A grammar of Moloko

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Dianne Friesen with Mana Djeme Isaac, Ali Gaston, and Mana Samuel. 2017. *A grammar of Moloko* (African Language Grammars and Dictionaries 3). Berlin: Language Science Press.

This title can be downloaded at:
http://langsci-press.org/catalog/book/118

ISBN: 978-3-946234-63-0 (Digital)
978-3-946234-62-3 (Hardcover)
978-3-946234-64-7 (Softcover)
DOI:10.5281/zenodo.824016

Cover and concept of design: Ulrike Harbort
Typesetting: Barb Penner, Felix Kopecky
Proofreading: Amr Zawawy, Andreas Hölzl, Aviva Shimelman, Bev Erasmus, Brett Reynolds, Christian Döhler, Cormac Anderson, Daniel Riaño, Eitan Grossman, Elizabeth Bogal-Allbritten, Ezekiel Bolaji, Gerald Delahunty, Ikmi Nur Oktavianti, Jean Nitzke, Ken Manson, Lea Schäfer, Linda Lanz, Maria Isabel Maldonado, Michael Rießler, Myke Brinkerhoff, Ludger Paschen, Prisca Jerono, Steve Pepper, Varun deCastro-Arrazola
Fonts: Linux Libertine, Arimo, DejaVu Sans Mono
Typesetting software: XeLaTeX

Language Science Press
Unter den Linden 6
10099 Berlin, Germany
langsci-press.org

Storage and cataloguing done by FU Berlin

no logo

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4 Noun morphology

A Moloko noun functions as the head of a noun phrase. A noun phrase can serve as an argument within a clause. The most prototypical nouns are those denoting something temporally stable, compact, physically concrete and made out of durable material, with a number of defining sub-features (Givón 2001: 50–51), but the class extends also to include a range of more abstract concepts. The morphosyntactic criteria for identifying a noun in Moloko include:

- They can be pluralised, taking the plural *=ahaj* (1–2, see Section 4.2.2).

(1) məze ahay[1]
mɪʒɛ=ahaj
person=Pl
'people'

(2) ayah ahay
ajax=ahaj
squirrel=Pl
'squirrels'

- They can take a possessive pronoun (3–4, see Section 3.1.2).

(3) hor əwla
hʷɔr=uwla
woman=1S.POSS
'my wife'

(4) sləre le ango
ɬɪrɛlɛ=aŋgʷɔ
work=2S.POSS
'your work'

[1]The first line in each example is the orthographic form. The second is the phonetic form (slow speech) with morpheme breaks.

- They can be counted (5–6, see Section 3.3.1).

(5) gəvah bəlen
gəvax bɪlɛŋ
field one
'one field'

(6) sla ahay kəro
ɬa=ahaj kʊ̈rɔ
cow=Pl ten
'ten cows'

- They can be modified by a demonstrative (7–8, see Section 3.2.1– Section 3.2.2)

(7) war nehe
war nɛhɛ
child DEM
'this child'

(8) ma ndana
ma ndana
word DEM
'that word' (just spoken)

- They can take the derivational morpheme *ga* resulting in a derived adjective (9–10, Section 5.3).

(9) gədan ga
gədaŋ ga
strength ADJ
'strong'

(10) ɓərav ga
ɓərav ga
heart ADJ
'perseverant'

- They can be modified by a derived adjective (11–12, see Section 4.3).

(11) memele malan ga
mɛmɛlɛ malaŋ ga
tree greatness ADJ
'a large tree'

(12) yam pəyececе ga
jam pijɛtʃɛtʃɛ ga
water coldness ADJ
'cold water'

Moloko nouns (or noun phrases) carry no overt case markers themselves; the function of the various noun phrases in a clause is indicated by the word order in the clause, pronominal marking in verbs (see Section 7.3), and adpositions (Section 5.6).

4.1 Phonological structure of the noun stem

Bow (1997c) studied syllable patterns in nouns. Table 4.1 (from Bow 1997c) shows examples of one- to three-syllable noun words of each possible syllable pattern, with and without labialisation and palatalisation prosodies. Syllable pattern is independent of prosody. Bow found many nouns that are CVC but very few that are CV. However, many CVCV nouns actually contain a reduplicated syllable, (13–15).

(13) dede
dɛdɛ
'grandmother'

(14) sese
ʃɛʃɛ
'meat'

(15) baba
'father'

There are many Moloko nouns whose first syllable is V. This syllable may be historically an old /a-/ prefix. Nouns with these /a-/ prefixes can only be discovered by comparing Moloko vocabulary with that of other related languages

Table 4.1: Syllable patterns in nouns with different prosodies

	Neutral	Gloss	Labialised	Gloss	Palatalised	Gloss
CV	*sla*	‘cow’				
CVC	*fat*	‘day/sun’	*hoɗ*	‘stomach’	*jen*	‘chance’
V.CV	*ava*	‘arrow’	*oko*	‘fire’	*elé*	‘eye’
V.CVC	*ahar*	‘hand/arm’	*otos*	‘hedgehog’	*enen*	‘snake’
CV.CV	*gala*	‘yard’	*sono*	‘joke’	*jere*	‘truth’
CV.CVC	*mavaɗ*	‘sickle’	*tohor*	‘cheek’	*pembez*	‘blood’
V.CV.CV	*adama*	‘adultery’	*oɓolo*	‘yam’	*eteme*	‘onion’
V.CV.CVC	*adangay*	‘stick’	*omboɗoc*	‘sugar cane’	*emelek*	‘bracelet’
CV.CV.CV	*manjara*	‘termite’	*mozongo*	‘chameleon’	*zetene*	‘salt’
CV.CV.CVC	*maslalam*	‘sword’	*dolokoy*	‘syphilis’	*debezem*	‘jawbone’

where the nouns do not carry the prefix. Table 4.2 illustrates three nouns in Moloko and in Mbuko.[2]

Table 4.2: /a-/ prefix in Moloko compared with Mbuko

Moloko	Mbuko	Gloss
[*anzakar*]	[*nzakar*]	'chicken'
[*azʊŋgʷɔ*]	[*zʊŋgʷɔ*]	'donkey'
[*ɛtɛmɛ*]	[*tɛmɛ*]	'onion'

Bow (1997c) discovered that tonal melodies on nouns are different than for verbs (see Section 6.7 for verb tone melodies). Table 4.3 (from Bow 1997c) shows how the underlying tone melodies are realised on the surface in one, two, and three syllable nouns. The left column gives examples with no depressor consonants (see Section 2.4.1), and the right column contains nouns with depressor consonants which effect different tone melodies. For one syllable nouns, only two tonal melodies are possible (H or L). For two syllable nouns, H, L, HL, or LH are possible. For three syllable nouns, H, L, HL, LH, HLH, and LHL are possible. Note that a surface mid tone can result from two sources. It can be an underlying high tone that has been lowered by a preceding low tone[3] or it can be an underlying low tone in a word with no depressor consonants.[4]

4.2 Morphological structure of the noun word

Moloko noun words are morphologically simple compared with verbs. A noun can be comprised of just a noun stem,[5] a compound noun, or a nominalised verb.

A noun stem can consist of a simple noun root (16) or two reduplicated segments (17). These reduplicated elements actually form two separate phonological words (note the word-final alteration *ŋ* in both segments) but are lexically one item.[6]

[2] Mbuagbaw (1995), Richard Gravina (2001). Judging from the number of nouns in the Moloko database that begin with m, there may be some kind of an old /*m*-/ prefix as well.

[3] Therefore there are no surface LH combinations since an underlying LH will be realised as LM.

[4] There are also very few examples of ML combinations in the surface form. The only example was [*kìmēdʒɛ̀*], an underlying LHL that had depressor consonants.

[5] We refer to the simplest form as a stem because it can be more complex than a root in that it can have an /a-/ prefix.

[6] Because there are word-final consonant changes for only /n/ and /h/, it is not known whether all similar reduplications necessarily form two separate phonological words.

Table 4.3: Tonal melodies on nouns

	No depressor consonants			Depressor consonants present		
Underlying tonal melody	Surface tone	Phonetic transcription	Gloss	Surface tone	Phonetic transcription	Gloss
H	H	[tsáf]	‘shortcut’	H	[záj]	‘peace’
	HH	[tʃétʃɛ́]	‘louse’	HH	[bɔ́ɣɔ́m]	‘cheek’
	HHH	[mɔ́lɔ́kʷɔ́]	‘Moloko’	HHH	[dəndárá]	‘lamp’
L	M	[ɗāf]	‘loaf’	L	[gàr]	‘difficulty’
	MM	[kərā]	‘dog’	LL	[dàndàj]	‘intestines’
	MMM	[mītɛnēŋ]	‘bottom’	LLL	[àdàŋgàj]	‘stick’
HL	HM	[mɛ́kɛ̄tʃ]	‘knife’	HL	[dʒɛ́rɛ̀]	‘truth’
	HMM	[átɔ̄kʷɔ̄]	‘okra’	HLL	[mɔ́gʷɔ̀dɔ̀kʷ]	‘hawk’
	HHM	[mɔ́sɔ́kʷɔ̄j]	‘vegetable sauce’	HHL	[ázɔ́ŋgʷɔ̀]	‘donkey’
LH	MH	[ɬəmáj]	‘ear/name’	LM	[bɔ̀gʷɔ̄m]	‘hoe’
	MMH	[kītēfɛ́r]	‘scoop’	LLM	[gəgəmāj]	‘cotton’
	MHH	[āmɛ́lɛ́k]	‘bracelet’	LMH	[gɛ̀mbīrɛ́]	‘dowry’
HLH	HMH	[ákɔ̄fɔ́m]	‘mouse’	HLM	[dɛ́dìlɛ̄ŋ]	‘black’
LHL	MHM	[səsájāk]	‘wart’	LML	[kìmɛ̄dʒɛ̀]	‘clothes’
				MHL	[məŋgáhàk]	‘crow’

(16) hay
hàj
'house'

(17) ndən nden
ndəŋ ndɛŋ
'traditional sword'

Nouns can be derived from verbs by a potentially complex process where a prefix, a suffix, and palatalisation are added. The prefix is *mə-* or *me-*, depending on whether the verb has the */a-/* prefix or not. The suffix is *-əye* or *-e*, depending on whether the verb root has one or more consonants. The suffix carries palatalisation which palatalises the whole word. The resulting form is an abstract noun which cannot take the plural *=ahay* but which otherwise has all the characteristics of a noun. This highly productive process is discussed further in Section 7.6 but two nominalisations are shown here. In (18) and (19), the underlying form, the 2S imperative, and the nominalised form are given. A one-syllable verb with no prefix takes the prefix *mə-* and the suffix *-əye* (18). A two consonant root with /a-/ prefix takes the prefix *me-* and the suffix *-e* (19).

(18)	/ v ^{e} /	ve	məvəye
		[v-ɛ]	[mɪ-v-ijɛ]
		pass[2S.IMP]-CL	NOM-pass-CL
		'Pass!' (spend time)	'year' (lit. passing of time)
(19)	/a-m l-aj/	məlay	meməle
		[məl-aj]	[mɛ-mɪl-ɛ]
		rejoice[2S.IMP]-CL	NOM-rejoice-CL
		'Rejoice!'	'joy'

Another nominalisation process can be postulated when noun stems and verb roots are compared. This second nominalisation process is irregular and non-productive. Table 4.4 illustrates a few examples and compares verb roots with their counterpart regular and irregular nominalisations. In each case, the consonants in the nouns in both nominalised forms are the same as those for the underlying verb root. These data show that in the irregular set of nominalisations, there is no set process of nominalisation — in some cases an */a-/* prefix is added (see lines 1 and 2); in other cases the prosody is changed to form the irregular nominalised form (from palatalised to neutral in line 4, from neutral to palatalised in lines 3, 5, and 6).

When the irregular nominalisations are compared with the regular nominalised form in Table 4.4, it can be seen that the two types of nouns relate to the sense of the verbs in different ways. The regular nominalisation refers to the event or the process itself (stealing, carrying, sending, etc.), whereas the irregular nominalisation denotes some kind of a referent involved in the event (thief, work, hand, etc.).

Table 4.4: Derived nouns

			Nominalisation	
Line	Underlying form of verb root	2s imperative	Regular	Irregular
1	*/k r/*	*kar-ay*	*mə-ker-e*	*akar*
		'Steal!'	'stealing'	'thief'
2	*/h r/*	*har*	*mə-hər-e*	*ahar*
		'Carry by hand!'	'carrying'	'hand'
3	*/h r ɓ^{o}/*	*hərɓ-oy*	*mə-hərɓ-e*	*hereɓ*
		'Heat up!'	'heating'	'heat'
4	*/t w/*	*təw-e*	*mə-təw-e*	*təway*
		'Cry!'	'crying'	'cry'
5	*/ɬ r/*	*slar*	*mə-slər-e*	*sləre*
		'Send!'	'sending'	'work'[a]
6	*/dz n/*	*jən-ay*	*məjene*	*jen*
		'Help!'	'helping'	'luck'

[a] Probably a compound of *slar* 'send/commission' + *ele* 'thing' (Section 4.3).

Two processes denominalise nouns; one forms adjectives (Section 4.3) and the other, adverbs (see Section 3.5.2). It is not possible to derive a verb from a noun root or stem in Moloko.

4.2.1 Subclasses of nouns

There are no distinct morphological noun classes in Moloko. Those nouns with an /a-/ prefix could perhaps be considered a separate class (see Section 4.1), but this phenomenon is more of an interesting historical linguistic phenomenon rather than a marker of synchronically different Moloko noun classes. There appears to be no phonological, grammatical or semantic reason for the prefix or other consequences of the presence versus absence of /a-/.

The plural construction is discussed in Section 4.2.2. Moloko has four subclasses of nouns that are distinguished by whether and how they become pluralised. These are concrete nouns (Section 4.2.3), mass nouns (Section 4.2.4), abstract nouns (Section 4.2.5), and irregular nouns (Section 4.2.6).

4.2.2 Plural construction

Noun plurals are formed by the addition of the clitic *ahay* which follows the noun or the possessive pronoun. The plural clitic carries some features of a separate phonological word and some of a phonologically bound morpheme. The neutral prosody of [=*ahaj*] does not neutralise the prosody of the word to which it cliticises (20, 21), which would indicate a separate phonological word (see Section 2.6.1).

(20) /atama^{e} =ahj/ → [ɛtɛmɛhaj]
onion =Pl 'onions'

(21) /akfam^{o} =ahj/ → [ɔk^{w}fɔmahaj]
mouse =Pl 'mice'

Two types of word-final changes indicate that the plural is phonologically bound to the noun. First, word-final changes for /h/ that demonstrate a word break do not occur between a noun and the plural (2).

Second, the stem-final deletion of /n/ before the /=ahj/ (shown in Table 4.5. adapted from Bow 1997c) indicates that the plural is phonologically bound to the noun (Section 2.6.1.5).

Table 4.5: Word-final changes of /n/ between noun and plural clitic

	Underlying form	Surface form			Gloss
Neutral	/g s n/	[gəsaŋ][=ahaj] 'bull' Pl	→	[gəsahaj]	'bulls'
Labialised	/t la l n^{o}/	[tʊlɔlɔŋ][=ahaj] 'heart' Pl	→	[tʊlɔlɔhaj]	'hearts'
Palatalised	/da d n^{e}/	[dɛdɛŋ][=ahaj] 'truth' Pl	→	[dɛdɛhaj]	'truths'

We consider the plural marker to be a type of clitic and not an affix[7] because

[7] Bow (1997c) considered the plural marker to be an affix.

it does show some evidence of phonological attachment and because it binds to words of different grammatical classes in order to maintain its position at the right edge of the noun phrase permanent attribution construction (see Section 5.4.2). The plural [=*ahaj*] will cliticise to a noun (22), possessive pronoun (23, 24), or pronoun. The plural modifies the entire construction in a permanent attribution construction (Section 5.1 example 10).

(22) /ɓ r ɻ n =ahj/ → [ɓərɻahaj]
mountain =Pl 'mountains'

(23) /g l n =ahn =ahj/ → [gəlahahaj]
kitchen =3S.POSS =Pl 'his/her kitchens'

(24) /plas^{e} =ahn =ahj/ → [pəlɛʃahahaj]
horse =3S.POSS =Pl 'his horses'

Note that in adjectivised noun phrases, other constituents must also be pluralised (Section 5.3 examples 47–49)

4.2.3 Concrete nouns

Concrete nouns (see Table 4.6) occur in both singular and plural constructions. The plural of these nouns is formed by the addition of the plural clitic *=ahay* within the noun phrase, following the head noun (further discussed in Section 5.1)▉ Concrete nouns can also take numerals.

4.2.4 Mass nouns

Mass nouns (shown in Table 4.7.) are non-countable — the singular form refers to a collective or a mass, e.g. *yam* 'water.' These nouns, when pluralised, refer to different kinds or varieties of that noun referent. These nouns cannot take numerals but they can be quantified (see Section 3.3.4).

4.2.5 Abstract nouns

Abstract nouns are ideas or concepts and as such they are not "singular" or "plural." In Moloko they do not take *=ahay,* e.g., *fama* 'intelligence, cleverness,' *sləre*le 'work.' Although they cannot be pluralised, they can be quantified (see Section 3.3.4).

Table 4.6: Concrete noun plural

Singular	Plural[a]	Plural with numeral
anjakar 'chicken'	*anjakar=ahay* 'chickens'	*anjakar=ahay zlom* 'five chickens'
sləmay 'ear'/'name'	*sləmay=ahay* 'ears'/'names'	*sləmay=ahay cew* 'two ears'/'two names'
jogo 'hat'	*jogo=ahay* 'hats'	*jogo=ahay makar* 'three hats'
albaya 'young man'	*albaya=ahay* 'young men'	*albaya=ahay kəro* 'ten young men'
dede 'grandmother'	*dede=ahay* 'grandmothers'	*dede=ahay məko* 'six grandmothers'

[a]Resyllabification occurs with the addition of plural marker. It is the same resyllabification that occurs at the phrase level (Section 2.5.2).

Table 4.7: Mass noun plural

Singular	Plural
yam 'water'	*yam=ahay* 'waters' (in different locations)
sese 'meat'	*sese=ahay* 'meats' (from different animals)
agwəjer 'grass'	*agwəjer=ahay* 'grasses' (of different species)

4.2.6 Irregular nouns

Three nouns, all of which refer to basic categories of human beings, have irregular plural forms in that the noun changes in some way when it is pluralised. The singular and plural forms for these nouns are shown in Table 4.8. For *hor* 'woman' and *zar* 'man,' the plural forms resemble the singular but involve insertion of the consonant *w* (*hawər* and *zawər*, respectively). For *war* 'child' the plural form is completely suppletive (*babəza*). For each of these three items, there is an alternate plural form which is formed by reduplicating the entire plural root. This alternate form is interchangeable with the corresponding irregular plural form.

Table 4.8: Irregular noun plurals

Singular	Plural	Alternate plural form
hor 'woman'	*hawər=ahay* 'women'	*hawər hawər* 'women'
zar 'man'	*zawər=ahay* 'men'	*zawər zawər* 'men'
war 'child'	*babəza=ahay* 'children'	*babəza babəza* 'children'

4.3 Compounding

In a language like Moloko where words meld together in normal speech, real compounds are difficult to identify, since two separate nouns can occur together juxtaposed within a noun phrase without a connecting particle (see Section 5.4.2). In general, if what might seem to be a compound phonologically can be analysed as separate words in a productive syntactic construction, we interpret them as such. We have found some genuine compound noun stems in Moloko, and proper names are often lexicalised compounds that in terms of their internal structure are structurally like phrases or clauses (Section 4.4).

The grammatical and phonological criteria used to identify a compound are fourfold:

- The compound patterns as a single word in whatever class it belongs to, instead of as a phrase (that is, in terms of its outer distribution),
- The compound is seen as a unit in the minds of speakers,

- The compound has a meaning that is more specific than the semantic sum of its parts,
- The compound exhibits no word-final phonological changes that would necessitate more than one phonological word (see Section 2.6); for example, there are no word-final changes ([ŋ] and [x]) and prosodies spread over the entire compound.

Table 4.9 shows several compounds made from *ele* 'thing,' placed both before and after another root. The compounds in the table illustrate that compounds can be made from a noun plus another noun root (lines 1–3), or a noun plus a verb root (line 4). Note that when *ele* 'thing' is the leftmost root in a compound (lines 1–2), *ele* loses its own palatalisation prosody, an indication that the roots comprise a phonological compound. When it is the rightmost root in the compound, its palatalisation prosody spreads leftwards, affecting the whole word.

Table 4.9: Compounds made with *ele* 'thing'

Line	Compound noun	Elements	
1	*alahar*	*ele*	*ahar*
	'weapon, bracelet'	thing	hand
2	*oloko*	*ele*	*oko*
	'wood'	thing	fire
3	*memele*	*mama*	*ele*
	'tree'	mother	thing
4	*slərele*	*slar*	*ele*
	'work'	send	thing

Table 4.10 shows two compounds made with *ma* 'mouth' or 'language.'

A more complex example is *ayva* 'inside-house.' It could be analysed as /*a hay ava*/ 'at house in'; however it distributes not as a locative adpositional phrase, but rather as a noun, in that it can be possessed (25) and it can be subject of the verb /s/ 'want' (26).

(25) Atərava ayva ahan.
a-tər=ava ajva =ahaŋ
3s-enter=in inside house =3s.poss
'He goes into his house.'

Table 4.10: Compounds made with ma

Compound	Elements
mahay 'door'	*ma* *hay* mouth house
maslar 'front teeth'	*ma* *aslar* mouth tooth

(26) Asan ayva bay.
a-s=aŋ ajva baj
3s-please=3s.io inside house NEG
'He doesn't want [to go] inside the house.' (lit. the inside of the house does not please him)

4.4 Proper Names

Moloko proper nouns (names of people, tribes, and places) can be morphologically simple but often are compounds. In the case of names for people, the names often indicate something that happened around the time of the baby's birth. Names can also be compounds that encode proverbs. Thus, proper names can be simple nouns, compounds, prepositional phrases, verbs, or complete clauses. Table 4.11. illustrates some proper names that are compounds, and shows the components of the name where necessary. Lines 1–5 show simple proper names and lines 6–11 show proper names that are compounds.

Twins are usually given special names according to their birth order, *Masay* 'first twin,' *Alәwa* 'second twin.' A single child after a twin birth is named *Aban*.

Table 4.11: Proper names

Line	Name	Type of name	Components of name (where applicable)	Meaning
1	*Ɉere*	person		'truth'
2	*Gajəlah*	person		'broken piece of pottery'
3	*Ftak*	person/village		(no meaning outside its name)
4	*Mokwəyo*	village		(no meaning outside its name)
5	*Maslay*	tribe		(no meaning outside its name)
6	*Məloko*	language	*ma aloko* language=1PIN.POSS	'our language' (Moloko)
7	*Anjakəyma*	person	*a-njak-ay ma* 3S-find-CL word	'here comes trouble'
8	*Kosəyməze*	person	*kos-ay məze* unite[2S.IMP]-CL people	'he unites the people'
9	*Kavəyaka*	person	*kə avəya aka* on suffering on	'in suffering'
10	*Angaɗay*	person	*a-ngaɗ-ay* 3S-rejoice-CL	'he is joyful'
11	*Mərəyabay*	person	*məray abay* shame EXT+NEG	'no shame'

5 Noun phrase

Moloko, an SVO language, has head initial noun phrases. (1–4) show a few examples of noun phrases. A noun (*nafat* 'day' and *ləhe* 'bush' in 1), multiple nouns (*war elé háy* 'millet grain' in 3 and *war dalay* 'girl' in 4) or free pronoun (*ne* 1S 2) is the head of the NP. In the examples in this chapter, the noun phrases are delimited by square brackets.[1]

(1) [Nafat enen] anday atalay a [ləhe].
[nafat ɛnɛŋ] a-ndaj a-tal-aj a [lɪhɛ]
day another 3S-PRG 3S-walk-CL at bush
'One day, he was walking in the bush.'

(2) [Ne ahan] aməgəye.
[nɛ =ahaŋ] amɪ-g-ijɛ
1S =3S.POSS DEP-do-CL
'It was me (emphatic) that did it.'

(3) Cəcəngehe na, [war elé háy bəlen] na, ásak asabay.
tʃɪtʃɪŋgɛhɛ na [war ɛlɛ haj bɪlɛŋ] na á-sak asa-baj
now PSP child eye millet one PSP 3S +IFV-multiply again-NEG
'And now, one grain of millet, it doesn't multiply anymore.'

(4) Disobedient Girl, S. 38
Metesle anga [war dalay ngendəye].
mɛ-tɛɬ-ɛ aŋga [war dalaj ŋgɛndijɛ]
NOM-curse-CL POSS child girl DEM
'The curse belongs to that young woman.'

In this chapter, noun phrase modifiers and the order of constituents are discussed (Section 5.1), using simple noun heads as examples. Then, noun heads are discussed (Section 5.2). Next, derived adjectives are discussed, which consist of a

[1] The first line in each example is the orthographic form. The second is the phonetic form (slow speech) with morpheme breaks.

noun plus the adjectiviser (Section 5.3). After that, four kinds of noun plus noun constructions are discussed, the genitive construction (Section 5.4.1), the permanent attribution construction (Section 5.4.2), relative clauses (Section 5.4.3), and coordinated noun phrases (Section 5.5). Finally, adpositional phrases are treated in Section 5.6.

Some things one might expect to see in a noun phrase are not found in Moloko noun phrases, but are accomplished by other constructions. For example, some attributions are expressed at the clause level using an intransitive clause (see Section 9.2.4.2) or transitive verb with indirect object (see Section 9.2.3), and comparison is done through an oblique construction (see Section 5.6.1).

5.1 Noun phrase constituents

A noun head can be modified syntactically by the addition of other full-word or clitic elements. In the examples which follow, the noun phrases are delimited by square brackets. Examples are given in pairs, where the noun phrase in the first of each pair is the direct object of the verb. In the second example of each pair, the noun phrase is the predicate in a predicate nominal construction (see Section 10.1.2). Note that most of the predicate nominal constructions require the presupposition marker *na* (Chapter 11). The constituents being illustrated are bolded in each example.

A noun modified by the plural marker (5–6) (see Section 4.2.2).

(5) Nə́mənjar [awak **ahay**].
nə́-mənzar [awak=**ahaj**]
1S+IFV-see goat=Pl
'I see goats.'

(6) [Awak **ahay** na], [səlom **ahay** ga].
[awak=**ahaj** na] [sʊ̈lɔm=**ahaj** ga]
goat=Pl PSP good=Pl ADJ
'The goats [are] good.'

A noun modified by a possessive pronoun (7–8) (see Section 3.1.2).

(7) Nə́mənjar [awak **əwla**].
nə́-mənzar [awak=**uwla**]
1S+IFV-see goat=1S.POSS
'I see my goat.'

(8) [Awak **əwla** na], [səlom ga].
[awak=**uwla** na] [sʊ̈lɔm ga]
goat=1S.POSS PSP good ADJ
'My goat [is] good.'

A noun modified by an unspecified pronoun (9–10) (see Section 3.1.5).

(9) Nə́mənjar [awak **enen**].
nə́-mənzar [awak **ɛnɛŋ**]
1S+IFV-see goat another
'I see another goat.'

(10) [Awak **enen** ahay na], [səlom ahay ga].
[awak **ɛnɛŋ**=ahaj na] [sʊ̈lɔm=ahaj ga]
goat other=Pl PSP good=Pl ADJ
'Other goats [are] good.'

A noun modified by a numeral (11–12) (see Section 3.3).

(11) Nə́mənjar [awak əwla ahay **makar**].
nə́-mənzar [awak=uwla=ahaj **makar**]
1S+IFV-see goat=1S.POSS=Pl three
'I see my three goats.'

(12) [awak əwla ahay **makar ahay** na], [səlom ahay ga].
[awak=uwla=ahaj **makar=ahaj** na] [sʊ̈lɔm=ahaj ga]
goat=1S.POSS=Pl three=Pl PSP good=Pl ADJ
'My three goats [are] good.'

A noun modified by a derived adjective (13–14) (see Section 5.3).

(13) Nə́mənjar [awak ahay **malan ahay ga**].
nə́-mənzar [awak=ahaj **malaŋ=ahaj ga**]
1S+IFV-see goat=Pl great=Pl ADJ
'I see the big goats.'

(14) [awak ahay **malan ahay ga** na], [səlom ahay ga].
[awak=ahaj **malaŋ=ahaj ga** na] [sʊ̈lɔm=ahaj ga]
goat=Pl great=Pl ADJ PSP good=Pl ADJ
'The big goats [are] good.'

A noun modified by a demonstrative (15–16) (see Section 3.2).

(15) Nə́mənjar [awak ahay makar **ngəndəye**].
nə́-mənzar [awak=ahaj makar **ŋgɪndijɛ**]
1S+IFV-see goat=Pl three DEM
'I see those three goats.'

(16) [Awak ahay makar **ngəndəye** na], [səlom ahay ga].
[awak=ahaj makar **ŋgɪndijɛ** na] [sʊ̈lɔm=ahaj ga]
goat=Pl three DEM PSP good=Pl ADJ
'Those three goats [are] good.'

A noun modified by a relative clause (17–18) (see Section 5.4.3).

(17) Nə́mənjar [awak əwla ahay makar [**nok aməvəlaw**].]
nə́-mənzar [awak=uwla=ahaj makar [**nɔkʷ amə-vəl=aw**]]
1S+IFV-see goat=1S.POSS=Pl three 2S DEP-give=1S.IO
'I see my three goats that you gave to me.'

(18) [awak əwla ahay makar [**nok aməvəlaw**] na], [səlom ahay ga].
[awak=uwla=ahaj makar [**nɔkʷ amə-vəl=aw**] na] [sʊ̈lɔm=ahaj ga]
goat=1S.POSS=Pl three 2S DEP-give=1S.IO PSP good=Pl ADJ
'My three goats that you gave me [are] good.'

A noun modified by a non-numeral quantifier (19–20) (see Section 3.3.4).

(19) Nə́mənjar [awak ahay **gam**].
nə́-mənzar [awak=ahaj **gam**]
1S+IFV-see goat=Pl many
'I see many goats.'

(20) [Awak ahay **gam** na], [səlom ahay ga].
[awak=ahaj **gam** na] [sʊ̈lɔm=ahaj ga]
goat=Pl many PSP good=Pl ADJ
'Many goats [are] good.'

A noun modified by a numeral and the adjectiviser *ga* (21–22).

(21) Nə́mənjar [awak ahay məfaɗ **ga**].
nə́-mənzar [awak=ahaj mʊ̈faɗ **ga**]
1S+IFV-see goat=Pl four ADJ
'I see the four goats.'

(22) [Awak ahay məfaɗ **ga**], [səlom ahay ga].
[awak=ahaj mʊfaɗ **ga**] [sʊlɔm=ahaj ga]
goat=Pl four ADJ good=Pl ADJ
'The four goats [are] good.'

The constituent order is shown in Figure 5.1, followed by illustrative examples (23–30). Not all constituents can co-occur in the same clause. There are restrictions on how complex a noun phrase can normally become. Restrictions include the fact that that quantifiers cannot co-occur in the same noun phrase as either derived adjectives or numerals. The order of relative clause and demonstrative does not appear to be strict. Note that nominal demonstratives are in a different position than local adverbial demonstratives.

head noun	possessive	plural	numeral	relative clause	nominal demonstrative	quantifier	ADJ	local adverbial demonstrative

Figure 5.1: Structure of the Moloko noun phrase

Modification by possessive pronoun and plural marker (23–24).

(23) Nə́mənjar [awak əwla ahay].
nə́-mənzar [awak=uwla=ahaj]
1S+IFV-see goat=1S.POSS=Pl
'I see my goats.'

(24) [Awak əwla ahay na], [səlom ahay ga].
[awak=uwla=ahaj na] [sʊlɔm=ahaj ga]
goat=1S.POSS=Pl PSP good=Pl ADJ
'My goats [are] good.'

Modification by nominal demonstrative, relative clause, and plural marker (25–26).

(25) Nə́mənjar [awak ahay ngəndəye [nok aməvəlaw]].
nə́-mənzar [awak=ahaj ŋgɪndijɛ [nɔkʷ amə-vəl=aw]]
1S+IFV-see goat=Pl DEM 2S DEP-give=1S.IO
'I see those goats that you gave me.'

(26) [Awak əwla ahay [nok aməvəlaw] ngəndəye na], [səlom ahay ga].
[awak=uwla=ahaj [nɔkʷ amə-vəl=aw] ŋgɪndijɛ na] [sʊ̈lɔm=ahaj ga]
goat=1S.POSS=Pl 2S DEP-give=1S.IO DEM PSP good=Pl ADJ
'Those goats of mine that you gave me [are] good.'

Modification by quantifier, relative clause, and plural marker (27–28).

(27) Nə́mənjar [awak ahay gam] [nok aməvəlaw va na].
nə́-mənzar [awak=ahaj gam] [nɔkʷ amə-vəl=aw =va na]
1S+IFV-see goat=Pl many 2S DEP-give=1S.IO =PRF PSP
'I see many goats, the ones that you gave me.'

(28) [Awak əwla ahay [nok aməvəlaw] jəyga na], [səlom ahay ga].
[awak=uwla=ahaj [nɔkʷ amə-vəl=aw] dʒijga na] [sʊ̈lɔm=ahaj ga]
goat=1S.POSS=Pl 2S DEP-give=1S.IO all PSP good=Pl ADJ
'All of my goats that you gave to me [are] good.'

Modification by quantifier, nominal demonstrative, and plural marker (29–30).

(29) Nə́mənjar [awak ahay ngəndəye jəyga].
nə́-mənzar [awak=ahaj ŋgɪndijɛ dʒijga]
1S+IFV-see goat=Pl DEM all
'I see all those goats.'

(30) [Awak ahay ngəndəye jəyga na], [səlom ahay ga].
[awak=ahaj ŋgɪndijɛ dʒijga na] [sʊ̈lɔm=ahaj ga]
goat=Pl DEM all PSP good=Pl ADJ
'All of those goats [are] good.'

5.2 Noun phrase heads

Noun phrases can have a head that is either a simple noun (31), nominalised verb (32, Section 5.2.1), or a pronoun (33, Section 5.2.2). In the examples, the noun phrases are delimited by square brackets and the head is bolded.

(31) [**Albaya** ahay] tánday táwas.
[**albaja**=ahaj] tá-ndaj tá-was
young man=Pl 3P+IFV-PROG 3P+IFV-cultivate
'The young men are cultivating.'

(32) [**Məzəme** əwla] amanday acəɓan ana Mana.
[**mɪ-ʒum-ɛ**=uwla] ama-ndaj a-tsəɓ=aŋ ana Mana
NOM-eat-CL=1S.POSS DEP-PROG 3S-overwhelm=3S.IO DAT Mana
'[The act of] my eating is irritating Mana.'

(33) [**Ndahan** ga] ánday áwas.
[**ndahaŋ** ga] á-ndaj á-was
3S ADJ 3S+IFV-PROG 3S+IFV-cultivate
'He himself is cultivating.'

5.2.1 Noun phrases with nominalised verb heads

When the head noun is a nominalised verb, the other elements in the noun phrase represent clausal arguments of the nominalised verb. The modifying noun represents the direct object Theme of the nominalised verb and the possessive pronoun or noun in a modifying genitive construction represents the subject of the verb. In (34), the noun modifier *ɗaf* 'millet loaf' represents the direct object of the nominalised verb *məzəme* 'eating' and the 3P possessive pronoun *ata* represents the subject of the nominalised verb, i.e., 'they are eating millet loaf.'

(34) A [məzəme ɗaf ata] ava na, tázlapay bay.
a [mɪ-ʒʊm-ɛ ɗaf=atəta] ava na tá-ɣap-aj baj
at NOM-eat-CL millet loaf=3P.POSS in PSP 3P+IFV-talk-CL NEG
'While eating (lit. in the eating of their millet loaf), they don't talk to each other.'

In (35), *məndəye ango* literally 'your lying down' indicates that 'you are lying.' The possessive pronoun *ango* is the subject of the nominalised verb *məndəye*. In (36), both subject and direct object of the nominalised verb are present. *Mana*, the noun in the genitive construction (see Section 5.4.1) codes the subject of the nominalised verb and the 'body-part' verbal extension *va* is the direct object, i.e., 'Mana is resting his body.'

(35) Snake, S. 19
Anjakay nok ha a slam [məndəye ango] ava.
à-nzak-aj nɔkʷ ha a ɬam [mɪ-nd-ijɛ=aŋgʷɔ] ava
3S+PFV-find-CL 2S until at place NOM-sleep-CL=2S.POSS in
'It found you even at the place you were sleeping.' (lit. it found you until in your sleeping place)

(36) [membese va a Mana]
[mɛ-mbɛʃ-ɛ va a Mana]
NOM-rest-CL body GEN Mana
'Mana's rest' (lit. resting body of Mana)

5.2.2 Noun phrases with pronoun heads

A free pronoun head is more limited in the number of modifiers that it can take than a lexical noun head. A pronoun head can only be modified by the adjectiviser (37–38) or possessive pronoun in emphatic situations (39–40) (see Section 3.1.1.2). Noun phrases with pronoun heads can not be modified by plural, number, demonstrative, adjective, or relative clause.[2] The pronoun heads are bolded in the examples.

(37) [**Ndahan ga**] [aməgəye].
[**ndahaŋ ga**] [amɪ-g-ijɛ]
3S ADJ DEP-do-CL
'He is the one that did it.'

(38) [Amədəye elele nəndəye na], [**ne ga**].
[amɪ-d-ijɛ ɛlɛlɛ nɪndijɛ na] [**nɛ ga**]
DEP-prepare-CL sauce DEM PSP 1S ADJ
'The one that prepared the sauce there [was] me.'

(39) [**Ne ahan**] [aməgəye].
[**nɛ=ahaŋ**] [amɪ-g-ijɛ]
1S=3S.POSS DEP-do-CL
'I myself [am] the one that did it.'

[2] Pronouns can be the subject of a relative clause, see (17) and Section 5.4.3.

(40) [**Ne ahan**] nólo a kosoko ava.
[**nɛ=ahaŋ**] nɔ́-lɔ a kɔsɔkʷɔ ava
1S=3S.POSS 1S+IFV-go at market in
'I myself am going to the market.'

5.3 Derived adjectives

All adjectives in Moloko are derived from nouns – there is no separate grammatical class of adjectives.[3] Adjectives are derived from nouns by a very productive process in which the morpheme *ga* follows the noun. Table 5.1. illustrates this process for simple nouns.

Table 5.1: Derived adjectives

Noun		Derived Adjective	
səlom	'goodness'	*səlom ga*	'good'
gədan	'force'	*gədan ga*	'strong'
deden	'truth'	*deden ga*	'true'
gogwez	'redness'	*gogwez ga*	'red'
dalay	'girl'	*dalay ga*	'feminine'
bərav	'heart'	*bərav ga*	'with ability to support suffering'[a]
ɗaz ɗaz	'redness'	*ɗaz ɗaz ga*	'red'
kwəleɗeɗe	'smoothness'	*kwəleɗeɗe ga*	'smooth'
pəyececе	'coldness'	*pəyececе ga*	'cold'
malan	'greatness'	*malan ga*	'great' / 'big'
hwəsese	'smallness'	*hwəsese ga*	'small'

[a] An idiom.

Nominalised verbs (see Section 7.6) can be further derived into adjectives by the adjectiviser. The process is illustrated in Table 5.2.

5.3.1 Structure of noun phrase containing *ga*

Ga is the final element of a noun phrase. Examples show the adjectivised nouns in complete clauses. In the examples in this section, the adjectiviser *ga* is bolded and

[3] There are no comparative adjectives in Moloko – comparison is done by means of a clause construction using a prepositional phrase described in Section 5.6.1.

Table 5.2: Adjectives derived from nominalised verbs

Verb	Nominalised verb	Derived adjective
e-nj-e	*mə-nj-əye*	*mə-nj-əye* *ga*
3S-sit-CL	NOM-sit-CL	NOM-sit-CL ADJ
'He sat.'	'sitting' (the event)	'seated' (adjective)
a-*dar-ay*	*me-der-e*	*me-der-e* *ga*
3S-plant-CL	NOM-plant-CL	NOM-plant-CL ADJ
'He planted.'	'planting' (the event)	'planted' (adjective)

the whole noun phrase construction including *ga* is delimited by square brackets.

(41) Nazalay [awak gogwez **ga**].
nà-z=alaj [awak gʷɔgʷeʒ **ga**]
1S+PFV-take=away goat redness ADJ
'I took a red goat.'

(42) Cicada, S. 5
Tənjakay [agwazla malan **ga**] a ləhe.
tə-nzak-aj [agʷaɮa malaŋ **ga**] a lɪhɛ
3P-find-CL spp. of tree bigness ADJ at bush
'They found a big tree (of a specific species) in the bush.'

(43) [war enen] [cezlere **ga**]
[war ɛnɛŋ] [tʃɛɮɛrɛ **ga**]
child another disobedient ADJ
'Another child [is] disobedient.'

We consider that the adjectiviser is a separate phonological word with semantic scope over the preceding noun phrase.[4] The adjectiviser maintains its position at the right edge of a noun phrase regardless of the noun phrase components (44–49). This fact indicates that it might be a clitic. However, we find no undisputable evidence that it is phonologically bound to the noun. Example (42) shows noun-final changes /n/ → [ŋ] before *ga*. These changes might be due to assimilation of

[4] Bow (1997c) called this morpheme a noun affix. Also, for simple adjectivised noun constructions, speakers consider the adjectiviser to be part of the same word as the noun that is modified. However, in the absence of evidence for phonological bondedness, we consider *ga* to be a separate phonological word.

/n/ to point of articulation of /g/ within a word (see Section 2.2). However, the same change would occur at a word break, with word-final changes to /n/ (see Section 2.2.4 and Section 2.6.1.2).[5] Also, the prosody of *ga* does not neutralise any prosody on the word to which it is bound.

(44) Tákəwala [kəra mətece elé **ga**.]
tá-kuw=ala [kəra mɪ-tɛtʃ-ɛ ɛlɛ **ga**]
3P+IFV-seek=to dog NOM-close-CL eye ADJ
'They look for a puppy that hasn't opened its eyes yet.' (lit. a dog closing eyes)

(45) Values, S. 47
Ləme Məloko ahay na, nəmbəɗom a dəray ava na,
lɪmɛ Mʊlɔkʷɔ=ahaj na nə̀-mbʊɗ-ɔm a dəraj ava na
1PEX Moloko=Pl PSP 1S+PFV-change-1PEX at head in PSP
'We the Moloko, we have become' (lit. we the Moloko, we have changed in the head [to be])

ka [kərkaɗaw ahay nə hərgov ahay **ga**] a ɓərzlan ava na.
ka [kərkaɗaw=ahaj nə hʊrgʷɔv=ahaj **ga**] a ɓərɣaŋ ava na
like monkey=Pl with baboon=Pl ADJ at mountain in PSP
'like the monkeys and baboons in the mountains'

When the head noun in a phrase that contains the adjectiviser *ga* is pluralised, both the head noun and the noun modifier are pluralised as well. Compare the singular noun phrase in (46) with the pluralised noun phrase in (47) where both the head noun and adjective are pluralised. The same pattern of pluralisation is shown in (48–49). Note that the plural is not becoming individually 'adjectivised.' but rather the entire noun phrase is adjectivised. Note also that the adjectiviser always maintains its position at the right edge of the noun phrase.

[5]We have not no examples of word-final alterations of /h/ before *ga*.

(46) Naharalay [awak babəɗ **ga**] a mogom.
nà-har=alaj [awak babəɗ **ga**] a mɔgʷɔm
1S+PFV-carry=away goat white ADJ at home
'I carried the white goat home.'

(47) Naharala [awak ahay babəɗ ahay **ga**] a mogom.
nà-har=alaj [awak=ahaj babəɗ=ahaj **ga**] a mɔgʷɔm
1S+PFV-carry=away goat=Pl white=Pl ADJ at home
'I carried the white goats home.'

(48) [Məze ahay səlom ahay **ga** na], tázala təta bay.
[mɪʒɛ=ahaj sʊlɔm=ahaj **ga** na] tá-z=ala təta baj
person=Pl good=Pl ADJ PSP 3P+IFV-take=to ability NEG
'Good people (lit. people with the quality of goodness), they can't bring [it].'

(49) Values, S. 49
Nde [məze ahay gogor ahay **ga** na] ngama.
ndɛ [mɪʒɛ=ahaj gʷɔgʷɔr=ahaj **ga** na] ŋgama
so person=Pl elder=Pl ADJ PSP better
'So, our elders [have it] better.'

Derived adjectives can be negated by following them with the negative *bay*.

(50) [Agwəjer mədere **ga** bay na], natoho.
[agʷədʒɛr mɪ-dɛr-ɛ **ga** baj na] natɔhʷɔ
grass NOM-braid-CL ADJ NEG PSP over there
'The grass [that is] not thatched [is] over there.'

(51) [Yam pəyececе **ga** bay na], acar bay.
[jam pijɛtʃɛtʃɛ **ga** baj na] à-tsar baj
water coldness ADJ NEG PSP 3S+PFV-taste good NEG
'Lukewarm water doesn't taste good.'

5.3.2 Functions of noun phrases containing *ga*

The morpheme *ga* has two other functions besides adjectiviser.[6] *Ga* can also function as a discourse demonstrative to make the noun definite and even sometimes emphatic. Its function to render a pronoun emphatic is discussed in Section 3.1.1.2. A set of examples from the Cicada story illustrates the discourse function. Examples (52–54) are from lines 5, 12 and 18 respectively (the Cicada story is found in its entirety in Section 1.6). The first mention in the narrative of *agwazla* 'tree of a particular species' is shown in (52). The tree is introduced as *agwazla malan ga* 'a large tree.' Later on in the narrative, the particular tree that was found is mentioned again (53 and 54). In these occurrences however, the tree is not modified by an adjective, but the noun is simply marked by *ga* (*agwazla ga* 'this tree of a particular species' in 53 and *memele ga* 'the tree' in 54). In these last two examples, *ga* indicates that 'tree' is referring to the particular tree previously mentioned in the discourse.

(52) Cicada, S. 5
Təlo tənjakay [agwazla malan **ga**] a ləhe.
tə-lɔ tə-njak-aj [agʷaɣa malaŋ **ga**] a lɪhɛ
3P+PFV-go 3P+PFV-find-CL spp. of tree largeness ADJ at bush
'They went and found a large tree (a particular species) in the bush.'

(53) Cicada, S. 14
[Agwazla **ga**] səlom ga aɓəsay ava bay.
[agʷaɣa **ga**] sʊlɔm ga aɓəsaj ava baj
spp.of.tree ADJ goodness ADJ blemish EXT NEG
'This tree is good; it has no faults.'

(54) Cicada, S. 20
Náamənjar na alay [memele **ga** ndana] əwɗɛ.
náá-mənzar na=alaj [mɛmɛlɛ **ga** ndana] uwɗɛ
1S+POT-see 3S.DO=away tree ADJ DEM first
'First I want to see this tree that you spoke of.'

In another story about a reconciliation ceremony between two warring parties (the Moloko and the Mbuko), the ceremony requires the cutting in two of

[6] These two functions for *ga* do not indicate homophones. We interpret all cases of *ga* as the same morpheme since all instances pattern in exactly the same way even when their function is different. We conclude that the same morpheme is functioning at the noun phrase level as an adjectiviser and at the discourse level in definiteness and emphasis.

a puppy. Which side received which part was a key element to the outcome of the ceremony. In the text, the first mention of *dəray* 'the head' (55) is marked with *ga* – it is an expected part of the narrative frame. When the outcome of the ceremony revealed that the Moloko got the head part (and so 'won' the contest) and the Mbuko received the hind parts, both are adjectivised: *dəray ga* 'the head' and *mətenen ga* 'the hindparts' (56). Note that (56) consists of two predicate possessive verbless clauses (see Section 10.1.2), each with a predicate that is an adjectivised noun.

(55) Asa ləme nə́gəsom na [dəray **ga**] na, [səlom ga].
asa lɪmɛ nə́-gʊ̋s-ɔm na [dəraj **ga**] na [sʊ̋lɔm ga]
if 1PEX 1S+IFV-catch-1PEX 3S.DO head ADJ PSP goodness ADJ
'If we got the head, [it would be] good.'

(56) [Dəray **ga**] anga ləme [mətenen **ga**] anga Mboko ahay.
[dəraj **ga**] aŋga lɪmɛ [mɪtɛnɛŋ **ga**] aŋga mbɔkʷɔ=ahaj
head ADJ POSS 1PEX hindparts ADJ POSS Mbuko=Pl
'The head [is] ours; the hindparts [are] the Mbuko's.'

Compare (57) and (58) (from lines 1 and 39, respectively of the Disobedient Girl story; shown in its entirety in Section 1.5). The noun *bamba* 'story,' when first mentioned in the introduction of the story (57) is not adjectivised. When the same noun is mentioned again in the conclusion (58), it is adjectivised *ma bamba ga* 'the story.'

(57) Disobedient Girl, S. 1
[Bamba] [bamba] kəlo dərgoɗ
[bamba] [bamba] kʊ̋lɔ dʊ̋rgʷɔɗ
story story under silo
'Once upon a time…' (lit. there's a story under the silo)

(58) Disobedient Girl, S. 39
Ka nehe [ma bamba **ga**] andavalay.
ka nɛhɛ [ma bamba **ga**] à-ndava=alaj
like here word story ADJ 3S+PFV-finish=away
'It is like this the story ends.'

In the Cows in the Field story (not illustrated in this work) *ga* is used to mark the five brothers (previously mentioned) whose field was damaged and who had

to go to the police to resolve the problem (59 and 60), and the problem (*ma ga* 'that word') that developed when they couldn't find justice (61 and 62).

(59) [Məlama ahay məfaɗ **ga**] tanday tágalay ta [sla ahay na] a Kədəmbor.
[məlama =ahaj məfaɗ **ga**] ta-ndaj tá-gal-aj ta [ɬa =ahaj na]
brother =Pl four ADJ 3P-PRG 3P+IFV-drive-CL 3P.DO COW =Pl PSP

a Kʊdʊmbɔr
to Tokembere

'The four brothers, they were driving the cows to Tokembere.'

(60) Nəbohom ta alay ləme [zlom **ga**].
nə-bɔh-ɔm ta=alaj lɪmɛ [ʒɔm **ga**]
1SPEX+PFV-pour-1PEX 3P.DO=away 1PEX five ADJ

'We gave them [our identity cards], we [were] the five [whose fields were damaged].'

(61) Sen a slam na ava nendəge na, nəmənjorom [ma **ga**].
ʃɛŋ a ɬam na ava nɛndɪgɛ na nə-mʊnzɔr-ɔm [ma **ga**]
IDwalk at place PSP in DEM PSP 1S+PFV-see-1PEX word ADJ

'Walking (later), at that place, we saw the problem.'

(62) Nəbohom [ma **ga**] a brəygad ava.
nə-bɔh-ɔm [ma **ga**] a brijgad ava
1SPEX+PFV-pour-1PEX word ADJ at Brigade in

'We took the problem to the Brigade.'

The emphatic function of *ga*[7] mentioned above is even more obvious in the Values exhortation (see Section 1.7). Line 7 in the Values exhortation, shown in (63), alludes to the commandments that *Hərmbələm awacala kə okor aka* 'God wrote on the stone,' and line 12 (64) exhorts the hearer *kóogəsok ma Hərmbələm* 'you should accept the word of God.' Further in the text, the mention of *anga Hərmbələm ga* 'the very [word] of God himself' (65 from line 28) draws attention to the fact that the people don't accept what God himself wrote on the stone tablets. This time, the marker *ga* has an emphatic function.

[7]The emphatic function of *ga* is discussed with respect to pronouns in Section 3.1.1.2.

(63) Values, S. 7
Hərmbəlom awacala kə okor aka.
Hʊrmbʊlɔm à-wats=ala kə ɔkʷɔr aka
God 3S+PFV-write=to on stone on
'God wrote them on the stone [tablet].'

(64) Values, S. 12
Yawa nde ele nehe ɗəw, kóogəsok ma Hərmbəlom.
jawa ndɛ ɛlɛ nɛhɛ ɗuw kɔ́ɔ́-gʷʊs-ɔkʷ ma Hʊrmbʊlɔm
well so thing DEM also 2S+POT-catch-2P word God
'So, this thing here, you should accept the word of God.'

(65) Values, S. 28
[Anga Hərmbəlom **ga**] kagas asabay.
[aŋga Hʊrmbʊlɔm **ga**] kà-gas asa-baj
POSS God ADJ 2S+PFV-catch again-NEG
'The very [word] of God himself you no longer accept.'

5.4 Nouns as modifiers

There are three types of constructions where nouns figure in the modification of another head noun in Moloko. They are:

- Genitive construction. A head noun followed by a genitive noun phrase with the genitive particle *a* (66) (see Section 5.4.1).
- Permanent attribution construction. Two nouns are juxtaposed with no intervening particle (67) (see Section 5.4.2).
- Relative clause (68) (see Section 5.4.3).

(66) [war [a bahay]]
[war [a bahaj]]
child GEN chief
'the chief's child'

(67) [zar Məloko]
[zar mʊlɔkʷɔ]
man Moloko
'Moloko man'

(68) [war [aməgəye cəɗoy] akaray zana aloko apazan.
[war [amɪ-g-ijɛ tsʊɗoj] à-kar-aj zana=alɔkʷɔ apazaŋ
child DEP-do-CL wickedness 3S+PFV-steal-CL clothes=1PIN yesterday
'The child that did wickedness stole our clothes yesterday.'

5.4.1 Genitive construction

The genitive construction follows the head noun in a noun phrase. The genitive noun phrase consists of the genitive particle *a* plus a noun phrase expressing the possessor (69 and 70).

(69) [zar [a Hawa]]
[zar [a Hawa]]
man GEN Hawa
'Hawa's husband'

(70) [hay [a baba ango]]
[haj [a baba=aŋgʷɔ]]
house GEN father=2S.POSS
'your father's house'

Bow (1997c) remarks that the particle *a* appears to carry the tone HL, with a floating L.[8] She demonstrates in (71) that the floating low tone lowers the high tone of the noun (*háy*) to become M.

(71) [ɗāf] + [á] + [háj] → [ɗəf á hāj]
'loaf' GEN 'millet' 'millet loaf'

Also, the genitive particle will elide with any word-final vowel in a previous word; likewise it will elide with a vowel at the beginning of the following word. In any case, the tone effects remain.

In a genitive construction, the relationship of the genitive noun phrase to the head noun is a temporary attribute of or relationship to the head.[9] The semantic relationship between head noun and genitive expresses the same range of semantic notions as the possessive pronoun (see Section 3.1.2.1). In the examples below, the genitive construction expresses ownership (both alienable and inalienable, 72), kinship (73), partitive (74), and other looser associations (75–77). When applicable, a corresponding pronominal possessive construction is also given for comparison.

[8]Note that the genitive particle *a* and the adposition *a* (Sections 5.6.1 and 5.6.2) are homophones.
[9]As compared with the permanent attribution construction Section 5.4.2.

(72) [hay [a Mana] [hay əwla]
[haj [a Mana] [haj=uwla]
house GEN Mana house=1S.POSS
'Mana's house' 'the house that I live in' (not the house I made)[10]

(73) [hor [a Mana]] [hor ahan]
[hʷɔr [a Mana]] [hʷɔr=ahaŋ]
woman GEN Mana woman=3S.POSS
'Mana's wife' 'his wife'

(74) [dəray [a Mana]] [dəray ahan]
[dəraj [a Mana]] [dəraj=ahaŋ]
head GEN Mana head=3S.POSS
'Mana's head' 'his head'

(75) [sləre1e [a Mana]] [sləre1e ahan]
[ɬɪrɛlɛ [a Mana]] [ɬɪrɛlɛ=ahaŋ]
work GEN Mana work=3S.POSS
'Mana's work' 'his work'

(76) [pəra [a Mala]] [pəra ahan]
[pəra [a Mala]] [pəra=ahaŋ]
spirit-place GEN Mala spirit-place=3S.POSS
'the spirit-place that Mala worships' 'his spirit-place'

(77) [zar akar [a Mana]] [zar akar ahan]
[zar akar [a Mana]] [zar akar=ahaŋ]
man thief GEN Mana man thief=3S.POSS
'the man who stole from Mana' 'the man who stole from him'

There are several idioms or figurative expressions in Moloko which involve genitive constructions where the head noun in the noun phrase is a body part such as *ma* 'mouth' (78–80) or *hoɗ* 'stomach' (81).

(78) [ma [a gəver]]
[ma [a gɪvɛr]]
mouth GEN liver
'gall bladder'

[10] 'The house I made' requires a relative clause: [*hay* [*əwla amə-her-e =va*]] 'house mine to build.'

(79) [ma [a gəlan]]
[ma [a gəlaŋ]]
mouth GEN kitchen
'door to the kitchen'

(80) [ma [a savah]]
[ma [a savax]]
mouth GEN rainy season
'beginning of rainy season'

(81) Ne a [hoɗ [a zazay]] ava.
nɛ a [hʷɔɗ [a zazaj]] ava
1S at stomach GEN peace in
'I [am] very peaceful.' (lit. I, in the centre of peace)

All other modifiers in a genitive construction will modify the genitive noun and not the head noun. In (82), the possessive modifies the genitive noun (my wife) and not the head noun (i.e., not 'my bride price'). Likewise in (83), the demonstrative modifies the genitive noun ('this woman') and not the head noun (i.e., not 'this bride price'). In (84), it is the genitive noun 'animals' that is pluralised and modified by 'all', not the head noun 'chief.'

(82) [Gembere [a hor əwla]] adal anga ango.
[gembɛrɛ [a hʷɔr=uwla]] a-dal aŋga=aŋgʷɔ
bride price GEN woman=1S.POSS 3S-exceed POSS=2S.POSS
'The bride price of my wife exceeded [that] belonging to you.'

(83) [Gembere [a hor nehe] na], acəɓava.
[gembɛrɛ [a hʷɔr nɛhɛ] na] a-tsəɓ=ava
bride price GEN woman DEM PSP 3S-overwhelm=in
'The bride price of this woman is exhorbitant.'

(84) Angala [bahay [a gənaw ahan ahay a slala ga ava jəyga]].
à-ŋgala [bahaj [a gənaw=ahaŋ=ahaj a ɬala ga ava
3S+PFV-return chief GEN animal=3S.POSS=Pl at village ADJ in
dzijga]]
all
'He came back as the chief of all his animals in the village.'

5.4.2 Permanent attribution construction

In a 'permanent attribution construction,' the noun phrase has a head composed of two (or even three) nouns, which acts as a unit within a larger noun phrase (85–91). The nouns in a permanent attribution construction do not comprise a compound made of phonologically bound words, but are separate words (prosodies do not spread from one noun to the other, (87), (88), (91), and there are word-final changes in the first noun). Semantically, the second noun in the noun phrase indicates something about the identity of the first noun or gives a permanent attribute of the head noun.[11] The glosses in each of the examples below confirm this observation.

(85) [zar Ftak]
[zar Ftak]
man Ftak
'a man who was born in Ftak'

(86) [zar akar]
[zar akar]
man theft
'thief' (someone who makes his living from stealing)

(87) [zar jəgwer]
[zar dʒɪgʷɛr]
man shepherd
'a shepherd' (paid for his work)

(88) [zar səlom]
[zar sʊlɔm]
man goodness
'a man who is known for his goodness'

(89) [dalay zazay]
[dalaj zazaj]
girl peace
'girl of peace' (peace identifies her)

[11] As compared with the genitive construction which gives a more temporary attribute Section 5.4.1.

(90) [zar madan]
[zar madaŋ]
man sorcery
'a known sorcerer'

(91) [zar slərele]
[zar ɬɪrɛlɛ]
man work
'a man who is known as someone who works hard'

In a noun phrase with the permanent attribution construction as its head noun, other elements in the noun phrase modify the entire head (and not just one of the nouns in the construction, as is the case for the genitive construction, see Section 5.4.1). In (92), the plural and the numeral modify the head noun *ndam slərele* and the sense is 'his three workmen,' not 'the man of his three works.' In (93), the noun phrase has a triple noun head, *war elé háy* 'millet grain.' In this noun phrase, the derived adjective *bələn ga* 'one,' the demonstrative *nendəye* 'that,' and the relative clause *nok ameze* 'the one that you brought' all modify the triple noun head *war elé háy* 'millet grain.' They do not just modify the noun *war* 'child' or *háy* 'millet.' In the examples below, the noun phrase is delimited by square brackets and the permanent attribution construction is bolded.

(92) [**ndam slərele** ahan ahay makar].
[**ndam ɬɪrɛlɛ**=ahaŋ=ahaj makar]
people work=3S.POSS=Pl three
'his three workmen'

(93) Disobedient Girl, 13
[**War elé háy** bələn ga nendəye nok ameze na],
[**war ɛlɛ haj** bɪlɛŋ ga nɛndijɛ nɔkʷ amɛ-ʒɛɗ-ɛ] na
child eye millet one ADJ DEM 2S DEP-take-CL PSP
'That one grain of millet that you took,'

káhaya na kə ver aka.
ká-h=aja na kə vɛr aka
2S+IFV-grind=PLU 3S.DO on grinding stone on
'you should grind it on the grinding stone.'

It is interesting that when dependent and nominalised clauses (see Section 7.6 and Section 7.7) are within permanent attribution and genitive constructions, the

same modal differences seen in Section 12.1.1 still apply. The nominalised form of the verb functions to give a particular situation a finished idea, with an event that has been accomplished before the point of reference, almost as a state. In contrast, the dependent form of the verb is employed in situations which have an incomplete idea, one that is not yet achieved. Compare (94) and (95). Example (94) refers to someone whose identity is a shepherd – he is a man who makes his living caring for sheep or other animals. He probably is hired. This more permanent identity or state is expressed through the nominalised form of the verb in a permanent attribution construction. In contrast, (95) (a relative clause, see Section 5.4.3) reflects a man who cares for sheep but being a shepherd isn't his identity – he has sheep now but may not always have them. It is an incomplete or not completely realised situation expressed through the dependent form of the verb (a relative clause, but similar to the genitive).

(94) zar məjəgwere
zar mɪ-dʒɪgʷɛr-ɛ
man NOM-shepherd-CL
'a shepherd-man' (lit. man shepherding)

(95) məze amәjəgwere təmak
mɪʒɛ amɪ-dʒɪgʷɛr-ɛ təmak
person DEP-shepherd-CL sheep
'a person that cares for sheep' (lit. person to care for sheep)

Likewise, compare (96) and (97). In (96), the dependent verb form is used to give the idea that the person has stolen something from someone, perhaps only once in his life (a non-permanent attribution). In contrast, the permanent attribution construction in (97)[12] expresses that the man is a thief by identity or occupation – he steals to make his living. Another nominalised form is shown in (98) and the form *məze məkəre ga* 'person thefted' expresses a completed event. In this case, use of the adjectivised form indicates that the noun phrase head *məze* 'person' is the person who experienced the theft.

(96) məze amәkəre məze
mɪʒɛ amɪ-kɪr-ɛ mɪʒɛ
person DEP-steal-CL person
'the person that steals' (lit. person to steal from person)

[12] *Akar* is the irregular nominalised form of the verb *karay* (see Section 4.2).

(97) zar akar
zar akar
man theft
'a thief' (lit. man thief)

(98) məze məkəre ga
mɪʒɛ mɪ-kɪr-ɛ ga
person NOM-steal-CL ADJ
'the person who was robbed'

5.4.3 Relative clauses

Relative clauses are one of the final elements in a noun phrase. The structure of relative clauses in Moloko is shown in Figure 5.2. and consists of a pronoun (when necessary), a verb in dependent form (see Section 7.7) and a complement. A relative clause has no pronoun when the head of the relative clause is the subject of the relative clause. If the head of the relative clause has a grammatical role other than subject, then a pronoun is used.

(pronoun)	dependent verb	complement	(presupposition marker)

Figure 5.2: Structure of relative clause

The head noun of the relative clause can be either the subject or the direct object of the relative clause. When the head noun is the subject of the relative clause (99–102), there is a gap for subject in the relative clause (marked by Ø in the examples). For example, the understood subject of the relative clause in (99) is the same as *war dalay* 'the girl' in the noun phrase. In the example, the Ø is a zero marking where the subject of the clause would otherwise be. There is a gap for subject because the subject of the relative clause is the same as the head of the noun phrase that is being modified. The relative clause is bolded and the noun phrase is delimited by square brackets in the examples in this section.

(99) Disobedient Girl, S. 38
Metesle anga [war dalay ngendəye **amazata aka ala**
mɛtɛɬɛ aŋga [war dalaj ŋgɛndiɟɛ **Ø ama-z=ata=aka=ala**
curse POSS child girl DEM DEP-bring=3P.IO=on=to
'The curse [is] belonging to that girl, (the one) who had brought'

avəya nengehe ana məze ahay na].
avija nɛŋgɛhɛ ana mɪʒɛ=ahaj na]
suffering DEM DAT person=Pl PSP
'this suffering to the people.'

(100) [Ləkwəye hawər ahay na, **amanday a hay a zawər ahay ava**],
[lʊkʷøjɛ hawər =ahaj na **Ø ama-ndaj a haj a zawər=ahaj ava**]
2P women =Pl PSP DEP-PROG at house GEN men=Pl in
'You women, the ones that are living at your husband's house,

səy kogəsom ma a zawər aləkwəye ahay.
sij kɔ-gʊs-ɔm ma a zawər=alʊkʷøjɛ=ahaj
only 2-catch-2P mouth GEN men=2P.POSS=Pl
'you must listen to your husbands.'

(101) Disobedient Girl, S. 33
Hərmbəlom ága ɓərav va kəwaya
Hʊrmbʊlɔm á-g-a ɓərav =va kuwaja
God 3S+IFV-do-CL heart =PRF because of
'God had gotten angry because of '

[war dalay na **amecen sləmay bay** ngəndəye].
[war dalaj na **Ø amɛ-tʃɛŋ ɬəmaj baj** ŋgɪndijɛ]
child girl PSP DEP-hear ear NEG DEM
'that girl, that one that was disobedient.'

(102) Nde [ləbara əwla ga **amətaraləkwəye ma**] nehe.
ndɛ [ləbara =uwla ga **Ø amə-tar=alʊkʷøjɛ ma**] nɛhɛ
so news =1S.POSS ADJ DEP-call=2P.IO mouth DEM
'So, this is my news that I have called you together (to hear).' (lit. So, my news which called mouth to you [is] this here)

When the head noun is the direct object of the relative clause, the relative clause must contain a subject pronoun. The pronoun must be inserted before the verb in the relative clause (103–105). It is interesting that this subject pronoun of the relative clause is sometimes a free pronoun (104, 105, 109, see Section 3.1.1) but in other cases is a possessive pronoun (103, see Section 3.1.2). Two examples from the same narrative[13] (103 and 104) use different pronouns for the subject of

[13]The entire narrative is not included in this work.

the relative clause. While (103) uses the 3P possessive pronoun *ata*, (104) uses the free pronoun *təta*. In some cases, the relative clause will contain the direct object pronominal *na* following the dependent verb. The DO pronominal represents the noun phrase head. In the examples below, the direct object pronominal *na* is underlined. A gap for the direct object in the relative clause (104 and 109) is indicated by Ø.

(103) Tasan oko ana [hay **ata aməgəye <u>na</u> va**].
tà-s=aŋ ɔkʷɔ ana [haj=**atəta amɪ-g-ijɛ <u>na</u>=va**]
3P+PFV-cut=3S.IO fire DAT house=3P.POSS DEP-do-CL 3S.DO=PRF
'They set fire to the house that the others had made.'

(104) A slam a [hay **təta aməgəye a dala kosoko ava na**], tolo.
a ɬam a [haj **təta amɪ-g-ijɛ Ø a dala kɔsɔkʷɔ ava na**]
at place GEN house 3P DEP-do-CL at money market in PSP
tɔ̀-lɔ
3P+PFV-go
'To the place of the house that they made in the market, they went.'

(105) [War háy ngəndəye **nok ameze <u>na</u> va**] bəlen ngəndəye na,
[war haj ŋgɪndijɛ **nɔkʷ amɛ-ʒ-ɛ <u>na</u>=va**] bɪlɛŋ ŋgɪndijɛ na
child millet DEM 2S DEP-take-CL 3S.DO=PRF one DEM PSP
'That grain that you have taken, that one [grain],'
káahaya kə ver aka.
káá-h=aja kə vɛr aka
2S+POT-grind=PLU on grinding stone on
'grind it on the grinding stone.'

(106) is more complex since the subject of the relative clause includes the speaker along with the head of the noun phrase (*məze enen ahay* 'some other people'). The relative clause begins with the 1PEX pronoun *ləme*. The speaker brought food to those people who helped him to drive the cows.

(106) Dəyday anga fat amədeɗe va náŋgala a mogom
dijdaj aŋga fat amɪ-dɛɗ-ɛ =va ná-ŋg=ala
ID:approximately POSS sun DEP-fall-CL =PRF 1S+IFV-return=to
a mɔgʷɔm
at home
'At sunset, I went home' (lit. [it was] approximately [time] belonging to the sun which already fell, I returned home)

waya amazata ala ɗaf ana
waja ama-z=ata=ala ɗaf ana
because DEP-take=3P.IO=to millet.loaf DAT
'to bring food for ' (lit. because to bring food to)

[məze enen ahay **ləme aməngele alay sla ahay jəyga na**].
[mɪʒɛ ɛnɛŋ=ahaj **lɪmɛ amɪ-ŋgɛl-ɛ=alaj łа=ahaj dʒijga na**]
person another=Pl 1PEX DEP-return-CL=away cow=Pl all PSP
'all the people that drove the cows [to Tokembere].' (lit. some other people we the ones returning all cows)

In all of the above examples, the head noun can be modified by other modifiers in addition to the relative clause. Sometimes, however, the relative clause itself is the entire noun phrase (107–108). These noun phrases that consist of relative clauses take no other noun phrase modifiers. Also, they are apparently limited in the type of clause construction in which they can occur. They can only be the predicate of a larger predicate nominal construction (see Section 10.1.2). Examples (107) and (108) are interrogative constructions with a predicate nominal structure (see Section 10.3.1). We found no natural examples where a headless relative clause served as a matrix component in a matrix verbal clause. Example (108) is an emphatic construction (see Section 10.3.5).

(107) [**Aməzəɗe dəray na**] way?
[**Ø amɪ-ʒɪɗ-ɛ dəraj na**] waj
DEP-carry-CL head PSP who
'Who will win?' (lit. the one to carry the head, who?)

(108) Snake, S. 7
Alma [**amədəvala okfom nehe**] may?
alma [**amə-dəv=ala ɔkʷfɔm nɛhɛ**] maj
what DEP-fall=to mouse DEM what
'What made that mouse fall?' (lit. what to fall this mouse, what?)

Noun phrases with relative clauses can get quite complicated in Moloko even though they only occur in specific places in discourse. In (109), there are two relative clauses together, both modifying the head noun *ɛlɛ* 'thing.' In the first (*ne amahan* the thing 'that I told her') the head of the noun phrase corresponds to the direct object of the verb in the relative clause (marked as Ø in the example). In the second (*aməjəye mege bay* the thing 'that I said she should not do') there is

an embedded complement clause within the relative clause (delimited by lines). In this second relative clause, the element that corresponds to the head of the noun phrase is represented by Ø within the complement clause.

(109) Disobedient Girl, S. 29
Agə na va
à-gə na=va
3S+PFV-do 3S.DO=PRF
'She did it' (lit. she did it, [the thing] that I told her;)

[ele **ne amahan aməjəye |mege bay| na**] esəmey.
[ɛlɛ **nɛ ama-h=aŋ Ø amɪ-dʒ-ijɛ |mè-g-ɛ Ø baj| na**] ɛʃɪmɛj
thing 1S DEP-say=3S.IO DEP-tell-CL 3S+HOR-do-CL NEG PSP not so
'the thing that I told her she should not do, not so?'

Plural head nouns in noun phrases containing a relative clause have so far only been noted in elicited relative clauses and their interpretation is ambiguous. In these noun phrases, speakers insert the plural *=ahay* in one of two places: the plural *=ahay* can occur immediately following the head noun, or in some instances it may follow the relative clause. The plural precedes the relative clause in (110–111).

(110) [Ele ahay **nok aməzəɗe na**], anga əwla bay.
[ɛlɛ=ahaj **nɔkʷ amɪ-ʒɪɗ-ɛ na**] aŋga=uwla baj
thing=Pl 2S DEP-take-CL PSP POSS=1S.POSS NEG
'The things that you brought [are] not belonging to me.'

(111) [Məze ahay **aməzəɗe dəray na**], tolo a mogom nə memle ga.
[mɪʒɛ=ahaj **amɪ-ʒɪɗ-ɛ dəraj na**] tɔ-lɔ a mɔgʷɔm nə mɛmlɛ ga
person=Pl DEP-take-CL head PSP 3P-go at home with joy ADJ
'The people that won went home with joy.'

When the plural *=ahay* occurs after the relative clause (113), exactly what is pluralised is ambiguous. The relative clause follows a singular head noun in (112). However, when the head noun is plural, the relative clause is sandwiched between the head noun and the plural marker (113). In (113), the possibilities are chief's house/ chief's houses / chiefs' house / chiefs' houses,' depending on if *ndam*, *hay*, *bahay*, or all three are pluralised. Thus, when plural forms are used in Moloko discourse, which possibility is correct must be already clear from the context.

(112) Dala slərele asan
dala ɬərɛlɛ a-s=aŋ
money work 3S-please=3S.IO

ana [məze **aməhere hay a bahay**].
ana [mɪʒɛ **Ø amɪ-hɛr-ɛ haj a bahaj**]
DAT person DEP-build-CL house GEN chief

'The person (the one) that built the chief's house wants his wages (lit. work money pleases him).'

(113) Dala slərele asata
dala ɬɪrɛlɛ a-s=ata
money work 3S-please=3P.IO

'Wages please'

ana [ndam **aməhere hay a bahay** ahay].
ana [ndam **Ø amɪ-hɛr-ɛ haj a bahaj**=ahaj]
DAT people DEP-build-CL house GEN chief=Pl

'the people that built the chief's house/ chief's houses / chiefs' house / chiefs' houses.'

The end of the relative clause is sometimes delimited by the presupposition marker *na* (see Chapter 11). (99) is repeated here as (114) (see also 104, 106, 107). *Na* indicates that the relative clause contains previously shared (or presupposed) information. *Na* also physically delineates the end of the relative clause. In (114), the presupposition marker *na* is underlined.

(114) Disobedient Girl, S. 38
Metesle anga [war dalay ngəndəye **amazata aka ala**
Mɛtɛɬɛ anga [war dalaj ŋgəndəjɛ **Ø ama-z=ata=aka=ala**
NOM-curse POSS child girl DEM DEP-take=3P.IO=on=to

'The curse belongs to that young woman that brought'

avəya nengehe ana məze ahay <u>**na**</u>].
avija nɛŋgɛhɛ ana mɪʒɛ=ahaj <u>**na**</u>]
suffering DEM DAT person=Pl PSP

'this suffering onto the people.'

Any information inside a relative clause must be known or presupposed information expected to be shared by the hearer. Relative clauses function in two

ways. Firstly, relative clauses may specify the head noun among others. Secondly, in a narrative, relative clauses identify their content as carrying information concerning a key participant in the discourse and may allude to the moral of the story.

Consider the Disobedient Girl text (see Section 1.5 for the full narrative). The moral of the story is to instruct children (especially girls) to be obedient. There are relative clauses in S. 13 (115), S. 29 (109), S. 33 (101), and S. 38 (114). Note that all but one (115) of the relative clauses in this narrative concern the moral of the story. The Disobedient girl story involves suffering of a particular nature that was brought on by a particular girl who disobeyed specific instructions. The instructions that she disobeyed are in a relative clause within the husband's lament when he finds her (109). The disobedient girl is the head of two relative clauses at the end of the story, one citing her as the reason that God got angry (101) and the other stating that she brought suffering to the Moloko people (114). The only relative clause that does not concern information relevant to the moral of the story (115) is from a section in the narrative where the man instructs his wife on how much millet to grind. The man tells her to take one grain of millet. Then he specifies with a relative clause 'that one grain of millet you have taken.' This relative clause specifies the one grain of millet (from the other grains in the sack) that will be multiplied for them.

(115) Disobedient Girl, S. 13
Asa asok aməhaya na,
asa à-s=ɔk amə-h=aja na
if 3S+PFV-please=2S.IO DEP+PFV-grind=PLU PSP
'If you want to grind,'

kázaɗ war elé háy bəlen.
ká-zaɗ war ɛlɛ haj bɪlɛŋ
2S+IFV-take child eye millet one
'you take only one grain.'

[War elé háy bəlen ga nəndəye **nok amezəɗe na**],
[war ɛlɛ haj bɪlɛŋ ga ŋɪndijɛ **nɔkʷ amɛ-ʒɪɗ-ɛ na**]
child eye millet DEM ADJ DEM 2S DEP-take-CL PSP
'That one grain that you have taken,'

Káhaya na kə ver aka. Anjaloko de pew.
ká-h=aja na kə vɛr aka à-nz=alɔkʷɔ dɛ pɛw
2S+IFV-grind=PLU 3S.DO on stone on 3S+PFV-suffice=1PIN enough done
'grind it on the grinding stone, and it will suffice for all of us.'

Note that the relative clauses that contain information about the moral of the story are at the end of the narrative; there are no relative clauses related to the moral of the story at the beginning of the narrative – the noun phrases in S.10–S.11 (116) that introduce her and identify her as disobedient contain no relative clause.

(116) Disobedient Girl, S. 10–11
Olo azala [dalay] azla na [war dalay ndana]
à-lɔ à-z=ala [dalaj] aɮa na [war dalaj ndana]
3S+PFV-go 3S+PFV-take=to girl now PSP child girl DEM

[cezlere ga].
[tʃɛɮɛrɛ ga]
disobedience ADJ

'He went and took a wife, but that above-mentioned girl [was] disobedient.'

In the Snake narrative (see Section 1.4), there is only one relative clause. This relative clause shows another function of relative clauses in discourse. The relative clause, *amədəvala okfom nehe* 'the thing that caused the mouse to fall' in line 7 (108), contains the first mention (albeit indirect) of the snake who is a central participant in the story and the reason that the story was told.

5.5 Coordinated noun phrases

The basic way to coordinate two participants in Moloko is to join two noun phrases by the adposition *nə* 'with' (see Section 5.6.1). Modifiers will have semantic scope over both of the coordinated elements. In (117)–(119), the noun phrases are delimited by square brackets and the adpositions are bolded.

(117) Ləbara anga [[bahay a hay] **nə** [ndam slərele ahan ahay makar]].
ləbara aŋga [[bahaj a haj] **nə** [ndam ɬɪrɛlɛ=ahaŋ=ahaj
news POSS chief GEN house with people work=3S.POSS=Pl

makar]]
three

'The story [is] belonging to the chief of the house with his three workmen.'

(118) Values, S. 47
Nəmbəɗom a dəray ava na,
nə̀-mbʊ̀ɗ-ɔm a dəraj ava na
1S+PFV-change-1PEX at head in PSP
'We have become' (lit. we changed in the head)

ka [[[kərkaɗaw ahay] **nə** [hərgov ahay] ga] [a ɓərzlan ava na]]
ka [[[kərkaɗaw=ahaj] **nə** [hʊ̀rgʷɔv=ahaj] ga] [a ɓərɮaŋ ava] na]
like monkey=Pl with baboon=Pl ADJ at mountain in PSP
'like monkeys and baboons in the mountain.'

(119) [[Zar] **nə** [hor ahan]] tolo a mehele ava.
[[zar] **nə** [hʷɔr=ahaŋ]] tɔ-lɔ a mɛ-hɛl-ɛ ava
man with woman=3S.POSS 3P-go at NOM-unite-CL in
'A man and his wife went to the meeting.'

5.6 Adpositional phrase

Adpositional phrases function to relate noun phrases to the clause, expressing physical, grammatical, or logical relationships. Friesen & Mamalis (2008) found two types of adpositional phrases in Moloko; simple and complex. Simple adpositional phrases (Section 5.6.1) consist of an adposition followed by the noun phrase. Complex adpositional phrases (Section 5.6.2) consist of a noun phrase framed by a preposition and a postposition.

5.6.1 Simple adpositional phrase

There are seven adpositions in Moloko: *a* 'to,' *ana* 'to' *nə* 'with,' *aka* 'on,' *aŋga* 'belonging to,' *afa* 'at the house of,' and *ka* 'like.'

The preposition *a* 'at'[14] marks the relationship of location of the event (at, to, in; 120, 121).

(120) Cicada, S. 4
Tə́nday tə́talay **a** ləhe.
tə́-ndaj tə́-tal-aj **a** lɪhɛ
3P+IFV-PRG 3P+IFV-walk-CL at bush
'They were walking in the bush.'

[14] This particle is a homophone with the genitive particle (Section 5.4.1).

(121) Olo **a** Marva.
ɔ̀-lɔ **a** Marva
3S+PFV-go at Maroua
'He/she went to Maroua.'

The adposition *ana* 'to' marks the indirect object which is the place where the action of the verb occurs; the recipient, benefactive, or malefactive (122, 123, see Section 9.2 for a discussion of semantic roles).

(122) Tolo na, tasan oko **ana** hay ata aməgəye na va.
tə-lɔ na ta-s=aŋ ɔkʷɔ **ana** haj=atəta amɪ-g-ijɛ na=va
3P-go PSP 3P-cut=3S.DO fire DAT house=3P.POSS DEP-do-CL 3S.DO=PRF
'They went and set fire to the house that they had built.'

(123) Adəkaka alay **ana** Hərmbəlom.
a-dəkʷ=aka=alaj **ana** Hʊrmbʊlɔm
3S-arrive=on=away DAT God
'It reached God.'

The adposition *nə* 'with' marks the instrument (124) or comitative (accompaniment) relation (125, 126; cf. Section 5.5). The adposition is also used to form the verb focus construction (127, see Section 7.6.3).

(124) Naslay sla **nə** mekec.
na-ɬ-aj ɬa **nə** mɛkɛtʃ
1S-slay-CL cow with knife
'I kill the cow with a knife.'

(125) Olo **nə** zar ahan.
ɔ-lɔ **nə** zar=ahaŋ
3S-go with man=3S.POSS
'She went with her husband.'

(126) Zar **nə** hor ahan təta a mogom.
zar **nə** hʷɔr=ahaŋ təta a məgʷɔm
man with woman=3S.POSS 3P at home
'The man and his wife [are] at home.'

(127) Nəskom awak **nə** məskwəme.
nə̀-sʊ̀kʷɔm awak **nə** mɪ-skʷøm-ɛ
1S+PFV-buy/sell goat with NOM-buy/sell-CL
'I really bought the goat.' (lit. I bought the goat with buying)

The adposition *nə* 'with' also participates in forming comparative constructions in Moloko. When one noun phrase is compared with another, it is done by means of a clause construction using the verb *dal*, 'overtake.'[15] The standard of comparison (*baba =ahan* 'his father' in 128 and 129, and *mədəga =ahan* 'his older sibling' in 130) is the direct object of the verb. The quality being compared (*səber* 'tallness' in 128, *gədan* 'strength' in 129, and *məsəre ele* 'knowledge' in 130) follows in an adpositional phrase.

(128) War ahan ádal baba ahan nə səber.
war=ahaŋ á-dal baba=ahaŋ nə ʃɪbɛr
child=3S.POSS 3S+IFV-overtake father=3S.POSS with tallness
'The child is taller than his father.' (lit. his child surpasses his father with tallness)

(129) War ahan ádal baba ahan nə gədan.
war=ahaŋ á-dal baba=ahaŋ nə gədaŋ
child=3S.POSS 3S+IFV-overtake father=3S.POSS with strength
'The child is stronger than his father.'

(130) War na, á-dal mədəga ahan nə məsəre ele.
war na á-dal mədəga=ahaŋ nə mɪ-ʃɪr-ɛ
child PSP 3S+IFV-overtake older sibling=3S.POSS with NOM-know-CL
ɛlɛ
thing
'The child is smarter than his older sibling.' (lit. the child is greater than his older sibling with respect to knowledge)

No 'less than' comparatives were found in the data. Superlative constructions are possible but are not used often in Moloko culture. (131) illustrates what people say in an elicitation context.

[15] The verb *dal* 'overtake' takes subject prefixes and carries aspectual tone. Other constructions can be employed when comparing people (97) or ideas (line 49 in the Values exhortation).

(131) Ádal məze ahay jəyga nə məsəre ele a lekwel ava.
á-dal mɪʒɛ=ahaj ʤijga nə mɪ-ʃɪr-ɛ ɛlɛ a lɛkʷɛl
3S+IFV-overtake person=Pl all with NOM-know-CL thing at school

ava
in

'He/she is the smartest child in his school.'

The adposition *aka* 'on' is used with the verb *lo* 'go' to mark the purpose of a trip (132).

(132) Aban olo **aka** yam.
Abaŋ ɔ-lɔ **aka** jam
Aban 3S-go on water
'Aban goes to get water.' (lit. she goes on water)

The adposition *anga* indicates possession. The predicate possessive construction is discussed in Section 10.1.2. In the possessive construction, *anga* indicates a possessive relationship between the noun in the adpositional phrase and the other noun phrase in the construction. In (133), *anga* indicates that *dəray* 'head' is possessed by *ləme* 'us.'

(133) [Dəray ga] [**anga** ləme.]
[dəraj ga] [**aŋga** lɪmɛ]
head ADJ POSS 1PEX
'We got the head.' (lit. the head, belonging to us)

The adposition *afa* 'at the house of' plus a noun phrase gives a location at the house of the referent specified in the noun phrase (134).

(134) Nolo afa bahay.
nʊ̈-lɔ afa bahaj
1S-go at.house.of chief
'I go to the chief's house.'

The adposition *ka* 'like' introduces an adverbial complement that expresses manner. *Ka* appears twice in (135). In the second instance, *ka* carries the directional extension *ala* 'towards.'

(135) Values, S. 47
Nəmbəɗom a dəray ava na,
nə-mbʊɗ-ɔm a dəraj ava na
1S+PFV-change-1PEX at head in PSP
'We have become' (lit. changed in the head)

[**ka** kərkaɗaw ahay nə hərgov ahay ga a ɓərzlan ava na],
[**ka** kərkaɗaw=ahaj nə hʊrgʷɔv=ahaj ga a ɓərɮaŋ ava na]
like monkey=Pl with baboon=Pl ADJ at mountain in PSP
'like monkeys and baboons on the mountains,'

[**ka** ala kəra na], nəsərom dəray bay pat.
[**ka**=ala kəra na] nə-sʊr-ɔm dəraj baj pat
like=to dog PSP 1+PFV-know-1PEX head NEG all
'[and] like dogs, we don't know anything!'

5.6.2 Complex adpositional phrase

There are two complex adpositional phrases, each composed of the combination of a preposition and a postposition that surround the noun phrase. The adpositions give locational information. The first, *kə…aka* 'on' marks the noun phrase as being a location to which the event expressed by the verb is directed. It can be employed in a physical sense (136–138) or a figurative sense (139).

(136) Cicada, S. 9
Káafəɗom anaw **kə** mahay əwla **aka**.
káá-fʊɗ-ɔm an=aw **kə** mahaj=uwla **aka**
2+POT-place-2P DAT=1S.IO on door=1S.POSS on
'You should place [the tree] at my door.'

(137) Enjé **kə** delmete **aka** a slam enen.
ɛ-ndʒ-ɛ **kə** dɛlmɛtɛ **aka** a ɬam ɛnɛŋ
3S-leave-CL on neighbor on at place another
'He left to go to his neighbor at some other place.'

(138) Azaɗ oloko **kə** dəray a məwta **aka**.
à-zaɗ ɔlɔkʷɔ **kə** dəraj a muwta **aka**
3S+PFV-carry wood on head GEN truck on
'He/she carried the wood on top of the truck.' (lit. on the head of the truck)

(139) Hərmbələm agə ɓərav va **ka** war anga məze dedelen ga **aka**.
Hʊrmbʊ̈ləm a-gə ɓərav =va **ka** war aŋga mɪʒɛ dɛdɛlɛŋ ga **aka**
God 3S-do heart =PRF on child POSS person black ADJ on
'God was angry with the black man's child.' (lit. God did heart on the child that belongs to the black person)

The second complex adpositional phrase, *a…ava* 'in,' the preposition and postposition surround a noun phrase to mark that noun phrase as being a physical location in which the action of the verb is directed (140 and 141).

(140) Olo **a** kosoko **ava**.
ɔ-lɔ **a** kɔsɔkʷɔ **ava**
3S-go at market in
'He/she goes to market.'

(141) Afaɗ dala **a** ombolo **ava**.
a-faɗ dala **a** ambɔlɔ **ava**
3S-put money at sack in
'He/she put the money into [his] sack.'

The postpositions *aka* 'on' and *ava* 'in' have the same forms as the verb adpositional extensions *=aka* 'on' and *=ava* 'in' (see Section 7.5.1). The extensions permit the presence of the complex adpositional phrase which gives further precision concerning the location of the event (142 and 143[16]). In the examples, the postpositions and verbal extensions are both bolded.

(142) Afəɗ**aka** war elé háy na **kə** ver **aka**.
a-fəɗ=**aka** war ɛlɛ haj na **kə** vɛr **aka**
3S-place=on child eye millet PSP on stone on
'She put the grain of millet on the grinding stone.'

(143) Məmət**ava** alay **a** ver **ava**.
mə-mət=**ava**=alaj **a** vɛr **ava**
NOM-die=in=away at room in
'She died in the room.'

[16]Even though the verb in this example has verbal extensions, it is not conjugated for subject since it is a climactic point in the story where nominalised forms are often found. This is discussed further in Sections 7.6 and 8.2.3.

6 Verb root and stem

In addition to analysing the phonology of Moloko, Bow (1997c) studied verb morphology and also produced notes on the grammar of Moloko which were expanded by Boyd (2003); Friesen & Mamalis (2008) is an analysis of the Moloko verb and verb phrase. The next four chapters are based on Friesen & Mamalis (2008), but the data and analysis have been re-worked, reorganised, and expanded.

The verb is the centre of the clause in Moloko. It expresses the action of an event, or a situation or state. It may be the only element in a clause, or it may be accompanied by noun phrases or pronouns expressing the subject, the direct object, and the indirect object of the verb, adpositional phrases expressing location, and/or discourse markers. Ideophones (Section 3.6) figure greatly in the expression of the action, both when they function as adverbs and when they fill the verb slot in a clause.

Typical of a Chadic language, Moloko has a variety of extensions that modify the sense of the verb stem.[1] It has 6 extensions which specify location of the event, direction with respect to centre of reference, and the Perfect. An underspecified valence system (Chapter 9) allows variable transitivity usage for a given verb. In Moloko, valence-changing operations are not achieved through morphological modifications of the verb (for example with causative, applicative, and passive affixes). Transitivity is a clause-level property that carries a grammatical function.

Because of its complexity, the Moloko verb and verb phrase are treated in four separate chapters. We distinguish verb root, stem (both described in Chapter 6), verb word – renamed 'verb complex' for Moloko (verb stem plus affixes and extensions, Chapter 7), verb phrase (Chapter 8), and finally verb and transitivity types (Chapter 9).

[1] Note that the term 'extension' for Chadic languages has a different use than for Bantu languages. In Chadic languages, 'extension' refers to particles or clitics in the verb word or verb phrase.

6.1 The basic verb root and stem

Bow (1997c) found that the verb root in Moloko consists of one to four consonants and perhaps a vowel. The verb root by itself never occurs in the language. In discussing the verb in Moloko it is more profitable to consider the verb stem as the most basic lexical unit. The Moloko verb stem itself is already complex. Friesen & Mamalis (2008) determined that in order to pronounce a verb stem in Moloko, a speaker needs to know the following six features:

- the consonantal skeleton of the verb root (Section 6.2).
- if the stem carries the /-j/ suffix (Section 6.3).
- if the root has an underlying vowel (Section 6.4).
- if the stem carries the *a-* prefix (Section 6.5).
- the prosody of the stem (labialised, palatalised, or neutral, Section 6.6).
- the tone class of the stem (high, low, or toneless, Section 6.7).

The structural arrangement of the six features is diagrammed in Figure 6.1.

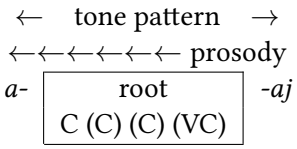

Figure 6.1: Structure of the verb stem

6.2 The consonantal skeleton of the root

Moloko verb roots are like those of other Afroasiatic languages in that they are built on a consonantal skeleton. Bow (1997c) found that the verb root consists of one to four consonants, although a skeleton of two consonants is most common.[2] That Moloko verb roots are based on a consonantal skeleton can be evidenced by two facts, both of which are illustrated in Table 6.1. (adapted from Bow 1997c).

[2] Bow's database includes 26 one-consonant verbs, 231 two-consonant verbs, 83 three-consonant verbs, and 10 four-consonant verbs.

Firstly, the consonants display a unique stability when the verb is inflected.[3] The vowels, on the other hand, change with the prosody of the inflection and whether or not the word carries stress.[4] Secondly, there are verb roots that consist simply of one consonant and a prosody. These have no underlying root vowel, but they will acquire their vowels in the inflections.

The underlying form of a verb stem is defined as the consonantal skeleton plus the optional presence of an underlying vowel, /-j/ suffix, and *a-* prefix, potential prosody, and tone (see Sections 6.3–6.7). In the examples in Table 6.1 and in the rest of this section, the underlying form will be given when necessary in addition to the phonetic pronunciation. The tone class is not shown.

Table 6.1: Consonantal skeleton of selected verb stems and selected word forms

Root type ↓	Underlying form of stem	3s Perfective *a-*	3s Perfective with directional *a- =ala*	1PIN Perfective *mo- -ok*	Nominalised form *mə- (-əy)-e*
		One-consonant			
neutral	/p -j /	*a-p-ay* 'he opened'	*a-p=ala* 'he opened towards'	*mo-p-ok* 'we opened'	*mə-p-əy-e* 'opening'
palatalised	/ g^{e} /	*e-g-e* 'he did'	*a-g=ala* 'he did towards'	*mo-g-ok* 'we did'	*mə-g-əy-e* 'doing'
labialised	/ l^{o} /	*o-lo* 'he went'	*a-l=ala* 'he came towards'	*mo-loh-ok*[a] 'we went'	*mə-l-əy-e* 'going'
		Two-consonant			
neutral	/f ɗ /	*a-faɗ* 'he put'	*a-fəɗ=ala* 'he put towards'	*mə-fəɗ-ok* 'we put'	*mə-fəɗ-e* 'putting'
palatalised	/ ɮ g^{e} /	*e-zləg-e* 'he sowed'	*a-zləg=ala* 'he sowed towards'	*mə-zləg-ok* 'we sowed'	*mə-zləg-e* 'sowing'
labialised	/ndaɮ -j^{o} /	*a-ndozl-oy* 'he exploded'	*a-ndazl=ala* 'it exploded towards'	*mə-ndozl-ok* 'we exploded'	*mə-ndezl-e* 'exploding'
		Three-consonant			
neutral	/p ɗ k-aj /	*a-pəɗək-ay* 'he woke'	*a-pəɗək=ala* 'he woke up'	*mə-pəɗək-ok* 'we woke up'	*mə-pəɗək-e* 'waking'
palatalised	/ ts f ɗ^{e} /	*e-cəfəɗ-e* 'he asked'	*a-cəfəɗ=ala* 'he asked'	*mə-cəfəɗ-ok* 'we asked'	*mə-cəfəɗ-e* 'questioning'
labialised	/ɓ r ts -j^{o} /	*o-ɓərc-oy* 'he pounded'	*a-ɓərc=ala* 'he pounded towards'	*mə-ɓərc-ok* 'we pounded'	*mə-ɓərc-e* 'pounding'

[a]Irregular form with epenthetic *h* added between vowels. For complete conjugation see Appendix B. / l^{o} / is the only single consonant verb root that is labialised.

[3]Note there are consonantal allophones in palatalised and labialised words.

[4]Since stress is phrase-final, the final syllable of these elicited examples will always carry a 'full' vowel.

Mamalis found that the underlying consonants in a verb root can most easily be identified from the 2S imperative form (Table 6.2 from Friesen & Mamalis 2008). Note that palatalisation will cause an underlying /s/ to be expressed as [ʃ] (see Section 2.2.3). The same verb stems are included as were in Table 6.1 as well as a few more. Prosody, underlying vowels (lines 12, 15), and the /-j/ suffix (lines 4-7, 15) can also be seen in the imperative form; these features will be discussed in the sections below.

Table 6.2: Underlying form of selected verb stems and imperative forms

Line	Underlying form showing consonants in verb root	2S Imperative form	Gloss
	Neutral prosody		
1	/f ɗ /	*faɗ*	'put'
2	/g s/	*gas*	'catch'
3	/m nz r/	*mənjar*	'look'
4	/p -j /	*p-ay*	'open'
5	/t l-aj/	*tal-ay*	'walk'
6	/ɬ-aj/	*sl-ay*	'kill (by cutting the throat)'
7	/p ɗ k-aj /	*pəɗak-ay*	'wake'
	Palatalised prosody		
8	/g^{e}/	*g-e*	'do'
9	/s^{e}/	*s-e*	'drink'
10	/ɮ g^{e}/	*zləg-e*	'bring'
11	/ts f ɗ^{e} /	*cəfəɗ-e*	'ask'
12	/ts a n^{e}/	*cen*	'understand'
	Labialised prosody		
13	/l^{o}/	*lo*	'go'
14	/z m^{o}/	*zom*	'eat'
15	/nd a ɮ -j^{o}/	*ndozl-oy*	'explode'

The consonants in a verb stem in Moloko are remarkably constant. We have found only two irregular verbs where there are changes in the verb consonants. Firstly, the irregular verb /l^{o}/ adds an epenthetic [h] in some conjugations to break up vowels (the full conjugation of /l^{o}/ is in Appendix B). Secondly, the root-final *ɗ* of the verb /z ɗ/ 'take' drops off when affixes and clitics are added (1,

2). This process does not happen with the phonologically similar verb /f ɗ/ 'put' (3, 4).

(1) /z ɗ/ =aw =ala → [zawala]
take[2S.IMP] =1S.IO =to 'give to me'

(2) /z ɗ/ =aka → [zaka]
take[2S.IMP] =on 'give again' (on top of what you gave before)

(3) /f ɗ/ =aw =ala → [faɗuwala]
put[2S.IMP] =1S.IO =to 'put on me'

(4) /f ɗ/ =aka → [faɗaka]
put[2S.IMP] =on 'put again' (on top of what you put before)

6.3 Underlying suffix

Moloko verb stems can be divided into two subclasses based on whether an underlying suffix is present or not. Slightly over 70% of the verb stems in Bow's (1997c) data take the suffix /-j/, which can have different surface variants depending on the prosody of the stem.

2008 found that although the /-j/ suffix appears to have no semantic value, it does allow certain consonants to be verb root final which would otherwise not be permitted.[5] However, for many verb stems, it appears to be at least synchronically simply a place-holding suffix that drops off whenever other suffixes or extensions are attached to the verb (compare columns 3 and 4 in Table 6.1). Examples (5) and (6) show the same verb complex with (5) and without (6) the /-j/ suffix.[6]

(5) Apay.
a-p-aj
3S-open-CL
'It opens.'

[5] I.e., [*b, mb, d, nd, dz, nz, g, ŋg, gʷ, ŋgʷ, ts, w, j*]. See discussion on word-final consonants in Section 2.5.1.

[6] The first line in each example is the orthographic form. The second is the phonetic form (slow speech) with morpheme breaks.

(6) Apala.
a-p=ala
3s-open=to
'It opens towards.'

Verb stems with the underlying suffix but no underlying (i.e., a neutral) prosody take the surface suffix form [-aj]; verb stems that are labialised carry the surface form suffix [-ɔj].[7] With the exception of verbs with the root-final consonant /n/,[8] verb stems that are palatalised carry the surface form suffix [ɛ]. We interpret the [-ɛ] in palatalised verbs as the palatalised variant of the /-j/ suffix for two reasons. First, [-ɛ] patterns the same way as the /-j/ suffix (dropping off with its prosody whenever another suffix or extension is added). Second, the same rules of restriction of final stem consonants apply for palatalised verb stems as for other verb stems (see Section 2.5.1), and so the presence of [-ɛ] allows root-final consonants which would otherwise be restricted. For example, /d/ and /g/ are both not permitted as word-final consonants (Section 2.2.4), but the presence of [-ɛ] allows verbs like [d-ɛ] and [g-ɛ]. Examples from verb roots of one, two, and three consonants are shown in Table 6.3.[9]

Because the suffix surfaces only word-finally, whenever the relevant verb is pronounced in isolation (and is thus phrase-final), the suffix syllable takes the phrase-final stress, necessitating a full vowel. It is therefore pronounced [aj] (see example 7) in verbs with neutral prosody, [ɔj] in labialised verb stems, and [ɛ] in palatalised verb stems). Whenever the verb is not phrase-final, the vowel drops and an epenthetic schwa occurs, rendering the pronunciation [i] for labialised and neutral prosody verbs (8) and [ɪ] for palatalised verbs.

(7) [a-paɗ-aj]
3s-crunch-CL
'It crunches.'

(8) [a-paɗ-ij ʃɛʃɛ]
3s-crunch-CL meat
'He eats meat.'

[7] Prosody is applied to the verb stem since the *-aj* suffix takes on the prosody of the stem (prosodies spread leftwards, Section 2.1).

[8] Stems ending in *n* are all palatalised, e.g., *cen* 'understand', *cəjen* 'lose', *njeren* 'groan', *mbesen* 'relax', *ndeslen* 'make cold', *ɓərzlen* 'count', *mbeten* 'put out', and *mbezen* 'spoil'. We interpret these verbs as having /n/ as final consonant because the *n* cannot be interpreted as direct or indirect object and also there are no other stems which end in *n*.

[9] We found no three-consonant palatalised verb stems in the data. Labialised verb stems without the */-j/* suffix were rare.

Table 6.3: Stems with and without underlying suffix

Number of consonants	One-consonant verb root	Two-consonant verb root	Three-consonant verb root
Stems with no suffix			
No underlying prosody		*tah* 'reach out' *zlan* 'begin'	*mənjar* 'see' *təkam* 'taste'
Labialised verb stems	*lo* 'go'	*zom* 'eat'	*səkom* 'buy/sell'
Palatalised verb stems		*cen* 'understand'	*mbezlen* 'count' *mbezen* 'spoil'
Stems with suffix			
No underlying prosody *-ay* suffix	*l-ay* 'dig' *j-ay* 'say'	*haɓ-ay* 'dance' *lag-ay* 'accompany'	*təwaɗ-ay* 'cross' *sləɓat-ay* 'repair'
Labialised verb stems *-oy* suffix		*cok-oy* 'undress' *ɓor-oy* 'climb'	*təkos-oy* 'cross legs' *təlok-oy* 'drip'
Palatalised verb stems *-e* suffix	*g-e* 'do' *z-e* 'smell'	*cək-e* 'stand up' *zləg-e* 'plant'	

Table 6.4 (adapted from Bow 1997c and Boyd 2003) illustrates the phonetic pronunciation including tone of pairs of verb stems that have the same consonantal shape but with and without the /-j/ suffix.

6.4 Underlying vowel in the root

Bow (1997c) noted that no Moloko verb root has more than one underlying internal vowel and many Moloko verb roots have no underlying vowels (see Table 6.2).[10] The presence of an underlying internal vowel in the verb stem (if any) can be determined by studying the second plural imperative. Bow illustrates the following minimal pair. The verb stems /ts r/ 'climb' and /tsar/ 'taste good' have identical surface forms in the second person singular imperative (9–10) due to stress on the final syllable, which necessitates a full vowel. However, the presence of the underlying vowel can be seen in the second person plural imperative

[10] Bow 1997c, page 24. Her database of 350 verb stems has 189 with the internal vowel.

Table 6.4: Verb stems with and without /-j/ suffix

Underlying Form of Stem	Verb Stem	Gloss
/bar/	[ɓár]	‘shoot an arrow’
/bar-aj/	[ɓár-áj]	‘toss and turn when sick’
/tsar/	[tsár]	‘taste good’
/tsar-aj/	[tsàr-àj]	‘tear’
/dar/	[dàr]	‘move’
/dar-aj/	[dàr-àj]	‘plant’
/ɗak/	[ɗàk]	‘fill up a hole’
/ɗak-aj/	[ɗàk-áj]	‘show’/‘tell’
/faɗ/	[fàɗ]	‘put’
/faɗ-aj/	[fáɗ-áj]	‘fold’
/f t/	[fàt]	‘grow’ (plant)
/fat-aj/	[fàt-àj]	‘lower’
/g r/	[gár]	‘grow’ (human)
/gar-aj/	[gár-àj]	‘govern’
/h ɓ/	[hàɓ]	‘break’
/haɓ-aj/	[hàɓ-àj]	‘dance’
/k ɗ/	[káɗ]	‘kill’
/kaɗ-aj/	[káɗ-áj]	‘prune’
/ɬ r/	[ɬár]	‘send’
/a-ɬar/	[ɬàr-áj]	‘slide’
/mb d/	[mbàɗ]	‘change position’
/mbad-aj/	[mbáɗ-áj]	‘swear’
/ng r/	[ŋgár]	‘prevent’
/ngar-aj /	[ŋgàr-àj]	‘rip’
/s k/	[sák]	‘multiply’
/sak-aj/	[sàk-áj]	‘sift’
/t r/	[tár]	‘enter’
/tar-aj/	[tàr-áj]	‘call’
/v r/	[vár]	‘roof’ (a house)
/var-aj/	[vàr-àj]	‘chase away’
/w l/	[wál]	‘attach’
/wal-aj/	[wál-áj]	‘look among things’
/w s/	[wàs]	‘cultivate’
/was-aj/	[wás-áj]	‘populate’

(11–12).[11] The verb root for ‘climb’ does not have an underlying vowel, so a schwa is inserted and labialised to become [ʊ] (11). On the other hand, the verb root for ‘taste good’ has an internal vowel which becomes [ɔ] when labialised (12).

(9) [tsar]
‘climb!’ (2S)

(10) [tsar]
‘taste good!’ (2S)

(11) [tsʊr-ɔm]
‘climb!’ (2P)

(12) [tsɔr-ɔm]
‘taste good!’ (2P)

Table 6.5 (from Friesen & Mamalis 2008) shows several other examples. Single consonant roots have no internal vowel (line 1). Two and three-consonant roots may have no internal vowel (lines 2-4) or an internal vowel (lines 5-7). All four-consonant roots have an internal vowel (line 8).

Table 6.5: Presence or absence of internal vowel

Line	2S Imperative	2P Imperative	Consonantal skeleton with stem vowel	Gloss
		No internal vowel		
1	*sl-ay*	*sl-om*	/ɬ-j/	‘kill’
2	*tar*	*tər-om*	/t r/	‘enter’
3	*həm-ay*	*həm-om*	/h m-j/	‘run’
4	*mənjar*	*mənjər-om*	/m nz r/	‘see’
		Internal vowel		
5	*tar-ay*	*tor-om*	/tar-j/	‘call’
6	*ndozl-oy*	*ndozl-om*	/ndaɮʶ/	‘explode’
7	*məndac-ay*	*məndoc-om*	/m ndats-j/	‘gather’
8	*bəjəgam-ay*	*bəjəgom-om*	/b dz gam-j/	‘crawl’

[11] The 2P imperative is formed by adding the suffix *-om* and labialisation prosody.

Bow discovered that when an underlying vowel exists in the root, it always immediately precedes the final root consonant, so possible verb roots could take the following forms (disregarding affixes): C, CC, CaC, CCC, CCaC, CCCaC. These 'full' vowels will remain full in all inflections of the verb, and will be affected by the prosodies of the forms, resulting in surface [a, ɛ, ɔ, œ]. In syllables where there are no underlying vowels, an epenthetic schwa is inserted between certain consonant clusters to facilitate pronunciation in the inflected forms. On stressed syllables, the schwa will become its full vowel counterpart (see 9).

6.5 Underlying prefix

The verb stems in one class of bi-consonantal verbal stems take subject prefixes with the full vowel /a/ instead of the epenthetic schwa. Bow (1997c) called this a historical *a-* prefix on the verb stem. She reported that 83 out of 231 bi-consonantal verb stems that she studied have the (now frozen) *a-* prefix. Whether a verb stem has this prefix or not can be determined from the nominalised form. Bow illustrates the presence of this prefix with the minimal pair /a-ndaw/ 'swallow' and /ndaw/ 'insult.' (13) and (14) show the nominalised form of the two verb stems.[12] The verb stem *məndewe* 'swallow' does not have the *a-* prefix. The verb stem *mendewe* 'insult' has the *a-* prefix (shown by the full vowel *e* in the prefix).

(13) məndéwe
mɪ-ndɛw-ɛ
NOM-swallow-CL
'swallowing'

(14) mendewe
mɛ-ndɛw-ɛ
NOM-insult-CL
'insulting'

Bow proposed that synchronically, the *a-* prefix verb stems represent a separate class of verb stems. Table 6.6. (adapted from Bow 1997c) shows the phonetic representation of minimal pairs giving evidence of the presence of the *a-* prefix. Those with [mɛ-] in the initial syllable contain the *a-* underlying prefix; those with [mɪ-] in the initial syllable do not have the *a-* prefix.

Note that the *a-* prefix carries very little lexical weight; there appears to be no semantic reason for its presence. Contrast is lost between *a-* prefix verb forms

[12] The nominalised form has a *mə-* or *me-* prefix, an *-e* suffix, and is palatalised (Section 7.6).

Table 6.6: Minimal pairs showing presence of historical /a-/ prefix

Underlying form	Gloss	Nominalised form	Underlying tone of stem[a]
/ndaw-j/	'swallow'	[mɪ-ndɛw-ɛ]	toneless
/a-ndaw-j/	'insult'	[mɛ-ndɛw-ɛ]	L
/ɻ r/	'pierce'	[mɪ-ɻɪr-ɛ]	H
/a-ɻ r/	'kick'	[mɛ-ɻɪr-ɛ]	L
/tsah-j/	'ask'	[mɪ-tʃɛh-ɛ]	H
/ a-tsah-j/	'scar'	[mɛ-tʃɛh-ɛ]	L
/law-j/	'hang'	[mɪ-lɛw-ɛ]	L
/a-law-j/	'mate'	[mɛ-lɛw-ɛ]	L
/k w-j/	'get drunk'	[mɪ-kuw-ɛ]	L
/a-k w-j/	'search'	[mɛ-kuw-ɛ]	L

[a]Note that the underlying tone of *a-* prefix verb stems is always low (see discussion in Section 6.7)

and those without the prefix in irrealis mood (see Section 7.4.3). The Potential form for the verbs /a-ndaw/ 'swallow' and /ndaw/ 'insult' are identical (15–16).

(15) Káandáway.
káá-ndaw-aj
2S+POT-swallow-CL
'He will swallow.'

(16) Káandaway.
káá-ndaw-aj
2S+POT-insult-CL
'He will insult.'

6.6 Prosody of verb stem

Bow (1997c) found that in their underlying lexical form, Moloko verb stems are either labialised, palatalised, or without a prosody. The database in Appendix A shows that 83 out of 350 verb stems carry a prosody (61 are palatalised and 22 are labialised).[13] Although prosodies can carry predictable lexical weight in some

[13]The effects of labialisation and palatisation are discussed in Section 2.1. Note that there are also some morphological processes where palatalisation or labialisation is a part of the morpheme, for example, palatalisation is part of the formation of the nominalised form (Section 7.6), and labialisation is a part of the 1P and 2P subject forms Section 7.3.1.

other related languages,[14] in Moloko, labialisation and palatalisation carry very little lexical weight. Table 6.7 (adapted from Bow 1997c, with additional data) illustrates the phonetic pronunciation of several minimal pairs (or near minimal pairs) for prosody. There appears to be no predictable semantic connection between verb stems of differing prosodies.

The underlying labialisation and palatalisation prosodies are lost when most suffixes or clitics[15] are added, compare example (17) and (18) for the verb /s -jᵉ/ 'drink.'

(17) Nese.
nɛ̀-ʃ-ɛ
1S+PFV-drink-CL
'I drank.'

(18) Nasala.
nà-s=ala
1S+PFV-drink=to
'I drank already.' (lit. I drank towards)

6.7 Tone classes

Bow (1997c) concluded that verb stems in Moloko belong to one of three underlying tone classes: high (H), low (L), or toneless (Ø). She discovered that the underlying tone of a verb stem can be identified by comparing the 2S imperative with the Potential form. The Potential form has a high tone on a lengthened subject prefix (see Section 7.4.3). If the tone melody of the stem is high on both imperative and Potential forms, then that stem has an underlying high tone. If the tone melody is mid or low on both forms due to the presence of depressor consonants (see Section 2.4.1), then the stem has underlying low tone. If the tone melody of the stem syllable is low in the imperative but high following the high tone of the subject prefix in the Potential form, that verb stem is toneless. The high tone of the Potential form of the subject prefix spreads to the toneless stem. For the imperative form of a toneless stem, a default low tone is applied to the stem.

[14] All causatives in Muyang involve the palatalisation of the root (Smith 2002). In Mbuko, the data show a correlation between palatalisation and pluractionality (Richard Gravina 2001).

[15] The indirect object pronominal enclitic does not always influence the verb prosody; see Section 7.3.3 and 2.6.1.3.

Table 6.7: Minimal pairs for prosody of verb stems

Neutral		Labialised		Palatalised	
[ɮak-aj]	‘suffer pain’	[ɮɔkʷ-ɔj]	‘gnaw’	[ɮɪg-ɛ]	‘sow’
[mbar]	‘heal’			[mb-ɛ]	‘argue’
[mbas-aj]	‘laugh’			[mbɛʃɛŋ]	‘rest, breathe’
[nzar-aj]	‘comb, separate’			[ndʒɛrɛŋ]	‘groan’
[s-aj]	‘cut’			[ʃ-ɛ]	‘drink’
[v-aj]	‘winnow’			[v-ɛ]	‘spend time’
		[tsɔk-ɔj]	‘undress’	[tʃɪk-ɛ]	‘stand up’
[dzak-aj]	‘lean’	[dzɔkʷ-ɔj]	‘pack down’		
[ɗak-aj]	‘show, tell’	[dɔkʷ-ɔj]	‘arrive’		
[fak-aj]	‘uproot tree’	[fɔkʷ-ɔj]	‘whistle with lips’		
[gaz-aj]	‘nod’	[gʊz-ɔj]	‘tan’		
[kar-aj]	‘steal’	[kɔr-ɔj]	‘put’		
[l-aj]	‘dig’	[lɔ]	‘go’		
[ɬah-aj]	‘mix grain with ashes’	[ɬɔhʷ-ɔj]	‘leave in secret’		
[pal-aj]	‘choose’	[pɔl-ɔj]	‘scatter’		
[saɓ-aj]	‘exceed’	[sɔɓ-ɔj]	‘suck’		
[sak-aj]	‘sift’	[sɔkʷ-ɔj]	‘whisper’		
[sar]	‘know’	[sɔr-ɔj]	‘slide’		
[təkas-aj]	‘cross’	[tʊkʷɔs-ɔj]	‘fold legs’		
[tah-aj]	‘boost’	[tɔhʷ-ɔj]	‘trace’		
[zar-aj]	‘linger’	[zɔr-ɔj]	‘notice, inspect’		

A minimal triplet is shown in Table 6.8 (from Friesen & Mamalis 2008). Line 1 shows a High tone verb stem. The tone on the verb stem is high in both the imperative and Potential forms. Line 2 shows a low tone verb stem with low tone in the imperative form and mid in the Potential form. Line 3 shows a toneless verb stem. This verb stem carries no inherent tone of its own and its surface tone is low in the imperative form and takes the high tone of the prefix in the Potential form.

Table 6.8: Tone class contrasts

Line	Underlying form of stem	Imperative Form	Potential Form	Tone Class
1	/d r/	[dár] 'Burn!'	[nàá-dár] 'I will burn'	H
2	/a-dar-j/	[dàr-āj] 'Plant!'	[nàá-dār-áj] 'I will plant'	L
3	/d r/	[dàr] 'Recoil!'	[nàá-dár] 'I will recoil'	Ø

Mamalis (Friesen & Mamalis 2008) studied tone patterns in Moloko verbs. Table 6.9 (adapted from Friesen & Mamalis 2008) shows the imperative and Potential forms and the underlying tone patterns for different verb stems.

Tone patterns in Moloko verbs are summarised in Table 6.10 (from Friesen & Mamalis 2008), which shows the tone pattern on the stem for the imperative and Potential forms for the three underlying tone forms. All verb stems in each class have the same pattern, as follows (note that the tone in parentheses is the tone on the /-j/ suffix, if there is one). Tone patterns are influenced by the presence of depressor consonants (see Section 6.7.1) and the underlying structure of the verb stem (see Section 6.7.2).

6.7.1 Effect of depressor consonants

Bow (1997c) subdivided the low tone verb stem category phonetically into mid and low surface forms by the presence or absence of one or more of the class of consonants known as depressor consonants (see Section 2.4.1). Depressor consonants in Moloko include all voiced obstruents except implosives and nasals (i.e. [b, d, g, dz, v, ɣ, z, mb, nd, ŋg]). Bow (1997c) demonstrated that an underlyingly low tone verb with no depressors has a mid tone surface form; with depressors it has a low tone surface form. For verb stems of underlying high tone or toneless

Table 6.9: Tone patterns for selected verb stems

CV pattern	Underlying form of stem	Imperative form	Potential (Irrealis) form (/náá/- prefix)	Tone class
C	/b-j/ 'light'	[b-àj] 'Light!'	[náá-b-àj] 'I will light'	L
	/g-j^{e}/ 'do'	[g-ɛ́] 'Do!'	[nɛ́ɛ́-g-ɛ́] 'I will do'	H
	/d-j^{e}/ 'cook'	[d-ɛ̀] 'Cook!'	[nɛ́ɛ́- d-ɛ̀] 'I will cook'	L
CC	/mb r/ 'heal, cure'	[mbár] 'Heal! '	[náá- mbár] 'I will heal'	H
	/m t/ 'die'	[māt] 'Die! '	[náá-māt] 'I will die'	L
	/g s/ 'catch'	[gàs] 'Catch!'	[náá-gás] 'I will catch'	toneless
CaC	/tsar/ 'taste good'	[tsār] 'Taste good!'	[náá-tsār] 'I will taste good'	L
a-CaC-aj	/a-pas-j/ 'spread out'	[pās-áj] 'Spread out!'	[náá- pās-áj] 'I will spread out'	L
CaC-aj	/nzak-j/ 'find'	[nzák-áj] 'Find!'	[náá- nzák-áj] 'I will find'	H
	/ndaɗ-j/ 'like, love'	[ndàɗ-āj] 'Love!'	[náá- ndáɗ-āj] 'I will love'	toneless
CCC-aj	/d b n-j/ 'learn'	[dəbən-āj] 'Learn!'	[náá- dəbən-āj] 'I will learn'	L
CCCaC-aj	/b dz gam-j/ 'crawl'	[bədzəgàm-āj] 'Crawl!'	[náá-bədzəgàm-āj] 'I will crawl'	L

Table 6.10: Summary of tone patterns for the three tone classes

Underlying tone	Phonetic tone in imperative form	Phonetic tone in Potential form
H	H(H)	H(H)
L without depressor consonants in stem	M(H)	HM(H)
L with depressor consonants in stem	L(M)	HL(M)
Toneless	L(M)	H(H)

verb stems, the presence or absence of depressor consonants makes no difference to the surface form of the melody. Toneless verb stems take low tone as the default surface form, regardless of depressors. Table 6.11 (from Bow 1997c) shows the realisations of surface tone with and without depressor consonants for the most common verb type (underlying form /CaC/ with high tone /-j/ suffix in the 2P.IMP form).

Table 6.11: Effect of depressor consonants; imperative forms

Underlying tonal melody	Depressor consonants	Surface tone	Underlying form of stem	Surface form	Gloss
Toneless	–	L	/haɓ-j/	[hàɓ-āj]	'dance!'
	+	L	/daɣ-j/	[dàɣ-āj]	'join!'
L	–	M	/pàɗ-j/	[pāɗ-áj]	'bite!'
	+	L	/ɣàv-j/	[ɣàv-āj]	'swim!'
H	–	H	/fáɗ-j/	[fáɗ-áj]	'fold!'
	+	H	/bál-j/	[bál-áj]	'wash!'

6.7.2 Effect of underlying form on tone of stem

Bow (1997c) found that the components of the underlying form, particularly initial vowel and number of consonants, influence what underlying tone the root has, such that she could predict the underlying tone of certain verb stems with accuracy. Table 6.12 (from Friesen & Mamalis 2008) shows the tone of verb stems of different structures, with examples. The following three stem structures are significant with respect to tone:

- Verb stems with the *a-* prefix (always two-consonant) always have underlying low tone (line 4, Section 6.5).
- Verb stems with three or more consonant roots (line 5-6) always have underlying low tone (Section 6.7.2.3).
- Non-palatalised verb stems with one-consonant roots (line 1 of Table 6.12) always have underlyingly low tone (Section 6.7.2.1). Palatalised verb stems with one-consonant roots may be high or low but not toneless (line 2).

These three categories account for about 45% of the verb stems in the database of 316 verb stems used by Mamalis (Friesen & Mamalis 2008). Only two-consonant roots with no *a-* prefix allow all underlying tone patterns (line 3 of Table 6.12).

6.7.2.1 Verb stems with one root consonant

Verb stems with single consonant verb roots (the /-j/ suffix is added to produce the stem) (cf. lines 1 and 2 of Table 6.12) are never toneless.[16] Non-palatalised verb stems carry only low tone. Palatalised verb stems may be high or low. The two possible tonal melodies are seen in the following minimal pair (from Friesen & Mamalis 2008). Example (19) has an underlying high tone; example (20) has an underlying low tone.

(19)	Njé.	Néenjé.
	nʒ-ɛ́	néé-nʒ-ɛ́
	leave[2S.IMP]-CL	1S+POT-leave-CL
	'leave!'	'I will leave.'

(20)	Nje.	Néenje.
	nʒ-ɛ̀	néé-nʒ-ɛ̀
	sit[2S.IMP]-CL	1S+POT-sit-CL
	'Sit!'	'I will sit.'

Additional examples illustrating underlying stem tone in verb stems with one root consonant are given in Table 6.13 (from Friesen & Mamalis 2008). Imperative and Potential forms are given for each example. Stems with and without depressor consonants are included.

[16] One possible exception is /dz-j/ 'say,' which may be toneless.

Table 6.12: Underlying tones for different verb stem structures

Line	Verb stem structure	Underlying tone of 316 verb stems		
		H	L	Toneless
1	One-consonant non-palatalised verb roots		7 verb stems [b-àj] ‘light’ [p-āj] ‘open’	
2	One-consonant palatalised verb roots	4 verb stems [g-ɛ́] ‘do’	8 verb stems [d-ɛ̀] ‘cook’ [ʃ-ɛ̄] ‘drink’	
3	2 consonant verb roots with no *a-* prefix	36 verb stems [fár] ‘scratch’ [bál-áj] ‘wash’	49 verb stems [gər-āj] ‘tremble’ [fāt] ‘grow’ [tʃīk-ɛ́] ‘stand’ [tsəɗ-áj] ‘shine’	38 verb stems [dàɗ] ‘fall’ [həm-āj] ‘run’
4	*a-* prefix verb stems (all have 2 consonants)		82 verb stems [bàz] ‘harvest’	
5	3 consonant verb roots		58 verb stems [vənàh-āj] ‘vomit’ [ɬəɓāt-áj] ‘repair’	
6	4 consonant verb roots		12 verb stems [bədzəgàm-āj] ‘crawl’	

Table 6.13: Tone patterns in stems with one root consonant

Syllable pattern and Aspect/mood		H	L – depressor consonants	 + depressor consonants
Palatalised	Imperative	[g-ɛ̄] 'do, make'	[ʃ-ɛ̄] 'drink'	[d-ɛ̀] 'prepare'
	Potential	[kɛ́ɛ́-g-ɛ́] 'you will do'	[kɛ́ɛ́-ʃ-ɛ̄] 'you will drink'	[kɛ́ɛ́-d-ɛ̀] 'you will prepare'
Non-palatalised	Imperative	Ø	[p-āj] 'open'	[b-àj] 'light'
	Potential		[káá-p-āj] 'you will open'	[káá-b-àj] 'you will light'

6.7.2.2 Verb Stems with two root consonants

Verb stems with no *a-* prefix may be from any tone class. Table 6.15 (Friesen & Mamalis 2008) shows several examples of two consonant verbs, giving the imperative and Potential verb forms for each of the possibilities.

Table 6.14: Tone patterns in a- prefix verbs

Stem structure		L – depressor consonants	 + depressor consonants
/a-CC/	Imperative	Ø	[dàl] 'surpass'
	Potential		[káá-dàl] 'you will surpass'
/a-CC-j/	Imperative	[sɔ̄l-áj] 'fry' [a]	[gə̀rāj] 'frighten'
	Potential	[káá-sɔ̄l-áj] 'you will fry'	[káá-gə̀r-āj] 'you will fear'
/a-CaC-j/ (60)	Imperative	[pās-áj] 'spread out'	[dàr-āj] 'plant'
	Potential	[káá-pā-sáj] 'you will spread out'	[káá-dàr-āj] 'you will plant'

[a] There was only one example of H tone for this structure.

Table 6.15: Tone patterns in stems with two root consonants with no a- prefix

Stem structure		H	L[a]	Toneless
/CC/	Imperative	[mbár] 'heal, cure'[b]	[māt] 'die'	[gàs] 'catch'
	Potential	[káá-mbár] 'you will heal'	[káá-māt] 'you will die'	[káá-gás] 'you will get'
/CaC/[c]	Imperative	Ø	[tsār] 'taste good'	[hàr] 'make'
	Potential		[káá-tsār] 'you will taste good'	[káá-hár] 'you will make'
/CC-j/	Imperative	[ŋgə́l-áj] 'defend' (only example)	[rə̄ɓ-áj] 'be beautiful'	[hə̀m-āj] 'run'
	Potential	[káá-ŋgə́l-áj] 'you will defend'	[káá-rɓ-áj] 'you will be beautiful'	[káá-hə̀m-áj] 'you will run'
/CaC-j/	Imperative	[bál-áj] 'wash'	[māk-áj] 'stop'	[ɣàw-āj] 'fear'
	Potential	[káá-bál-áj] 'you will wash'	[káá-māk-áj] 'you will leave'	[káá-ɣáw-áj] 'you will fear'

[a]No two-consonant verbs without *a-* prefix with low tone have depressor consonants.
[b]Most CC roots that have high tone end in /r/.
[c]Note that these are the only structures that have no counterpart *a-* prefix forms.

6.7.2.3 Verb stems with three or more root consonants

Bow (1997c) determined that verb stems with three (or more) root consonants (cf. lines 5 and 6 of Table 6.12) all have underlyingly low tone. The surface tone will be low or mid, depending on the presence or absence of depressor consonants. If the stem carries the /-j/ suffix, the suffix will carry mid tone. Table 6.16 (from Friesen & Mamalis 2008) shows examples of verb stems with three or more consonants in imperative and Potential form.

Table 6.16: Tone patterns in verb stems with three root consonants

		L No depressor consonants	Depressor consonants
/CCC/	Imperative	[sʊ̄kʷɔ́m] 'buy'	[dzʊ̀gʷɔ̀r] 'look after'
	Potential	[kɔ́ɔ́-sʊ̄kʷɔ́m] 'you will buy'	[káá-dzʊ̀gʷɔ̀r] 'you will shepherd'
/CCaC/	Imperative	[tə̄kár] 'try, taste'	[mànzàr] 'see'
	Potential	[káá-tə̄kár] 'you will try'	[káá-mànzàr] 'you will see'
/CCC-j/	Imperative	[tsəfəd́-áj] 'ask'	[dəbàn-āj] 'teach, learn'
	Potential	[káá-tsəfəd́-áj] 'you will ask'	[káá-dəbàn-āj] 'you will learn'
/CCaC-j/	Imperative	[pədə̀k-áj] 'wake'	[vànàh-āj] 'vomit'
	Potential	[káá-pədə̀k-áj] 'you will wake'	[káá-vànàh-āj] 'you will vomit'
/CCCaC-j/	Imperative		[bədzəgàm-āj] 'crawl'
	Potential		[káá-bədzəgàm-āj] 'you will crawl'

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A grammar of Moloko

Mana Samuel, Mana Djeme Isaac, and Ali Gaston have been involved in their communities in linguistics, language development and translation. They are Moloko speakers and between them they also speak French, Fulfulde, Guiziga, Muyang, and Hausa. Together with the Moloko Language and Translation committees they have produced several books in the Moloko language. Dianne Friesen, a linguist with SIL International, joined them in 1999, studied the language, and helped in producing the books. Together they produced this grammar. It came out of hours spent at friends' houses hearing and recording stories, hours spent listening to the tapes and transcribing the stories, then translating them and studying the language through them. Time was spent together and with others speaking the language and talking about it, translating resources and talking to people about them. Grammar discoveries were made in the office, in the fields while working, and at gatherings. In the process, the four have become more and more passionate about the Moloko language and are eager to share their knowledge about it with others.