139) [Repeated from (75)]
(b) kṳ-kọọn-nw-ẹ́/(c) kṳ-kọ́ọ́n-t-ẹ peekó cokóónị.
DIST.PAST.3-give-hither-from/DIST.PAST.3-give-thither-from water kitchen
'S/he gave water from the kithen.'

(140) [Repeated from (76)]
(b) kẹẹ-kụụrụ-n-ẹ́/(c) kẹẹ-kúr-t-ẹ ŋalék lakam.
DIST.PAST.3-call-hither-from/DIST.PAST.3-call-thither-from information mountain
'S/he announced information from the mountain (*lit.*, called information).'

When one of the deictic suffixes attaches to a perception verb, the sentence may express either associated motion or fictive motion. When the deictic suffix attaches to a perception verb, if the ALONG vector suffix, *-o̱o̱/-a̱a̱*, also occurs immediately before the deictic suffix, the sentence expresses associated motion, as in (141) and (142), where the referent of the subject noun phrase ('s/he') moves. If the ALONG vector suffix does not occur, the sentence expresses fictive motion, as in (143) and (144), where the direction of looking and the line of sight fictively moves, respectively.

(141) [Repeated from (49)]
(b) kṳ-kas-tǫ́ǫ́-n/(c) ku-kas-á́á́-t lakám.
DIST.PAST.3-look-along-hither/DIST.PAST.3-look-along-thither mountain
(b)/(c): 'S/he looked at the mountain as s/he moved (b) toward the DC/(c) away from the DC.'

(142) [Repeated from (110)]
(b) kṳ-kas-tǫ́ǫ́-nnw-ẹ/(c) kṳ-kas-tá́á́-t-ẹ táárit.
DIST.PAST.3-look-along-hither-with/DIST.PAST.3-look-along-thither-with candle
'S/he looked with the light from the candle as s/he moved along (b) toward the DC/(c) away from the DC.'

(143) [Repeated from (77)]
(b) kṳ-ká́s-n-ẹ/(c) kṳ-ká́s-t-ẹ lakam.
DIST.PAST.3-look-hither-from/DIST.PAST.3-look-thither-from mountain
'S/he looked away from the mountain.'

(144) [Repeated from (78)]
(b) kṳ-ká́s-n-ẹ/(c) kṳ-ká́s-t-ẹ tírịisà.
DIST.PAST.3-look-hither-from/DIST.PAST.3-look-thither-from window
'S/he looked out/through the window (*lit.*, looked from/via the window).'

When one of the deictic suffixes attaches to a verb that is neither a perception verb nor a verb for events where a potentially movable event participant can get involved, and the deictic suffix immediately follows the ALONG vector suffix, the expressed event is associated motion. (145) is an example where the emotion verb *ɲéér* 'to get angry' is followed by the ALONG vector suffix and the deictic suffix, *-n* or *-t*.

(145) [Repeated from (48)]
(a) kụ-ɲɛ́ɛ́r/(b) kụ-ɲɛ́ɛ́r-nọọ-n/(c) kụ-ɲɛ́ɛ́r-nạạ-t.
DIST.PAST.3-get.angry/DIST.PAST.3-get.angry-along-hither/
DIST.PAST.3-get.angry-along-thither
(a): 'S/he got angry.'
(b)/(c): 'S/he got angry repeatedly (or was angry) as s/he moved (b) toward the DC/(c) away from the DC.'

Although the use of any of the deictic suffixes almost always implies the occurrence of translational motion in the described event, the reverse to this does not necessarily – the use of any of the deictic suffixes is not required for the expression of translational motion in an event.

### 4.3 Associated motion

As shown in sections 3.2.1 and 3.2.3, and as discussed above, the same set of morphemes do not consistently express associated motion. It is expressed when the suffix complex made up of the ALONG vector suffix, *-ọọ/-ạạ*, and the deictic suffix, *-n* or *-t*, which is usually used with motion verbs, is used with non-motion verbs. Therefore, the expression of associated motion in this language is quite different from that in languages like Mparntwe (Wilkins 1991).

In expressions of associated motion, a non-motion event component (specifically, concomitance) is treated as a main event component and a motion-event component is treated as a subordinate event component; thus, as in (141), (142), and (145), the non-motion event component emerges in the main verb root, and the motion-event component appears in an affix on the verb. This is an extreme satellite-framed pattern, and only in languages with a path satellite morpheme for the motion-event component of this type of event can it be expressed with a single clause. Even English, which bears many more satellite-framed than verb-framed characteristics, has limited expressions: e.g., 'I whistled past the graveyard.' 'I read comics all the way to New York.' (The grammatical judgment of the second example sentence differs depending on the speaker.) (Talmy 2000-II: 46). This expression pattern is a reversal of a common event integration pattern in verb-framed languages (Talmy 1985, 1991, 2000, 2007), where a motion event component is a main event component and a non-motion-event component is a subordinate event. In verb-framed languages, lacking path satellites, associated motion is normally expressed with not a single clause but more than one.

## 5. Conclusion

The present study has described the uses of the two pairs of deictic suffixes in Kupsapiny, and has shown that even though one of the thither suffixes is deictic-neutral in some cases, it does not mean that it is inherently non-deictic. As with the other pair of deictic suffixes, this suffix and the hither suffix in the pair are formal opposites as well as conceptual opposites, though the thither suffix becomes deictic-neutral through pragmatic processes.

The present study has also shown that in Kupsapiny, a class of motion verbs cannot be formally defined, but the use of the deictic suffixes normally suggests that there is a motion component in the described event. It has also shown that this language does not use a set of morphemes devoted to associated motion, but expresses associated motion with one of the

deictic suffixes and the ALONG vector suffix when the verb is a non-motion verb.

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