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Verb inflection in Muklom Tangsa

Mijke Mulder

La Trobe University, Melbourne

ABSTRACT

Muklom Tangsa is a Tibeto-Burman language variety with rich verb inflection that exhibits hierarchical indexing and a non-canonical inverse system. Indexes will align with S, A, P, or R arguments, depending on the configuration, but not with the T argument. Inverse marking is triggered by high-ranked P arguments, i.e. the speech act participant (SAP) P, but also by SAP R and even SAP possessors. Based on primary data, this chapter provides an overview of verb inflection in Muklom and introduces the personal pronoun paradigm and possessive determiner paradigm.

KEYWORDS

Tibeto-Burman, Tangsa, Muklom, hierarchical indexing, inverse

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Mijke Mulder
La Trobe University, Melbourne

1 Introduction

The Muklom people are located in the Southeast of Arunachal Pradesh in India, dwelling in two clusters of villages in the Changlang District. The oldest group of settlements lies near the district capital in the Patkai hill range, Changlang Town. From this older cluster, settlers went down and cleared patches of jungle to found new villages and create fields for growing crops in the plains area near Kharsang Town, approximately fifty years ago. The people refer to themselves as [muk$^{\bar{0}}$ lɔm^{2}] and to their language, which belongs to the Tibeto-Burman family, as [muk$^{\bar{0}}$ lɔm^{2} ɹa^{4}] 'Muklom speech'. The number of speakers is estimated at a few thousand. While the language is still being transmitted to the youngest generation, some (mixed) households are switching to Assamese, the regional lingua franca. The Muklom language has borrowed extensively from this Indo-Aryan language. Considering the relatively low number of speakers and the growing influence of Assamese on the language, Muklom must be counted among the many endangered languages of Northeast India.

As the title of this chapter indicates, the Muklom are part of a larger ethno-cultural group called Tangsa. People will refer to Tangsa in English as their 'tribe'. The Tangsa region spans the India-Myanmar border, but the Muklom reside only on the Indian side. The name Tangsa has been adopted by scholars as a linguistic unit, which has proven to be quite diverse: Morey (2014b: 63; 2017) estimates there are approximately 70-80 Tangsa[2] subtribes on both sides of the India-Myanmar border, each with their own language variety. Sometimes these varieties are mutually intelligible, but often they are not. Much remains to be done to create a clearer picture of the internal classification of Tangsa and to determine whether the label Tangsa is even valid as linguistic subgroup, but fortunately our knowledge of Tangsa varieties has been steadily increasing since the commencement of the DoBeS project on Tangsa, Tai and Singpho in Northeast India in 2007, directed by Stephen

[1] The research on which this chapter is based has been made possible by funds from La Trobe University, Melbourne, Australia (scholarships LTUPRS and LTUFFRS, grants from HuSS IRGS). This study would not have been possible without the help and hospitality of many Muklom consultants, mainly from Kuttom, New Chingsa and Kharsang Town, but also from New Janman and New Khimyong. For help with both verb agreement elicitation and tone determination, I would like to thank Ms Tchithan Techi and Mr Nongmai Changmi who contributed many hours of hard work, and I thank also *i*^{3} *βʌŋ*^{2} Mr Ngulang Changmi, Ms Sunumi Changmi, Mr Phanglong Sajung, Mr Chupan Changmi, Mr Munkap Khimhun, Mr Munson Khimhun, and Ms Nginnem Changmi. I am grateful to Stephen Morey, Lauren Gawne, Linda Konnerth and an anonymous reviewer for their comments on this chapter.
[2] This includes 'Tangshang', see discussion below.

Morey, and the start of language surveys around the same time in Myanmar by the Linguistic Society Naga Survey Team in cooperation with SIL International (Statezni 2013: 25).

The name Tangsa has been around for a relatively short time span. 'Tangsa' was coined by Indian official Bipin Borgohain (foreword in Barua 1991: vii), who stated that *Tang* stands for 'mountain' and *sa* means 'person'. It is unclear from which Tangsa variety he has taken these words. He refers to the community which he consulted as 'the tribe' without specifying their village location or clan name. Two alternative names exist for this ethno-linguistic group. The first is 'Tangshang', a label that was coined even more recently by the Tangshang Central Culture and Literature Committee in Nanyun, Myanmar, in 2003. Interestingly, this term is not cognate with the Borgohain's Tangsa, but derives from the names of two ancestors in local oral history, the brothers Tangnyu Wang and Shangnyu Wang[3] (Statezni 2013: 5). Currently, Tangsa remains in use in India, and Tangshang in Myanmar. Ethnologue previously employed yet another label, 'Tase', or fully 'Tase Naga' (ISO 639-3:nst; Simons and Fennig 2017). However, they have recently switched to 'Tangsang' or 'Tangshang Naga' (Simons and Fennig 2018).[4] The first, 'Tase', represents the pronunciation of the cognate word for 'Tangsa' in the Chamchang language variety.

It is important to note that the scope of Tangshang differs significantly from that of Tangsa. The label Tangshang in Myanmar includes Nocte, Wancho and Tutsa, while in India each of these is considered a separate group from Tangsa (Statezni 2013: 7). It may be worth noting that of these, Nocte is suggested as the closest linguistic relative of Tangsa (e.g. Shafer 1953: 228, French 1983: 726, Burling 1983: 17, Bradley 1997: 21, and Burling 2003: 175). In fact, some language varieties in India are sub-grouped either as Tangsa or Nocte, depending on the geographical location of its speakers, rather than based on linguistic grounds. For example, the language of Hakhun and Phong/Phontai speakers is called Tangsa when they dwell within Tangsa territory in Changlang District or in Assam, but Nocte when they live in Nocte territory, in the Tirap District of Arunachal (Morey 2017; Dutta 2019). Prior to the coining of the three umbrella terms Tangsa/Tase/Tangshang, the subgroups were referred to by their subtribe names, with the possible addition of 'Naga'. Throughout this chapter, the term Tangsa will be used to refer both to Tangsa and Tangshang, since the Muklom variety, which is the topic of discussion here, is spoken exclusively within India, where Tangsa is the standard label.

In classifications of the Tibeto-Burman languages of Northeast India, Tangsa has been subsumed under Northern Naga or Konyak, which together with Boro-Garo and Jingpho forms a higher subgroup called Sal (e.g. Shafer 1955, Benedict 1972, French 1983, Bradley 1997, Burling 2003, Blench and Post 2015). Linguistic grouping is a topic that still requires much more research, with a basis of detailed descriptions of the individual language varieties. Published original literature on Muklom Tangsa remains extremely limited. Morey (2014a: 667; 2015: passim; 2016; 2017), was the first to carry out fieldwork and analysis based on modern linguistic theory, and there is more work underway by the author of this chapter, who is carrying out a PhD project focussed exclusively on the Muklom language variety, and by Kellen P. van Dam who is carrying out a PhD project on tone systems across Tangsa varieties.[5] The earlier, pre-modern linguistics, sources on Muklom Tangsa are: 1) a sixty-six-page description of Muklom including remarks on grammar, phrases with English

[3] *Wang* means 'king' or 'chief'.

[4] Information about Tangsa varieties in India from this edition of Ethnologue should be treated carefully, as information from any source perhaps, since the data presented are limited. Also, some statements are clearly incorrect. For example, the claim that 'Kimsing dialect speakers can understand all dialects well' is far from linguistic reality.

[5] Stephen D. Morey is supervising both PhD projects.

translation and a Muklom-English wordlist by the Language Officer of Changlang in Arunachal Pradesh, Ngemu (1977), 2) a six-page language sketch by the Director of Research in Arunachal Pradesh, Das Gupta (1980), and 3) a thirteen-page wordlist by Bandyopadhyay (1989). The language variety that is being discussed in this chapter is in older sources usually referred to as 'Moklum' (e.g. Das Gupta 1980), but 'Muklom' is also found. The latter spelling is preferable, since it reflects native pronunciation of the name of the subtribe and its language better.

The Muklom language variety exhibits a rich system of verb inflection. Although earlier it was assumed that all Tangsa varieties had person indexing (Morey 2011a: 98), with the continued ingathering of new data, it was discovered that a minority, at least three varieties, lack person indexing entirely. These three varieties are Champang, Pinkhu and Yasawa (Morey 2015: 32). Remarkably, the closest relative of Champang, Haqchum, does exhibit person indexing. This is a good illustration of the stunning diversity within the Tangsa 'language'. Muklom aligns with the majority of Tangsa varieties in that it does show indexing.

This chapter starts off with a discussion of the personal pronoun paradigm (section 2.1) and the possessive determiner paradigm (section 2.2), followed by a discussion of equational sentences (section 3). Its core consists of a description of the verb system of Muklom Tangsa (section 4). This description builds further on the discussion of the Muklom verb that can be found in Mulder (2018). Transcriptions are broad, i.e. phonemic, and presented in IPA characters. Superscript numbers represent tone categories: 1 is a mid-low falling creaky tone, 2 is a high-mid rising-falling or delayed falling tone, 3 is a mid-level breathy tone, 4 is a glottalized tone, and 0 indicates a toneless syllable. Each example is accompanied by a reference code to the source. A code with a date in it, such as (20121105_04), refers to a recording made in the field by the author or by Stephen Morey. A code starting with the letter S or B refers to utterances recorded in the field in a paper notebook by the author. Finally, a code starting with 'MessageExtracts' refers to forms which were presented by native speakers through Facebook Messenger or WhatsApp in chat sessions about Muklom grammar. The field recordings are being prepared to be made available on an online archive platform in the future.

2 Personal pronouns and possessive determiners

This section deals with the personal pronoun paradigm and the possessive determiner paradigm, which are part of the survey designed by the editors of this volume. As will be discussed, the two paradigms show a high degree in overlap with respect to form. With respect to function, however, there is a major distinction between the two. While the personal pronoun functions as head of the NP and can potentially replace a full NP, the possessive determiner modifies the head of an NP and cannot replace a full NP, hence the latter is referred to as a determiner rather than a pronoun.

2.1 Personal pronouns

The personal pronoun system is presented in Table 1. The personal pronoun forms in the dual and trial columns are fairly transparent compound forms: the plural form in the last column forms the base for the dual and trial forms, to which the adjectival numeral two, *ni*^{3}, or three, *tɔm*^{2} is added. The only form that is not entirely predictable, is the first person dual inclusive *hi*^{4} *ni*^{3}, because it drops the syllable *tʌŋ*^{2} of the plural.

PERSON	SG	DU	TRL	PL
1EX	ŋa^{1}	i^{2} ni^{3}	i^{2} tɔm^{2}	i^{2}
1IN		hi^{4} ni^{3}	hi^{4} tʌŋ^{2} tɔm^{2}	hi^{4} tʌŋ^{2}
2	nʌŋ^{1}	nɨm^{1} ni^{3}	nɨm^{1} tɔm^{2}	nɨm^{1}
3	pi^{4}	niŋ^{2} ni^{3}	niŋ^{2} tɔm^{2}	niŋ^{2}

Table 1 Muklom personal pronouns

In the first person plural inclusive *hi^{4} tʌŋ^{2}*, the plural element *tʌŋ^{2}* cannot be left out. In the other plural personal pronouns, *tʌŋ^{2}* is normally absent, as is exemplified by sentence (1), which contains the plural personal pronoun *i^{2}* 'we' but no plural marker *tʌŋ^{2}*. However, the speaker can add a plural marker if she wishes to emphasize that the referents form a group or that all of them are involved. Hence, when prompted to translate 'we all' 'you all' and 'they all', consultants sometimes reply with forms containing *tʌŋ^{2}* as in (2)-(4).

(1) *i^{2}* *ɛ^{3}* *tɨl^{2}* *sa^{4}* *m-i^{1}.*
1EX ERG rice eat.soft NEG-1PL
'We do not eat rice.' (20100124-112046)

(2) *i^{2}* *tʌŋ^{2}.*
1EX PL
'We all.' (20121105_04)

(3) *nɨm^{1}* *tʌŋ^{2}.*
2PL PL
'You(pl) all.' (20100124-103507)

(4) *niŋ^{2}* *tʌŋ^{2}.*
3PL PL
'They all.' (20170224_01)

The morpheme *tʌŋ^{2}* that functions as a plural or collective marker appears not only in the realm of the personal pronoun and possessive determiner but can also function as a modifier of common nouns, as is exemplified in (5), where the marker *tʌŋ^{2}* modifies the noun *mɨk^{0}* 'eye'. Plurality is optionally marked on nouns; a plural referent does not always need to be marked as such, as is illustrated by example (6), in which *mɨk^{0}* has a plural meaning 'eyes' but is not explicitly marked as plural. This sentence is taken from the same terrifying story as (5), about a woman who had a taste for eyes. We can be sure that she would not have settled for less than both of her husband's eyes. This narrative is part of the Run Hun (*ʌun^{3} hun^{2}*) cycle, a collection of stories traditionally sung during the Muklom Mol (*mɔl^{2}*) festival, which takes place annually in the month of May.

(5) *u*^{3} *sa*^{1} *mɨk*^{0} *tʌŋ*^{2} *tʰ-a*^{2} *tʰun*^{3} *lʌt*^{0}
3SG.POSS child eye PL DEF-ABS finish pull.out
pʰʌk^{0} *tɕʌk*^{0}.
eat.solid PRF
'She had finished pulling out and eating the eyes of her child.' (20151208_05)

(6) *u*^{3} *hɨm*^{2} *te*^{2} *βa*^{1} *mɨk*^{0} *tʰ-a*^{2} *tat*^{0} *lʌt*^{0}
3SG.POSS house person M eye DEF-ABS try pull.out
t-a^{1} *ti*^{3}.
PST-3 REP
'She tried to pull the eyes of her husband out.' (20151208_05)

2.2 Possessive determiners

The possessive determiner precedes the head noun that it modifies, as exemplified in example (7). Table 2 presents its full paradigm. The carrier phrase used to elicit the possessive pronoun forms presented in Table 2 is {POSS.PRON} *hɨm*^{2} '{POSS.PRON} house'. The possessive paradigm overlaps largely with the personal pronoun forms in Table 1, with a few differences that are confined to the singular column, namely the following three suppletive forms: 1) the first person possessive determiner is *i*^{3} 'my' instead of the pronoun form *ŋa*^{1} 'I', 2) the second person is *ba*^{3} 'your' instead of the pronoun form *nʌŋ*^{1} 'you', and 3) the third person is *pi*^{4} or *u*^{3} 'her/his/its' while in the personal pronoun paradigm, only has the option *pi*^{4} 'she/he/it'.

(7) *hi*^{4} *tʌŋ*^{2} *tɨn*^{1} *ʌ*^{0} *tal*^{3}.
1IN.POSS heart and mind
'Our hearts and minds.' (20170122_03)

PERSON	SG	DU	TRL	PL
1EX	i^{3}	i^{2} ni^{3}	i^{2} tɔm^{2}	i^{2}
1IN		hi^{4} ni^{3}	hi^{4} tʌŋ^{2} tɔm^{2}	hi^{4} tʌŋ^{2}
2	ba^{3}	nɨm^{1} ni^{3}	nɨm^{1} tɔm^{2}	nɨm^{1}
3	u^{3} ~ pi^{4}	niŋ^{2} ni^{3}	niŋ^{2} tɔm^{2}	niŋ^{2}

Table 2 Muklom possessive pronouns

Like the personal pronoun paradigm, the forms in the dual and trial columns are again almost entirely predictable: the plural form (last column) forms the base for the dual and trial, except with the first person dual inclusive *hi*^{4} *ni*^{3} 'the two of us', which drops the syllable *tʌŋ*^{2} of the plural. Also, the first person plural inclusive possessive pronoun requires the plural element *tʌŋ*^{2} in the first person plural inclusive, it cannot be left out. This is demonstrated by the expression in (8) which was deemed ungrammatical by the consultant, as an invalid translation of 'our house'.

(8) **hi⁴ hɨm².*
- house
Intended: 'Our house.' (20170224_01)

3 Equational sentences

Muklom has a split system for equational sentences, in the sense that some sentences require the presence of an equational copula, while others do not. The equational copula is a light verb which is marked for person and number in the same way as other intransitive verbs and they are therefore discussed under the intransitive verb in section 4.2. The current section will be confined to the discussion of sentences which do not require the presence of a light verb: present tense affirmative equational sentences. Two examples of equational sentences without a light verb are provided in (9) and (10).

(9) *niŋ² ɹ-a² muk⁰ lɔm².*
3PL PROX-ABS Muklom
'They are Muklom.' (MessagesExtracts_2017)

(10) *mi³ka³ n-a² nɛdɛɹlɛnd te² nu¹ bɔ³.*
Mika MED-ABS the.Netherlands person F indeed
'Mika is indeed Dutch.' (B1.58)

Past and future tense and negated equational sentences must take a light verb. These three grammatical categories are overtly marked, but affirmative and present tense are not. Hence, we can state that overtly marked polarity and tense require the presence of a light verb, while non-overtly marked polarity and tense do not.

In example sentences (9) and (10), the first NP is marked with absolutive case. In Muklom, absolutive case is differential, i.e. patient-like arguments can either be marked with absolutive case or remain unmarked for case. It seems that in equational sentences, however, absolutive marking always needs to be present on the first NP. This is demonstrated by the following examples of ungrammatical sentences, (11)-(13). Consultants indicate that 'something is missing' in these sentences. The missing element is the absolutive marker.

(11) **ŋa¹ Ø muk⁰ lɔm².*
1SG Ø Muklom
Intended: 'I am Muklom.' (MessagesExtracts_2017)

(12) **pi⁴ Ø muk⁰ lɔm².*
3SG Muklom
Intended: 'He is Muklom.' (MessagesExtracts_2017)

(13) **e² ʃi³ mɛŋ² ʃi³ Ø ɹ⁰-puŋ².*
NON.PROX DIST cat DIST Ø NMLZ-white
Intended: 'That cat is white.' (B1.73)

The last sentence can be turned grammatical by adding an absolutive marker *a*^{2} to the second demonstrative determiner *ʃi*^{3} 'that', as demonstrated in (14). When a demonstrative and case marker combine, the final vowel of the demonstrative is elided and the syllable retains the tone of the case marker, so *ʃi*^{3} + *a*^{2} makes *ʃa*^{2}.

(14) *e*^{2} *ʃi*^{3} *mɛŋ*^{2} *ʃ-a*^{2} *ʌ*^{0}*-puŋ*^{2}.
NON.PROX DIST cat DIST-ABS NMLZ-white
'That cat is white.' (B1.73)

Can we call present affirmative equational sentences such as (14) zero-copula constructions? They indeed do not contain a copula. However, they do contain a linker between the first NP and the predicate nominal, which in intransitive clauses can be left out without any problem on the single argument of the clause: the absolutive marker. Perhaps not only demonstratives or personal pronouns can function as a so-called pro-copula (Stassen 2013), but also differential case markers such as the Muklom absolutive *a*^{2}.

4 Verbs

This section discusses the inflection of the verb, in order of increasing valency: intransitives in section 4.1 and 4.2, transitives in section 4.3, and ditransitives in section 4.4. Since the transitive and ditransitive paradigms are morphologically complex, and the tables very large, these are presented in the appendix. However, the intransitive verbs, which are much shorter in length, easily fit into tables and are presented in the body of this chapter, in section 4.1 below.

4.1 Intransitive main verbs

Table 3 presents an overview of the different forms of the person indexes found in the intransitive paradigm, with sigma (Σ) representing the verb stem slot. Person is always encoded in the index, but number distinctions are made only in the first and second person, a pattern which is common in Tibeto-Burman. In other words, the third person is always marked by *a*^{1}~*a*^{3}~*ɔ*^{4}, not matter whether the referent is a single entity, or a group of two, three or more. Dual and trial marking are even more restricted, occurring only in the second person.

Present tense is not overtly marked, but future is overtly marked by means of the prefix *n-* that attaches to the following person index and past tense is marked by the prefix *t-*. The negator *m-* and dual number marker *ʃ-* are prefixed to the person index in similar manner. Dual forms take two indexes. The inflection of dual forms will be discussed in more detail in the text below. The trial form *tɔm*^{2}, on the other hand, is an unbound morpheme.

PERSON	PRS	FUT	PST	NEG
1SG	Σ ʌŋ^{3}	Σ n-ʌŋ^{3}	Σ t-ʌŋ^{1}	Σ m-ɔŋ^{1}
1PL	Σ i^{3}	Σ n-i^{3}	Σ t-i^{1}	Σ m-i^{1}
2SG	Σ u^{3}	Σ n-u^{3}	Σ t-u^{1}	Σ m-u^{1}
2DU	Σ ʃ-in^{2}	Σ ʃ-in^{2} n-in^{3}	Σ ʃ-in^{2} t-in^{1}	Σ ʃ-in^{2} m-in^{1}
2TRL	Σ tɔm^{2} in^{2}	Σ tɔm^{2} n-in^{3}	Σ tɔm^{2} t-in^{1}	Σ tɔm^{2} m-in^{1}
2PL	Σ in^{2}	Σ n-in^{3}	Σ t-in^{1}	Σ m-in^{1}
3	Σ a^{3}	Σ n-a^{3}	Σ t-a^{1}	Σ m-ɔ^{4}

Table 3 Intransitive person indexes

Table 3 shows that the phonological form of the indexes differs slightly between tenses and between affirmative and negative. Some Tangsa varieties exhibit two sets of indexes, one with plosive codas and one with nasal or no codas (Morey 2015: 33, current volume). The Muklom person indexes do not show a division based on the coda, but we can group indexes according to the tone they carry: present and future tense mostly carry third tone, while past tense and the negated verb mostly carry first tone. The odd ones out with respect to tone marking in Table 3 are 2PL index *in*^{2} and on the third person index *ɔ*^{4}. These are definitely deviant forms: it has been confirmed with different consultants that the present tense 2PL index carries second tone and not the expected third tone, and that the third person negative carries fourth tone and not the expected first tone. Past and negative indexes cluster together not only in Muklom, but also in some other Tangsa varieties. Morey (2016: 2, current volume) reports that out of a sample of 25 Tangsa varieties, six have similar indexes (with a plosive coda) for the past and negative paradigms, as opposed to the future paradigm: Ngaimong, Joglei, Muishaung, Mungre, Haqchum, and Hakhun. In the same sample of 25 Tangsa varieties, we see that some associate past and negative with first tone, though the number of varieties that exhibit third tone in these paradigms is higher. Future tense is more often associated with second tone, though some future indexes in the sample do carry third tone. Morey (2016) does not present tense paradigms, as this tense involves non-cognate constructions across Tangsa varieties (Morey, p.c.), so we will not compare present tense paradigms here.

Table 3 also shows the occurrence of two vowel changes under the influence of the negator *m-*: ʌ → ɔ in the first person singular index, as illustrated by (15) and (16), and *a* → ɔ the third person index, exemplified by (17) and (18).

(15) *pi*^{4} *a*^{3} *til*^{2} *sa*^{4} ***a***^{3}.
3SG ERG rice eat.soft 3
'He eats rice.' (20121103_04)

(16) *pi*^{4} *a*^{3} *til*^{2} *sa*^{4} *m-****ɔ***^{4}.
3SG ERG rice eat.soft NEG-3
'He does not eat rice.' (20121103_04)

(17) *ŋa*^{1} *a*^{3} *tɨl*^{2} *sa*^{4} ***ʌŋ***^{3}.
1SG ERG rice eat.soft 1SG
'I eat rice.' (2009Tascam-001)

(18) *ŋa*^{1} *a*^{3} *tɨl*^{2} *sa*^{4} *m-**ɔŋ***^{1}.
1SG ERG rice eat.soft NEG-1SG
'I do not eat rice.' (20100124-112656)

Complete intransitive paradigms were collected for the verbs *u*^{0}*kat*^{0} 'to go'[6] and *u*^{0}*ʝɨp*^{0} 'to sleep'. Since the paradigms of the two verbs are identical, only one of the two is presented in tables in this section, the verb *ʝɨp*^{0} 'sleep', but example phrases of both verbs are discussed in the text.

Table 4 shows the present tense forms of *ʝɨp*^{0} 'sleep'. All person indexes carry third tone, except for the second person plural, which carries second tone. It should be pointed out that there is no distinction between exclusive and inclusive in person marking like there is in the pronoun paradigms. There is also no distinction between third person singular and plural as there is in the pronoun paradigms.

PERSON	SG	DU	TRL	PL
1	ʝɨp^{0} ʌŋ^{3}	ʝɨp^{0} i^{3}	ʝɨp^{0} i^{3}	ʝɨp^{0} i^{3}
2	ʝɨp^{0} u^{3}	ʝɨp^{0} ʃ-ɨn^{2}	ʝɨp^{0} tɔm^{2} ɨn^{2}	ʝɨp^{0} ɨn^{2}
3	ʝɨp^{0} a^{3}	ʝɨp^{0} a^{3}	ʝɨp^{0} a^{3}	ʝɨp^{0} a^{3}

Table 4 Present affirmative paradigm for *ʝɨp*^{0} 'sleep'

Trial marking can be replaced by plural forms without affecting grammaticality, and for some speakers the same applies to the dual. Some consultants have claimed, however, that while it is acceptable to trade trial marking for plural marking when addressing a group of three, the dual must always be used when addressing two persons or two animals and cannot be swapped for plural marking. This discrepancy between metalinguistic judgement and actual language use can be explained in two ways: either the metalinguistic knowledge of these speakers does not match with their actual linguistic performance, or they may be right about their own linguistic performance, but there may be a difference in the rules for dual marking between speakers, with dual marking being compulsory for some, but not for others. An example of dual-plural alternation is provided in (19) and (20). One consultant, when prompted to translate 'you two go' provided both (19) and (20). These are declarative sentences.

[6] The reader may notice that in examples provided throughout this chapter, the verb root of 'go' is *ka*^{1}*~ka*^{3} instead of *kat*^{0}. This is not a mistake, but a case of 'stem alternation': the first is the general verbal root, the second a verbal root that occurs directly preceding a person index, and the third is a nominal root. Inflected verbs take a verbal root, and the nominalizing prefix *u*^{0}-, which derives a noun from a verb, attaches to the nominal root.

(19) *nɨm¹ ni³ ka³ ɨn².*
2PL two go 2PL
'You two are going.' (20170224_01)

(20) *nɨm¹ ni³ ka¹ ʃ-ɨn².*
2PL two go DU-2PL
'You two are going.' (20170224_01)

Table 5 presents the past intransitive paradigm. All person indexes that follow the past tense marker *t-* carry first tone. The past tense dual requires a double person index. The first index carries second tone as in the present tense paradigm, while the second that immediately follows the past tense marker carries first tone. The dual form is glossed in (21). The trial does not have a double index.

PERSON	SG	DU	TRL	PL
1	ʝɨp⁰ t-ʌŋ¹	ʝɨp⁰ t-i¹	ʝɨp⁰ t-i¹	ʝɨp⁰ t-i¹
2	ʝɨp⁰ t-u¹	ʝɨp⁰ ʃ-ɨn² t-ɨn¹	ʝɨp⁰ tɔm² t-ɨn¹	ʝɨp⁰ t-ɨn¹
3	ʝɨp⁰ t-a¹	ʝɨp⁰ t-a¹	ʝɨp⁰ t-a¹	ʝɨp⁰ t-a¹

Table 5 Past affirmative intransitive paradigm for *ʝɨp⁰* 'sleep'

(21) *ʝɨp⁰ ʃ-ɨn² t-ɨn¹*
be DU-2PL PST-2PL
'the two of you were'

In the future intransitive paradigm, presented in Table 6, we see that all person indexes that follow the future tense marker *n-* carry third tone. As in the past tense paradigm, the second person dual marker *ʃ-* is followed by an index that carries second tone. The consultant provided for the second person dual in the future tense of 'to go', both a phrase without and a phrase with dual marking.

Although the following issue falls outside the scope of verb inflection, it is interesting to note that the exact sentence provided as translation of 'you three went', (22), contains a distributive prefix that can attach to numerals: *tʰʌ⁰-*. In the translation of the same sentence that the consultant provided for the other verb, *ʝɨp⁰* 'sleep', the prefix did not occur, see (23).

(22) *nɨm¹ tʰʌ⁰-tɔm² ka¹ tɔm² t-ɨn¹.*
2PL DISTR-three go TRL PST-2PL
'Each of you three went.' (20170224_01)

(23) *nɨm¹ tɔm² ʝɨp⁰ tɔm² t-ɨn¹.*
2PL TRL sleep TRL PST-2PL
'The three of slept.' (20170224_01)

The distributive marker *tʰʌ⁰-* in (22) is homophonous with two other elements in the domain of the NP: 1) a prefix that has been found in a few lexemes, see (24), which appears to have a deictic function, 'this', and 2) one of the 'prefixes' that is found in the numerals. TB languages often exhibit a

numeral system in which the numerals 1 to 10 consist of a core element, the second syllable, and a set of prefixes for the first syllable. The distribution of these prefixes, i.e. which numeral goes with which prefix, differs between languages. Muklom shows the prefix *tʰʌ⁰-* only in the numeral 'six', as shown in (25). It is unclear whether the morpheme *tʰʌ⁰-* in (22) is etymologically related to the prefix in (24) or (25). Another possibility is that the distributive prefix derives from a phonologically reduced classifier.

(24) *tʰʌ⁰-nɛ⁴* 'today'
tʰʌ-⁰ɟi² 'all'
tʰʌ⁰-ni³ 'both'

(25) *ʌ⁰-ʃɛ¹* 'one'
ʌ⁰-ni³ 'two'
ʌ⁰-tɔm² 'three'
bʌ⁰-li³ 'four'
bʌ⁰-ŋa³ 'five'
tʰʌ⁰-ɹɔk⁰ 'six'
sʌ⁰-nʌt⁰ 'seven'
ʌ⁰-ʃʌt⁰ 'eight'
ʌ⁰-kʰu¹ 'nine'
ʌ⁰-si² 'ten'

Table 6 presents the future tense paradigm of the intransitive verb. All person indexes carry third tone, except the index that directly follows the dual marker *ʃ-* in the second person dual, which carries second tone.

PERSON	SG	DU	TRL	PL
1	ɟɨp⁰ n-ʌŋ³	ɟɨp⁰ n-i³	ɟɨp⁰ n-i³	ɟɨp⁰ n-i³
2	ɟɨp⁰ n-u³	ɟɨp⁰ ʃ-ɨn² n-ɨn³	ɟɨp⁰ tɔm² n-ɨn³	ɟɨp⁰ n-ɨn³
3	ɟɨp⁰ n-a³	ɟɨp⁰ n-a³	ɟɨp⁰ n-a³	ɟɨp⁰ n-a³

Table 6 Future affirmative intransitive paradigm for *ɟɨp⁰* 'sleep'

Table 7 shows the present tense negative paradigm. The negator always follows the main verb and person indexes attach to the negator. Like the past tense, negative forms are characterised by first tone on the person index, be it that the third person carries tone four instead. Two vowel changes occur after the negator *m-*: the vowel *ʌ* of the first person singular changes to *ɔ*, and so does the vowel *a* of the third person index. The negated dual form must take two person indexes. The trial does not take a double index.

PERSON	SG	DU	TRL	PL
1	ɟɨp^{0} m-ɔŋ^{1}	ɟɨp^{0} m-i^{1}	ɟɨp^{0} m-i^{1}	ɟɨp^{0} m-i^{1}
2	ɟɨp^{0} m-u^{1}	ɟɨp^{0} ʃ-ɨn^{2} m-ɨn^{1}	ɟɨp^{0} tɔm^{2} m-ɨn^{1}	ɟɨp^{0} m-ɨn^{1}
3	ɟɨp^{0} m-ɔ^{4}	ɟɨp^{0} m-ɔ^{4}	ɟɨp^{0} m-ɔ^{4}	ɟɨp^{0} m-ɔ^{4}

Table 7 Present negative intransitive paradigm for *ɟɨp^{0}* 'sleep'

A striking feature of this language is that verbs can take either a tense marker or a negator, but not both at the same time. Hence a clause with both a tense marker and a negator requires the presence of an auxiliary, a light verb, to carry the second marker. It would be interesting to find out whether such a construction is unique to Muklom or that it occurs in other Tangsa varieties as well. In the few modern linguistic descriptions that we have, we encounter the following two patterns for verbs in general, not restricted to copulas: 1) negation and tense co-occur on the same verb stem, or 2) negation and tense do not co-occur at all in the same clause. An example of the first is Hakhun Tangsa, which shows verbal complexes with the order *verb stem* > *past tense* > *negation* > *person index* (Boro 2017: 337), and another order in which the negator precedes the verb, *negation* > *verb stem* > *present tense* > *person index* (Boro 2017: 329). Another related language variety that allows negation and tense to occur on the same verb, is Hawa Nocte.[7] In Nocte, negation can precede the verb while the tense marker follows, as in the order *negation* > *verb stem* > *future tense* (Rahman 2016:82), or stand between the verb stem and the tense marker, as in the order *verb stem* > *negation* > *past tense* > *person index* (Rahman 2016: 81). An example of the second, a variety in which negation and tense have not been found to co-occur within the same clause, is Cholim Tangsa, as Morey (2011a: 89) reports: 'The negative marker cannot co-occur with any of the other markers and temporal and aspect marking such as future/irrealis, past and continuous cannot be marked on a negated clause.'

Table 8 shows the past tense negative. As mentioned, tense and negation cannot co-occur on the same verb stem. Therefore, the auxiliary *ʌŋ^{2}* 'be' must be added to carry the tense marker, while the main verb carries the negator *m-*. In the negative past and future, 'redundant' person marking occurs: the single argument of the verb will be marked double, first after the negator, then after the tense marker. Indexes always carry the tone that is associated with the directly preceding grammatical morpheme. For example, the indexes in Table 8 that follow the negator are identical to the present tense negative indexes in Table 7, while the indexes that follow the past tense marker *t-* in Table 8 are identical to the affirmative past tense indexes in Table 5. An example of a negative past tense clause with double indexing, in this case third person markers *ɔ^{4}* and *a^{1}*, is provided in (26).

(26) *pi^{4}* *a^{3}* *kɔ^{4}* ***m-ɔ^{4}*** *ʌŋ^{2}* ***t-a^{1}***.
3SG ERG give NEG-3 be PST-3
'He did not give it (to him).' (20121103_04)

[7] In India, Nocte is considered separate from Tangsa, but in Myanmar, Nocte is subsumed under the large umbrella of Tangshang.

PERSON	SG	DU	TRL	PL
1	ɟɨp^{0} m-ɔŋ^{1} ʌŋ^{2} t-ʌŋ^{1}	ɟɨp^{0} m-i^{1} ʌŋ^{2} t-i^{1}	ɟɨp^{0} m-i^{1} ʌŋ^{2} t-i^{1}	ɟɨp^{0} m-i^{1} ʌŋ^{2} t-i^{1}
2	ɟɨp^{0} m-u^{1} ʌŋ^{2} t-u^{1}	ɟɨp^{0} ʃ-ɨn^{2} m-ɨn^{1} ʌŋ^{2} ʃ-ɨn^{2} t-ɨn^{1}	ɟɨp^{0} tɔm^{2} m-ɨn^{1} ʌŋ^{2} tɔm^{2} t-ɨn^{1}	ɟɨp^{0} m-ɨn^{1} ʌŋ^{2} t-ɨn^{1}
3	ɟɨp^{0} m-ɔ^{4} ʌŋ^{2} t-a^{1}	ɟɨp^{0} m-ɔ^{4} ʌŋ^{2} t-a^{1}	ɟɨp^{0} m-ɔ^{4} ʌŋ^{2} t-a^{1}	ɟɨp^{0} m-ɔ^{4} ʌŋ^{2} t-a^{1}

Table 8 Past negative intransitive paradigm for *ɟɨp^{0}* 'sleep'

All forms include two person indexes, except the dual, which contains the remarkable number of four person indexes. Both the main verb and the auxiliary can be accompanied by a dual marker, and since each dual marker takes its own person index, as do the negator and past tense marker, the total comes to four. Indexes that directly follow the dual marker *ʃ-* always carry second tone.

As mentioned, the dual and trial forms can be replaced by the general plural forms. Another example of this was encountered during the elicitation of the past negative dual. When the consultant was asked to translate 'you two did not sleep', she provided both a general plural form, as shown in (27), and a form with dual markers, as shown in (28). In both sentences, she does include the adjectival numeral *ni^{3}* 'two' after the pronoun *nim^{1}* 'you (plural)'.

(27) *nim^{1} ni^{3} ɟɨp^{0} m-ɨn^{1} ʌŋ^{2} t-ɨn^{1}.*
2PL two sleep NEG-2PL be PST-2PL
'You two did not sleep.' (20170224_01)

(28) *nim^{1} ni^{3} ɟɨp^{0} **ʃ-ɨn^{2}** m-ɨn^{1} ʌŋ^{2} **ʃ-ɨn^{2}** t-ɨn^{1}.*
2PL two sleep DU-2PL NEG-2PL be DU-2PL PST-2PL
'You two did not sleep.' (20170224_01)

Another variation is possible for the second person dual. The verb complex that includes the dual marker *ʃ-*, as in (28), may drop the auxiliary. For example, when asked to translate 'you two did not go', the consultant provided both a translation without auxiliary, as shown in (29) and a translation with an auxiliary *ʌŋ^{2}* 'be', see (30).

(29) *nim^{1} ni^{3} ka^{1} ʃ-ɨn^{2} m-ɨn^{1} ʃ-ɨn^{2} t-ɨn^{1}.*
2PL two go DU-2PL NEG-2PL DU-2PL PST-2PL
'The two of you did not go.' (20170224_01)

(30) *nim^{1} ni^{3} ka^{1} ʃ-ɨn^{2} m-ɨn^{1} **ʌŋ^{2}** ʃ-ɨn^{2} t-ɨn^{1}.*
2PL two go DU-2PL NEG-2PL be DU-2PL PST-2PL
'The two of you did not go.' (20170224_01)

In the negative past, variation occurs in the use of trial forms as well. The verbal complex may contain 1) two trial markers, 2) one trial marker, or 3) no trial marker, i.e. be equivalent to the general plural from. When just one trial marker is used, it may either occur after the main verb, as in (31) and (32), or after the auxiliary, as in (33). An example with two trial markers is provided in (34).

(31) *nɨm¹ tɔm² ɟɨp⁰ **tɔm²** m-ɨn¹ ʌŋ² t-ɨn¹.*
2PL TRL sleep TRL NEG-2PL be PST-2PL
'The three of you did not sleep.' (20170224_01)

(32) *nɨm¹ tɔm² ka¹ **tɔm²** m-ɨn¹ ʌŋ² t-ɨn¹.*
2PL TRL go TRL NEG-2PL be PST-2PL
'The three of you did not go.' (20170224_01)

(33) *nɨm¹ tɔm² ka¹ m-ɨn¹ ʌŋ² **tɔm²** t-ɨn¹.*
2PL TRL go NEG-2PL be TRL PST-2PL
'The three of you did not go.' (20170224_01)

(34) *nɨm¹ tɔm² ɟɨp⁰ **tɔm²** m-ɨn¹ ʌŋ² **tɔm²** t-ɨn¹.*
2PL TRL sleep TRL NEG-2PL be TRL PST-2PL
'The three of you did not sleep.' (20170224_01)

The vowel of the auxiliary *ʌŋ²* 'be' sometimes assimilates to an immediately preceding vowel. In the negative past tense paradigm, the vowel of the auxiliary can assimilate to the vowel of the preceding person index. Sentence (35) shows how *ʌŋ²* has changed to *ɔŋ²* following the third person index *ɔ⁴*, and sentence (36) shows assimilation to the preceding first plural index *i¹*.

(35) *pi⁴ ka¹ m-ɔ⁴ **ɔŋ²** t-a¹.*
2SG go NEG-3 be PST-3
'She did not go.' (20170224_01)

(36) *hi⁴ tʌŋ² ka¹ m-i¹ **iŋ²** t-i¹.*
1IN go NEG-1PL be PST-1PL
'We did not go.' (20170224_01).

Moving from negative past tense on to future tense, we see the same mechanisms with respect to number of indexes and the use of auxiliaries. Again, the consultant provides both a sentence without dual marker for the second person dual, as shown in example (37), and a sentence with dual markers, as shown in (38). The consultant took a bit of time to find the correct forms for the second person trial. Similarly, for the negative future of *ka¹* 'go', the consultant responded both with a sentence that contained two trial markers, as shown in (39), and with a sentence which had no trial marker on the main verb, as shown in (40). The full paradigm of the negative future is provided in Table 9.

(37) *nɨm¹ ni³ ka¹ m-ɨn¹ ʌŋ² n-ɨn³.*
2PL two go NEG-2PL be FUT-2PL
'The two of you will not go.' (20170224_01).

(38) *nɨm¹ ni³ ka¹ **ʃ-ɨn²** m-ɨn¹ ʌŋ² **ʃ-ɨn²** n-ɨn³.*
2PL two go DU-2PL NEG-2PL be DU-2PL FUT-2PL
'The two of you will not go.' (20170224_01).

(39) *nim¹ tɔm² ka¹ **tɔm²** m-in¹ ʌŋ² **tɔm²** n-in³.*
2PL TRL go TRL NEG-2PL be TRL FUT-2PL
'The three of you will not go.' (20170224_01).

(40) *nim¹ tɔm² ka¹ m-in¹ ʌŋ² **tɔm²** n-in³.*
2PL TRL go NEG-2PL be TRL FUT-2PL
'The three of you will not go.' (20170224_01).

PERSON	SG	DU	TRL	PL
1	ɟɨp⁰ m-ɔŋ¹ ʌŋ² n-ʌŋ³	ɟɨp⁰ m-i¹ ʌŋ² n-i³	ɟɨp⁰ m-i¹ ʌŋ² n-i³	ɟɨp⁰ m-i¹ ʌŋ² n-i³
2	ɟɨp⁰ m-u¹ ʌŋ² n-u³	ɟɨp⁰ ʃ-ɨn² m-ɨn¹ ʌŋ² ʃ-in² n-ɨn³	ɟɨp⁰ tɔm² m-ɨn¹ ʌŋ² tɔm² n-ɨn³	ɟɨp⁰ m-ɨn¹ ʌŋ² n-ɨn³
3	ɟɨp⁰ m-ɔ⁴ ʌŋ² n-a³	ɟɨp⁰ m-ɔ⁴ ʌŋ² n-a³	ɟɨp⁰ m-ɔ⁴ ʌŋ² n-a³	ɟɨp⁰ m-ɔ⁴ ʌŋ² n-a³

Table 9 Future negative intransitive paradigm for *ɟɨp⁰* 'sleep'

4.2 Equational copulas

The language has a light verb /ʌŋ²/ 'be' which is used not only as an auxiliary with main verbs to carry certain verbal markers (see section 4.1) but also functions as copula in equational sentences that are overtly marked for tense or are negated. Equational clauses that are not overtly marked for tense or are negated do not require the presence of a light verb (see section 3). The inflection of the light verb /ʌŋ²/ in equational clauses is identical to the inflection of main verbs (see section 4.1), with the same order of elements, the same pattern of tones on indexes, and the same vowel changes after the negator. An example of an equational clause with light verb is provided in (41). In this sentence, the purpose of the light verb is to carry the negator *m-*.

(41) *pi⁴ n-a² muk⁰ lɔm² **ʌŋ²** **m-ɔ⁴**.*
3SG MED-ABS Muklom be NEG-3
'He is not Muklom.' (MessagesExtracts_2017)

Like main verbs, the light verb can take either a tense marker or a negator, but not both at the same time. Hence an equational sentence with both a tense marker and negator requires the presence of two light verbs, each carrying one of the two markers. The Muklom equational construction with two light verbs is illustrated by sentence (42) which contains both the negator *m-* and past tense marker *t-*. When two light verbs are present, the first will always carry the negator, and the second will carry the past tense marker *t-* or future tense marker *n-*.

(42) *pi⁴ ʃ-a² muk⁰ lɔm² ʌŋ² m-ɔ⁴ ʌŋ² t-a¹.*
3SG MED-ABS Muklom be NEG-3 be PST-3
'He was not Muklom.' (MessagesExtracts_2017)

As mentioned, the present affirmative does not require a copula. It is possible, however, to add a copula if we want to emphasize that something is indeed or really the case. The copula will be the same as in other configurations, *ʌŋ²* 'be', and will take person indexing as normal, as exemplified in (43) and (44).

(43) *ŋa¹ ɹ-a²* *muk⁰ lɔm²* *ʌŋ²* *ʌŋ².*
1SG PROX-ABS Muklom be 1SG
'I am (really) Muklom.' (MessagesExtracts_2017)

(44) *pi⁴ n-a²* *muk⁰ lɔm²* *ʌŋ²* *a³.*
3SG MED-ABS Muklom be 3
'He is (really) Muklom.' (MessagesExtracts_2017)

The full paradigms of the equational copula are provided below, starting with the emphatic present affirmative. In each table, the dual and trial forms are different from the plural column only in the second person. In speech, dual and trial forms are optional, one can alternatively employ the regular plural. The trial marker *tɔm²* is identical to the adjectival numeral *tɔm²* 'three', but the dual marker *ʃ-* is entirely different from the adjectival numeral *ni²* 'two'. Looking at the ordering of elements, we see that the dual and trial markers are located closer to the copula root *ʌŋ²* than the person index.

PERSON	SG	DU	TRL	PL
1	ʌŋ² ʌŋ³	ʌŋ² i³	ʌŋ² i³	ʌŋ² i³
2	ʌŋ² u³	ʌŋ² ʃ-ɨn²	ʌŋ² tɔm²-ɨn²	ʌŋ² ɨn²
3	ʌŋ² a³	ʌŋ² a³	ʌŋ² a³	ʌŋ² a³

Table 10 Present affirmative equational copula paradigm (emphatic)

PERSON	SG	DU	TRL	PL
1	ʌŋ² t-ʌŋ¹	ʌŋ² t-i¹	ʌŋ² t-i¹	ʌŋ² t-i¹
2	ʌŋ² t-u¹	ʌŋ² ʃ-ɨn² t-ɨn¹	ʌŋ² tɔm² t-ɨn¹	ʌŋ² t-ɨn¹
3	ʌŋ² t-a¹	ʌŋ² t-a¹	ʌŋ² t-a¹	ʌŋ² t-a¹

Table 11 Past affirmative equational copula paradigm

PERSON	SG	DU	TRL	PL
1	ʌŋ² n-ʌŋ³	ʌŋ² n-i³	ʌŋ² n-i³	ʌŋ² n-i³
2	ʌŋ² n-u³	ʌŋ² ʃ-ɨn² n-ɨn³	ʌŋ² tɔm² n-ɨn³	ʌŋ² n-ɨn³
3	ʌŋ² n-a³	ʌŋ² n-a³	ʌŋ² n-a³	ʌŋ² n-a³

Table 12 Future affirmative equational copula paradigm

PERSON	SG	DU	TRL	PL
1	ʌŋ^{2} m-ɔŋ^{1}	ʌŋ^{2} m-i^{1}	ʌŋ^{2} m-i^{1}	ʌŋ^{2} m-i^{1}
2	ʌŋ^{2} m-u^{1}	ʌŋ^{2} ʃ-ɨn^{2} m-ɨn^{1}	ʌŋ^{2} tɔm^{2} m-ɨn^{1}	ʌŋ^{2} m-ɨn^{1}
3	ʌŋ^{2} m-ɔ^{4}	ʌŋ^{2} m-ɔ^{4}	ʌŋ^{2} m-ɔ^{4}	ʌŋ^{2} m-ɔ^{4}

Table 13 Present negative equational copula paradigm

As discussed above, the copula can carry a tense marker or a negator, but not both at the same time. An equational sentence that is marked for tense and negation therefore contains two copulas, the first carrying negation and the second carrying tense, as can be seen in Table 8 and Table 9. The dual and trial marker appears on both copulas, resulting in the complex second person dual and trial forms with a whopping amount of four person indexes. These forms are presented along with full glosses in (45) and (46).

(45) *ʌŋ^{2} ʃ-ɨn^{2} m-ɨn^{1} ʌŋ^{2} ʃ-ɨn^{2} t-ɨn^{1}*
be DU-2PL NEG-2PL be DU-2PL PST-2PL
'the two of you were not'

(46) *ʌŋ^{2} tɔm^{2} m-ɨn^{1} ʌŋ^{2} tɔm^{2} t-ɨn^{1}*
be TRL NEG-2PL be TRL PST-2PL
'the three of you were not'

PERSON	SG	DU	TRL	PL
1	ʌŋ^{2} m-ɔŋ^{1} ʌŋ^{2} t-ʌŋ^{1}	ʌŋ^{2} m-i^{1} ʌŋ^{2} t-i^{1}	ʌŋ^{2} m-i^{1} ʌŋ^{2} t-i^{1}	ʌŋ^{2} m-i^{1} ʌŋ^{2} t-i^{1}
2	ʌŋ^{2} m-u^{1} ʌŋ^{2} t-u^{1}	ʌŋ^{2} ʃ-ɨn^{2} m-ɨn^{1} ʌŋ^{2} ʃ-ɨn^{2} t-ɨn^{1}	ʌŋ^{2} tɔm^{2} m-ɨn^{1} ʌŋ^{2} tɔm^{2} t-ɨn^{1}	ʌŋ^{2} m-ɨn^{1} ʌŋ^{2} t-ɨn^{1}
3	ʌŋ^{2} m-ɔ^{4} ʌŋ^{2} t-a^{1}	ʌŋ^{2} m-ɔ^{4} ʌŋ^{2} t-a^{1}	ʌŋ^{2} m-ɔ^{4} ʌŋ^{2} t-a^{1}	ʌŋ^{2} m-ɔ^{4} ʌŋ^{2} t-a^{1}

Table 14 Past negative equational copula paradigm

The paradigm of the future negative in Table 15 follows the same order of elements as the past negative in Table 14. The most complex forms, the dual and trial second person, are provided with glosses in (47) and (48).

(47) *ʌŋ^{2} ʃ-ɨn^{2} m-ɨn^{1} ʌŋ^{2} ʃ-ɨn^{2} n-ɨn^{3}*
be DU-2PL NEG-2PL be DU-2PL FUT-2PL
'the two of you will not be'

(48) *ʌŋ^{2} tɔm^{2} m-ɨn^{1} ʌŋ^{2} tɔm^{2} n-ɨn^{1}*
be TRL NEG-2PL be TRL FUT-2PL
'the three of you will not be'

PERSON	SG	DU	TRL	PL
1	ʌŋ^{2} m-ɔŋ^{1} ʌŋ^{2} n-ʌŋ^{3}	ʌŋ^{2} m-i^{1} ʌŋ^{2} n-i^{3}	ʌŋ^{2} m-i^{1} ʌŋ^{2} n-i^{3}	ʌŋ^{2} m-i^{1} ʌŋ^{2} n-i^{3}
2	ʌŋ^{2} m-u^{1} ʌŋ^{2} n-u^{3}	ʌŋ^{2} ʃ-ɨn^{2} m-ɨn^{1} ʌŋ^{2} ʃ-ɨn^{2} n-ɨn^{3}	ʌŋ^{2} tɔm^{2} m-ɨn^{1} ʌŋ^{2} tɔm^{2} n-ɨn^{3}	ʌŋ^{2} m-ɨn^{1} ʌŋ^{2} n-ɨn^{3}
3	ʌŋ^{2} m-ɔ^{4} ʌŋ^{2} n-a^{3}	ʌŋ^{2} m-ɔ^{4} ʌŋ^{2} n-a^{3}	ʌŋ^{2} m-ɔ^{4} ʌŋ^{2} n-a^{3}	ʌŋ^{2} m-ɔ^{4} ʌŋ^{2} n-a^{3}

Table 15 Future negative equational copula paradigm

4.3 Transitive verbs

This section discusses the inflection of transitive verbs. Two striking features of the Muklom transitive paradigm, and also of the ditransitive paradigm as we will see in section 4.4, are hierarchical indexing and inverse marking. Forms were collected of two verbs, namely *kʰi^{3}* 'see, look at' and *βat^{0}* 'hit'. Since no differences were found between the forms of the two verbs and to save space, only for *βat^{0}* 'hit' the full paradigm is presented, in Table 20-25 in the appendix.

4.3.1 Hierarchical person indexing

In intransitive clauses, indexing on the verb invariably corresponds to the single argument (S) of the verb. Transitive clauses involve an agent-like argument (A) and a patient-like argument (P). In Muklom, the index of a transitive clause corresponds either to A or P, depending on the configuration of arguments. For example, in sentence (49), a second person A argument acts upon a third person P argument, 2→3, and the index *u^{1}* corresponds to the A argument. Yet in example (50), where a third person A acts upon a second person P, 3→2, the index *u^{3}* corresponds to the P argument. The reason for this difference is that Muklom shows hierarchical indexing, i.e. the ranking of the argument is a determining factor in the selection of the person index. Examples (49) and (50) show us that the second person is higher in rank than the third person; preference is given to the second person over the third person in person indexing.

(49) *nʌŋ^{1}* *a^{3}* *mi^{4}* *nu^{1}* *βat^{0}* *t-**u^{1}***.
2SG ERG person female hit PST-2SG
'You(sg) have hit the woman.' (B1.85)

(50) *niŋ^{2}* *a^{3}* *nʌŋ^{1}* *βat^{0}* *ta^{4}* *pʰ-**u^{3}***.
3PL ERG 2SG hit PST INV-2SG
'They have hit you(sg).' (B1.86)

We can describe the pattern of indexing in Muklom as follows: indexes align with the S/A arguments of the clause, except when a third person A acts upon a first or second person P argument, in which case indexes align with the higher ranked P argument. In other words, speech act participants (SAPs) have a higher status than non-SAP arguments in verb indexing, as is visualised by the person hierarchy in Figure 1.

SAP				**non-SAP**
1st person	/	*2nd person*	>	*3rd person*

Figure 1. A hierarchy for person indexing in Muklom

Looking at hierarchical indexing cross-linguistically, we see that languages employ different person hierarchies. In some languages second person outranks first person, for example in the Nakh-Dagestanian language Icari Darci (Sumbatova and Mutalov 2003; Jacques and Antonov 2014: 309), while some other languages rank first person higher than second, for example Hakhun Tangsa (Boro 2012; DeLancey 2017: 90). In Muklom, first and second person are equal in ranking; first does not have priority over second, and neither does second take priority over first. If the two arguments of the transitive clause are both SAPs, it is the semantic role of the arguments that determines which is indexed on the verb: the A argument is given priority. Cross-linguistically we see that languages do not always prioritize the A argument in SAP→SAP configurations. In fact, Tibeto-Burman hierarchical systems more often give preference to the P argument over the A argument in clauses that contain two SAP arguments, according to DeLancey (2017: 87).

Many TB languages exhibit hierarchical indexing, and some argue that this feature of the verbal domain can be reconstructed as far back as the level of Proto-TB (DeLancey 1981, Bauman 1975). Non-hierarchical indexing, i.e. consistent indexing of the A or S argument, would then be an innovation. Most Tangsa varieties, based on current data, appear to lack hierarchical indexing (Morey 2011a: 96, current volume), but Muklom is not the only variety that has this indexing system: Hakhun has already been reported to exhibit hierarchical indexing (Morey 2011b: 677; Boro 2017, current volume) and Phong as well (Dutta current volume). It is not unlikely that, as data from more varieties is collected and analysed, more varieties may be found to show hierarchical indexing, as closely related languages such as Nocte and Jingpho (DeLancey 2011) also have it.

An overview of transitive indexes in the present tense is provided in Table 16. For some cells, alternative forms exist, but these will be discussed separately and presented in Table 18. For transitive indexes in the other tenses and their negative paradigms, see Table 20-25 in the appendix. For easy comparison, the intransitive indexes are listed in the last column of Table 16. The tone marking on the indexes differs slightly from the intransitive present tense paradigm: the first person singular index, *ʌŋ*^{2}, carries second tone instead of the expected third tone. The sigma (Σ) represents the verb stem. Note the presence of *p*^{h}- between the verb stem and the index in some of the cells. This is the inverse marker which will be discussed in section 4.3.2.

P / A	1SG	1PL	2SG	2PL	3	S
1SG			Σ p^{h}-ʌŋ^{2}	Σ p^{h}-ʌŋ^{2}	Σ ʌŋ^{3}	Σ ʌŋ^{3}
1PL			Σ p^{h}-i^{3}	Σ p^{h}-i^{3}	Σ i^{3}	Σ i^{3}
2SG	Σ p^{h}-u^{3}	Σ p^{h}-u^{3}			Σ u^{3}	Σ u^{3}
2PL	Σ p^{h}-in^{2}	Σ p^{h}-in^{2}			Σ in^{2}	Σ in^{2}
3	Σ p^{h}-ʌŋ^{2}	Σ p^{h}-i^{3}	Σ p^{h}-u^{3}	Σ p^{h}-in^{2}	Σ a^{3}	Σ a^{3}

Table 16 Transitive person indexes, present tense

Table 16 shows the alignment of indexing: most forms align with the A on the left, but four cells align with the P above. For clarity's sake, the configurations that show P-indexing have been shaded in Table 17 below. The possible configurations of arguments in transitive clauses are divided into three domains (Jacques and Antonov 2014: 302): 1) the local domain, in which an SAP acts upon another SAP, i.e. 1→2 and 2→1, 2) the mixed domain, which involves an SAP-argument and a non-SAP argument, i.e. 1/2→3 and 3→1/2, and 3) the non-local domain, in which a non-SAP acts upon another non-SAP, i.e. 3→3. We can summarize hierarchical indexing in Muklom as follows: in the mixed domain, position on the person hierarchy regulates indexing, while in the local domain, semantic role determines index alignment, i.e. automatic alignment with A, the Agent-like argument of the transitive clause. We cannot make any claim about the non-local domain. Since third person indexes do not encode number, it cannot be determined whether they align with A or with P.

<table>
<tr><th>P
A</th><th>1SG</th><th>1PL</th><th>2SG</th><th>2PL</th><th>3</th></tr>
<tr><td>1SG</td><td></td><td></td><td colspan="2" rowspan="2">local</td><td rowspan="4">mixed</td></tr>
<tr><td>1PL</td><td></td><td></td></tr>
<tr><td>2SG</td><td colspan="2" rowspan="2">local</td><td></td><td></td></tr>
<tr><td>2PL</td><td></td><td></td></tr>
<tr><td>3</td><td colspan="4">mixed</td><td>non-local</td></tr>
</table>

Table 17 Indexing of P (shaded) versus indexing of A (white)

We have negative evidence to support that semantic role determines alignment in the local domain: indexing of P is deemed ungrammatical. Sentences (51) and (52) illustrate the local configurations 1→2 and 2→1 respectively and are grammatical utterances. The indexes align with the A arguments of the clause. When the indexes are changed to align with the P argument of the clauses, as in (53) and (54), this is found ungrammatical by consultants.

(51) *ŋa*^{1} *a*^{3} *nʌŋ*^{1} *βat*^{0} *ta*^{4} *p*^{h}-***ʌŋ***^{2}.
1SG ERG 2SG hit PST INV-1SG
'I have hit you(sg).' (B1.86)

(52) *nʌŋ*^{1} *a*^{3} *ŋa*^{1} *βat*^{0} *ta*^{4} *p*^{h}-***u***^{3}.
2SG ERG 1SG hit PST INV-2SG
'You(sg) have hit me.' (B1.86)

(53) * *ŋa*^{1} *a*^{3} *nʌŋ*^{1} *βat*^{0} *ta*^{4} *p*^{h}-***u***^{3}.
1SG ERG 2SG hit PST INV-2SG
Intended: 'I have hit you(sg).' (B1.86)

(54) * *nʌŋ*^{1} *a*^{3} *ŋa*^{1} *βat*^{0} *ta*^{4} *p*^{h}-***ʌŋ***^{2}.
2SG ERG 1SG hit PST INV-2SG
Intended: 'You(sg) have hit me.' (B1.86)

As mentioned, for some configurations, alternative forms exist. While collected data indicate that there is only one possible index in each of the white cells of Table 17, the configurations in which P outranks A, represented by the shaded area in the same table, have more possible indexes. The default strategy seems to be alignment with the higher ranked P but indexing of the lower-ranked A is also possible. Further, the inverse marker *pʰ-* is sometimes dropped. Table 18 repeats the default 3→SAP forms from Table 16 and adds the alternative forms *pʰa³* and *a³*.

A \ P	1SG	1PL	2SG	2PL
3	Σ pʰ-ʌŋ² Σ pʰ-a³ Σ a³	Σ pʰ-i³ Σ pʰ-a³ Σ a³	Σ pʰ-u³ Σ pʰ-a³ Σ a³	Σ pʰ-ɨn² Σ pʰ-a³ Σ a³

Table 18 Alternative indexes for 3→SAP

The choice for alignment with a lower-ranked A instead of a higher-ranked P perhaps depends on pragmatic considerations. When a speaker uses the form *pʰa³*, they perhaps do so to emphasize the role of the A referent. Interestingly, a younger consultant first found indexing of the A referent unacceptable, but when a few older consultants who also were present during the elicitation session objected to this grammaticality judgement, the younger speaker changed their mind and added that indexing of the lower-ranked A is acceptable 'in the right sentence'. More research is needed to confirm whether pragmatics indeed determines the alignment of the index. The third index, *a³*, lacks the inverse marker *pʰ-*. It is suspected that syntax plays a role here, as one consultant indicated that dropping the inverse marking is acceptable on the condition that 'you add something to complete the sentence'. This perhaps indicates that this form may be used in subordinate but not in main clauses. This is a topic for further investigation.

4.3.2 The inverse marker

In transitive clauses, Muklom uses an inverse marker to signal that P is an SAP. Cross-linguistically, inverse marking is rare, but it is not uncommon among TB languages, as has been noted by, for example, Ebert (1987: 477). The Muklom inverse marker is *pʰ-*, with an allomorph *pʰʌ⁰-* in future tense clauses. The inverse is deictic in origin, deriving from the cislocative marker *pʰ-~pʰʌ⁰-*. Cislocatives are a common source for inverse markers (see Gildea and Zúñiga 2016). Muklom has two other homophonous markers, the ingressive and the adhortative, which derive from the same source. All four markers take the same slot in the verbal complex, between the verb stem and the person index.

The distribution of the inverse marker in Muklom is indicated in Table 19 by means of shading. However, remember that the inverse marker may be dropped in some circumstances in the mixed domain, as discussed in section 4.3.1.

<table>
<tr><th>A \ P</th><th>1SG</th><th>1PL</th><th>2SG</th><th>2PL</th><th>3</th></tr>
<tr><td>1SG</td><td></td><td></td><td colspan="2" rowspan="2">local</td><td rowspan="4">mixed</td></tr>
<tr><td>1PL</td><td></td><td></td></tr>
<tr><td>2SG</td><td colspan="2" rowspan="2">local</td><td></td><td></td></tr>
<tr><td>2PL</td><td></td><td></td></tr>
<tr><td>3</td><td colspan="4">mixed</td><td>non-local</td></tr>
</table>

Table 19 The distribution of the inverse marker in Muklom

In typology, we distinguish between canonical and non-canonical inverse systems. An inverse system is canonical if it marks the verb when P outranks A on a referential hierarchy (Jacques and Antonov 2014: Table 2). In Muklom, which follows the person hierarchy 1/2>3, this would include only the configurations 3→1 and 3→2. This is the area of the paradigms in which we encounter P alignment of the index (Table 17), but the inverse marker *pʰ-* (Table 19) extends beyond the scope of the canonical inverse system into the local domain. We cannot fully account for the distribution of the inverse by evoking a referential hierarchy. In other words, Muklom exhibits a non-canonical inverse system. Such systems are not uncommon cross-linguistically (Jacques and Antonov 2014).

In Muklom, speakers not only use the inverse marker in transitive clauses with an SAP P-argument, but also use it in ditransitive clauses to mark the presence of an SAP Recipient, and it may even occur with SAP Possessors. Sentence (55) presents an example of *pʰ-* used in a ditransitive clause to signal the presence of an SAP Recipient, here *ŋa*^{1} 'I'. Ditransitive clauses are further discussed in section 4.4. Sentence (56) illustrates how the possessive determiner *ba*^{3} 'your(sg)' triggers the presence of the inverse marker in an intransitive clause.

(55) *niŋ*^{2} *a*^{3} ***ŋa***^{1} *ma*^{3} *bɔ*^{3} *ti*^{1} *kɔ*^{4} *ta*^{4} ***pʰ-ʌŋ***^{2}.
3PL ERG 1SG DAT papaya fruit give PST INV-1SG
'They gave papaya to me.' (B1.86)

(56) ***ba***^{3} *kʰak*^{0} *βaŋ*^{3} *na*^{3} *ŋin*^{2} *tʰʌ*^{0}*-lʌt*^{0} *ka*^{1} ***pʰ-a***^{3}.
2SG.POSS bag from LOC money MED-pull.out go INV-3
'Money is sticking/coming out of your bag.' (B1.133)

An interesting feature of the inverse marker is its position relative to the tense markers: while the inverse follows the past tense marker *ta*^{4}, as can be seen in sentence (55), it precedes the future tense marker *n-*, as illustrated by example (57). In the latter case, not the form *pʰ-*, but its allomorph *pʰʌ*^{0}*-* must be used, so that the creation of a consonant cluster is avoided.

(57) *nim*^{1} *ni*^{3} *a*^{3} *i*^{2} *βat*^{0} ***pʰʌ***^{0}***-n-in***^{3}.
2PL two ERG 1EX hit INV-FUT-2PL
'You two will hit us.' (20151228_01)

4.4 Ditransitive verbs

The ditransitive paradigms are identical to the transitive paradigms listed in Table 20-25, the only difference being that the Theme argument (T) cannot trigger index alignment but the Recipient argument (R) can. Similarly, in the ditransitive paradigm, the inverse marker *pʰ-* signals the presence of an SAP R, and not of an SAP T. Alignment of the index with R and inverse marker for a higher-ranked R are both illustrated by sentence (58). The personal pronoun *ŋa*^{1} 'I' is marked as R by means of the postposition *ma*^{3} 'to'. The index *ʌŋ*^{2} aligns with this first person pronoun, and not with the S, *niŋ*^{2} 'they', or with the T, *bɔ*^{3} *ti*^{1} 'fruit'. The inverse is not triggered by the T, *bɔ*^{3} *ti*^{1} 'fruit', which is nor an SAP, but by the R, *ŋa*^{1} 'I', which is an SAP.

(58) *niŋ*^{2} *a*^{3} ***ŋa***^{1} *ma*^{3} *bɔ*^{3} *ti*^{1} *kɔ*^{4} *ta*^{4} ***pʰ-ʌŋ***^{2}.
3PL ERG 1SG DAT papaya fruit give PST INV-1SG
'They gave papaya to me.' (B1.86)

Finally, although the example sentences do not mark P arguments with absolutive case, it must be stressed that it is possible to do so. As opposed to ergative marking, which always must be present, absolutive marking is differential. The mechanisms behind absolutive marking are a topic for further investigation, but anecdotal evidence suggest that topicality and definiteness may play a role.

5 Discussion

Muklom is a language with rich verb inflection that exhibits hierarchical indexing and a non-canonical inverse system. Indexes will align with S, A, P, or R arguments, depending on the configuration, but not with the T argument. Inverse marking is triggered by high-ranked P arguments, i.e. SAP P, but also by SAP R and even SAP possessors. We can conclude that verb marking and NP marking are relatively disintegrated: the system of expressing semantic roles by case markers or postpositions does not nicely align with the system of indexing and inverse marking on the verb. This structure, commonly found among TB languages, is what Bickel (2000) refers to as 'associative agreement', as opposed to 'integrative agreement', which nicely aligns NP and verb domains.

Two of the many interesting topics that remain for future research are: 1) the role of pragmatics in configurations where both indexing of the P and indexing of the A is possible, and 2) the role of definiteness and topicality in differential absolutive case marking.

Abbreviations

ABS	absolutive	NEG	negative
DAT	dative	NMLZ	nominalizer
DEF	definite	NON.PROX	non-proximal
DIST	distal	PL	plural
DU	dual	POSS	possessive
ERG	ergative	PRF	perfective
EX	exclusive	PROX	proximate
F	female	PST	past
FUT	future	REP	reportative

IN	inclusive	SG	singular
INV	inverse	TRL	trial
MED	medial		

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Mijke Mulder
mijke.mulder@gmail.com

Appendix: Full transitive paradigms

To obtain the paradigm of the ditransitive verb *kɔ⁴* 'give', one simply replaces the stem *βat⁰* in the following tables by the stem *kɔ⁴*, since the verb endings of the ditransitive paradigm are identical to those of the transitive paradigm.

A \ P		1					2			3		
		SG	DU.EX	PL.EX	DU.IN	PL.IN	SG	DU	PL	SG	DU	PL
1	SG						βat⁰ pʰ-ʌŋ²	βat⁰ pʰ-ʌŋ²	βat⁰ pʰ-ʌŋ²	βat⁰ ʌŋ³	βat⁰ ʌŋ³	βat⁰ ʌŋ³
	DU.EX						βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ i³	βat⁰ i³	βat⁰ i³
	PL.EX						βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ i³	βat⁰ i³	βat⁰ i³
	DU.IN									βat⁰ i³	βat⁰ i³	βat⁰ i³
	PL.IN									βat⁰ i³	βat⁰ i³	βat⁰ i³
2	SG	βat⁰ pʰ-u³	βat⁰ pʰ-u³	βat⁰ pʰ-u³						βat⁰ u³	βat⁰ u³	βat⁰ u³
	DU	βat⁰ ʃ-in² pʰ-in²	βat⁰ ʃ-in² pʰ-in²	βat⁰ ʃ-in² pʰ-in²						βat⁰ ʃ-in²	βat⁰ ʃ-in²	βat⁰ ʃ-in²
	PL	βat⁰ pʰ-in²	βat⁰ pʰ-in²	βat⁰ pʰ-in²						βat⁰ in²	βat⁰ in²	βat⁰ in²
3	SG	βat⁰ pʰ-ʌŋ²	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-u³	βat⁰ ʃ-in² pʰ-in²	βat⁰ pʰ-in²	βat⁰ a³	βat⁰ a³	βat⁰ a³
	DU	βat⁰ pʰ-ʌŋ²	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-u³	βat⁰ ʃ-in² pʰ-in²	βat⁰ pʰ-in²	βat⁰ a³	βat⁰ a³	βat⁰ a³
	PL	βat⁰ pʰ-ʌŋ²	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-i³	βat⁰ pʰ-u³	βat⁰ ʃ-in² pʰ-in²	βat⁰ pʰ-in²	βat⁰ a³	βat⁰ a³	βat⁰ a³

Table 20 Present transitive paradigm of *βat⁰* 'hit'

A \ P		1			2			3		
		SG	DU	PL	SG	DU	PL	SG	DU	PL
1	SG				βat^{0} pʰʌ^{0}-m-ɔŋ^{1}	βat^{0} pʰʌ^{0}-m-ɔŋ^{1}	βat^{0} pʰʌ^{0}-m-ɔŋ^{1}	βat^{0} m-ɔŋ^{1}	βat^{0} m-ɔŋ^{1}	βat^{0} m-ɔŋ^{1}
	DU				βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} m-i^{1}	βat^{0} m-i^{1}	βat^{0} m-i^{1}
	PL				βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} m-i^{1}	βat^{0} m-i^{1}	βat^{0} m-i^{1}
2	SG	βat^{0} pʰʌ^{0}-m-u^{1}	βat^{0} pʰʌ^{0}-m-u^{1}	βat^{0} pʰʌ^{0}-m-u^{1}				βat^{0} m-u^{1}	βat^{0} m-u^{1}	βat^{0} m-u^{1}
	DU	βat^{0} ʃ-ɨn^{2} pʰʌ^{0}-m-ɨn^{1}	βat^{0} ʃ-ɨn^{2} pʰʌ^{0}-m-ɨn^{1}	βat^{0} ʃ-ɨn^{2} pʰʌ^{0}-m-ɨn^{1}				βat^{0} ʃ-ɨn^{2} m-ɨn^{1}	βat^{0} ʃ-ɨn^{2} m-ɨn^{1}	βat^{0} ʃ-ɨn^{2} m-ɨn^{1}
	PL	βat^{0} pʰʌ^{0}-m-ɨn^{1}	βat^{0} pʰʌ^{0}-m-ɨn^{1}	βat^{0} pʰʌ^{0}-m-ɨn^{1}				βat^{0} m-ɨn^{1}	βat^{0} m-ɨn^{1}	βat^{0} m-ɨn^{1}
3	SG	βat^{0} pʰʌ^{0}-m-ɔŋ^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-u^{1}	βat^{0} ʃ-ɨn^{2} pʰʌ^{0}-m-ɨn^{1}	βat^{0} pʰʌ^{0}-m-ɨn^{1}	βat^{0} m-ɔ^{4}	βat^{0} m-ɔ^{4}	βat^{0} m-ɔ^{4}
	DU	βat^{0} pʰʌ^{0}-m-ɔŋ^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-u^{1}	βat^{0} ʃ-ɨn^{2} pʰʌ^{0}-m-ɨn^{1}	βat^{0} pʰʌ^{0}-m-ɨn^{1}	βat^{0} m-ɔ^{4}	βat^{0} m-ɔ^{4}	βat^{0} m-ɔ^{4}
	PL	βat^{0} pʰʌ^{0}-m-ɔŋ^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-i^{1}	βat^{0} pʰʌ^{0}-m-u^{1}	βat^{0} ʃ-ɨn^{2} pʰʌ^{0}-m-ɨn^{1}	βat^{0} pʰʌ^{0}-m-ɨn^{1}	βat^{0} m-ɔ^{4}	βat^{0} m-ɔ^{4}	βat^{0} m-ɔ^{4}

Table 21 Present negative transitive paradigm of *βat^{0}* 'hit'

A \ P		1					2			3		
		SG	DU.EX	PL.EX	DU.IN	PL.IN	SG	DU	PL	SG	DU	PL
1	SG						βat^{0} ta^{4} pʰ-ʌŋ^{2}	βat^{0} ta^{4} pʰ-ʌŋ^{2}	βat^{0} ta^{4} pʰ-ʌŋ^{2}	βat^{0} t-ʌŋ^{1}	βat^{0} t-ʌŋ^{1}	βat^{0} t-ʌŋ^{1}
	DU.EX						βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} t-i^{1}	βat^{0} t-i^{1}	βat^{0} t-i^{1}
	PL.EX						βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} t-i^{1}	βat^{0} t-i^{1}	βat^{0} t-i^{1}
	DU.IN									βat^{0} t-i^{1}	βat^{0} t-i^{1}	βat^{0} t-i^{1}
	PL.IN									βat^{0} t-i^{1}	βat^{0} t-i^{1}	βat^{0} t-i^{1}
2	SG	βat^{0} ta^{4} pʰ-u^{3}	βat^{0} ta^{4} pʰ-u^{3}	βat^{0} ta^{4} pʰ-u^{3}						βat^{0} t-u^{1}	βat^{0} t-u^{1}	βat^{0} t-u^{1}
	DU	βat^{0} ʃ-in^{2} ta^{4} pʰ-in^{2}	βat^{0} ʃ-in^{2} ta^{4} pʰ-in^{2}	βat^{0} ʃ-in^{2} ta^{4} pʰ-in^{2}						βat^{0} ʃ-in^{2} t-in^{1}	βat^{0} ʃ-in^{2} t-in^{1}	βat^{0} ʃ-in^{2} t-in^{1}
	PL	βat^{0} ta^{4} pʰ-in^{2}	βat^{0} ta^{4} pʰ-in^{2}	βat^{0} ta^{4} pʰ-in^{2}						βat^{0} t-in^{1}	βat^{0} t-in^{1}	βat^{0} t-in^{1}
3	SG	βat^{0} ta^{4} pʰ-ʌŋ^{2}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-u^{3}	βat^{0} ʃ-in^{2} ta^{4} pʰ-in^{2}	βat^{0} ta^{4} pʰ-in^{2}	βat^{0} t-a^{1}	βat^{0} t-a^{1}	βat^{0} t-a^{1}
	DU	βat^{0} ta^{4} pʰ-ʌŋ^{2}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-u^{3}	βat^{0} ʃ-in^{2} ta^{4} pʰ-in^{2}	βat^{0} ta^{4} pʰ-in^{2}	βat^{0} t-a^{1}	βat^{0} t-a^{1}	βat^{0} t-a^{1}
	PL	βat^{0} ta^{4} pʰ-ʌŋ^{2}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-i^{3}	βat^{0} ta^{4} pʰ-u^{3}	βat^{0} ʃ-in^{2} ta^{4} pʰ-in^{2}	βat^{0} ta^{4} pʰ-in^{2}	βat^{0} t-a^{1}	βat^{0} t-a^{1}	βat^{0} t-a^{1}

Table 22 Past transitive paradigm of *βat^{0}* 'hit'

A \ P		1			2			3		
		SG	DU	PL	SG	DU	PL	SG	DU	PL
1	SG				βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² t-ʌŋ¹	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² t-ʌŋ¹	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² t-ʌŋ¹	βat⁰ m-ɔŋ¹ ʌŋ² t-ʌŋ¹	βat⁰ m-ɔŋ¹ ʌŋ² t-ʌŋ¹	βat⁰ m-ɔŋ¹ ʌŋ² t-ʌŋ¹
	DU				βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ m-i¹ ʌŋ² t-i¹	βat⁰ m-i¹ ʌŋ² t-i¹	βat⁰ m-i¹ ʌŋ² t-i¹
	PL				βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ m-i¹ ʌŋ² t-i¹	βat⁰ m-i¹ ʌŋ² t-i¹	βat⁰ m-i¹ ʌŋ² t-i¹
2	SG	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² t-u¹	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² t-u¹	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² t-u¹				βat⁰ m-u¹ ʌŋ² t-u¹	βat⁰ m-u¹ ʌŋ² t-u¹	βat⁰ m-u¹ ʌŋ² t-u¹
	DU	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹				βat⁰ ʃ-ɨn² m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹	βat⁰ ʃ-ɨn² m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹	βat⁰ ʃ-ɨn² m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹
	PL	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² t-ɨn¹	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² t-ɨn¹	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² t-ɨn¹				βat⁰ m-ɨn¹ ʌŋ² t-ɨn¹	βat⁰ m-ɨn¹ ʌŋ² t-ɨn¹	βat⁰ m-ɨn¹ ʌŋ² t-ɨn¹
3	SG	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² t-ʌŋ¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² t-u¹	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² t-ɨn¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹
	DU	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² t-ʌŋ¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² t-u¹	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² t-ɨn¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹
	PL	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² t-ʌŋ¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² t-i¹	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² t-u¹	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² t-ɨn¹	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² t-ɨn¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹	βat⁰ m-ɔ⁴ ʌŋ² t-a¹

Table 23 Past negative transitive paradigm of *βat⁰* 'hit'

A \ P		1					2			3		
		SG	DU.EX	PL.EX	DU.IN	PL.IN	SG	DU	PL	SG	DU	PL
1	SG						βat⁰ pʰʌ⁰-n-ʌŋ³	βat⁰ pʰʌ⁰-n-ʌŋ³	βat⁰ pʰʌ⁰-n-ʌŋ³	βat⁰ n-ʌŋ³	βat⁰ n-ʌŋ³	βat⁰ n-ʌŋ³
	DU.EX						βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ n-i³	βat⁰ n-i³	βat⁰ n-i³
	PL.EX						βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ n-i³	βat⁰ n-i³	βat⁰ n-i³
	DU.IN									βat⁰ n-i³	βat⁰ n-i³	βat⁰ n-i³
	PL.IN									βat⁰ n-i³	βat⁰ n-i³	βat⁰ n-i³
2	SG	βat⁰ pʰʌ⁰-n-u³	βat⁰ pʰʌ⁰-n-u³	βat⁰ pʰʌ⁰-n-u³						βat⁰ n-u³	βat⁰ n-u³	βat⁰ n-u³
	DU	βat⁰ ʃ-in² pʰʌ⁰-n-in³	βat⁰ ʃ-in² pʰʌ⁰-n-in³	βat⁰ ʃ-in² pʰʌ⁰-n-in³						βat⁰ ʃ-in² n-in³	βat⁰ ʃ-in² n-in³	βat⁰ ʃ-in² n-in³
	PL	βat⁰ pʰʌ⁰-n-in³	βat⁰ pʰʌ⁰-n-in³	βat⁰ pʰʌ⁰-n-in³						βat⁰ n-in³	βat⁰ n-in³	βat⁰ n-in³
3	SG	βat⁰ pʰʌ⁰-n-ʌŋ³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-u³	βat⁰ ʃ-in² pʰʌ⁰-n-in³	βat⁰ pʰʌ⁰-n-in³	βat⁰ n-a³	βat⁰ n-a³	βat⁰ n-a³
	DU	βat⁰ pʰʌ⁰-n-ʌŋ³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-u³	βat⁰ ʃ-in² pʰʌ⁰-n-in³	βat⁰ pʰʌ⁰-n-in³	βat⁰ n-a³	βat⁰ n-a³	βat⁰ n-a³
	PL	βat⁰ pʰʌ⁰-n-ʌŋ³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-i³	βat⁰ pʰʌ⁰-n-u³	βat⁰ ʃ-in² pʰʌ⁰-n-in³	βat⁰ pʰʌ⁰-n-in³	βat⁰ n-a³	βat⁰ n-a³	βat⁰ n-a³

Table 24 Future transitive paradigm of *βat⁰* 'hit'

A \ P		1			2			3		
		SG	DU	PL	SG	DU	PL	SG	DU	PL
1	SG				βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² n-ʌŋ³	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² n-ʌŋ³	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² n-ʌŋ³	βat⁰ m-ɔŋ¹ ʌŋ² n-ʌŋ³	βat⁰ m-ɔŋ¹ ʌŋ² n-ʌŋ³	βat⁰ m-ɔŋ¹ ʌŋ² n-ʌŋ³
	DU				βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ m-i¹ ʌŋ² n-i³	βat⁰ m-i¹ ʌŋ² n-i³	βat⁰ m-i¹ ʌŋ² n-i³
	PL				βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ m-i¹ ʌŋ² n-i³	βat⁰ m-i¹ ʌŋ² n-i³	βat⁰ m-i¹ ʌŋ² n-i³
2	SG	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² n-u³	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² n-u³	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² n-u³				βat⁰ m-u¹ ʌŋ² n-u³	βat⁰ m-u¹ ʌŋ² n-u³	βat⁰ m-u¹ ʌŋ² n-u³
	DU	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³				βat⁰ ʃ-ɨn² m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³	βat⁰ ʃ-ɨn² m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³	βat⁰ ʃ-ɨn² m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³
	PL	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² n-ɨn³	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² n-ɨn³	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² n-ɨn³				βat⁰ m-ɨn¹ ʌŋ² n-ɨn³	βat⁰ m-ɨn¹ ʌŋ² n-ɨn³	βat⁰ m-ɨn¹ ʌŋ² n-ɨn³
3	SG	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² n-ʌŋ³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² n-u³	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² n-ɨn³	βat⁰ m-ɔ⁴ ʌŋ² n-a³	βat⁰ m-ɔ⁴ ʌŋ² n-a³	βat⁰ m-ɔ⁴ ʌŋ² n-a³
	DU	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² n-ʌŋ³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² n-u³	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² n-ɨn³	βat⁰ m-ɔ⁴ ʌŋ² n-a³	βat⁰ m-ɔ⁴ ʌŋ² n-a³	βat⁰ m-ɔ⁴ ʌŋ² n-a³
	PL	βat⁰ pʰʌ⁰-m-ɔŋ¹ ʌŋ² n-ʌŋ³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-i¹ ʌŋ² n-i³	βat⁰ pʰʌ⁰-m-u¹ ʌŋ² n-u³	βat⁰ ʃ-ɨn² pʰʌ⁰-m-ɨn¹ ʌŋ² ʃ-ɨn² n-ɨn³	βat⁰ pʰʌ⁰-m-ɨn¹ ʌŋ² n-ɨn³	βat⁰ m-ɔ⁴ ʌŋ² n-a³	βat⁰ m-ɔ⁴ ʌŋ² n-a³	βat⁰ m-ɔ⁴ ʌŋ² n-a³

Table 25 Future negative transitive paradigm of *βat⁰* 'hit'