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A grammar of Tadaksahak a northern Songhay language of Mali

Christiansen-Bolli, R.

Citation

Christiansen-Bolli, R. (2010, March 31). *A grammar of Tadaksahak a northern Songhay language of Mali*. *Berber Studies*. Retrieved from https://hdl.handle.net/1887/15180

Version:	Not Applicable (or Unknown)
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Downloaded from:	https://hdl.handle.net/1887/15180

Note: To cite this publication please use the final published version (if applicable).

3. Morphology

As the great majority of the Tadaksahak lexicon stems from Tamasheq, it is no wonder that – at least from the point of view of statistics – Tadaksahak morphology presents a strong similarity to Berber patterns. Linguistic literature about Berber languages has therefore been a source of inspiration in this part of the analysis. In fact, the Songhay part of the Tadaksahak lexicon comprises only about 300 lexemes. These lexemes consist of about 125 nouns and designate concrete things. Some 145 verbs are listed, of which many serve as verbal nouns as well. Other words of Songhay origin are two numerals, a few adverbs, pronouns, and appositions.

The vast majority of lexemes are of Tamasheq origin, and some of the religious terms come from Arabic. Many grammatical morphemes observed in Tadaksahak have cognates with Tamasheq morphemes.

The diversity of origins is often reflected in Tadaksahak morphology. This shows up in different morphological systems according to the etymological origin of the words. One special feature, which deserves mention already here, is the presence of a complicated system of suppletion in verb derivation (cf. Christiansen & Christiansen 2007). In Mainstream Songhay all derivations are suffixed. Many verbs accept the suffix /-(a)ndi/ which makes the causative of intransitive verbs (and a few transitives), and the factitive of verbs of adjectival quality (Heath, 1999a:164ff):

ŋaa eat	*ŋaa-ndi*	feed, let eat
kan be sweet	*kan-andi*	sweeten

In Tadaksahak, this suffix does not exist. Instead verb roots of Songhay origin are suppleted when they are causativized. The causative forms show very different roots, recognizable as Tamasheq cognates containing the causative sibilant prefix.

(1)	*ŋa*	eat	*ʃ-íkʃa*	feed
	bíibi	be black	*s-ə́kwəl*	make black

Similarly, in Mainstream Songhay the reciprocal construction uses the indefinite singular noun ‘friend, mate’ (Heath, 1999a:357):

borey ga cere kar.
person.PLDEF MAN friend hit
the people hit each other.

In Tadaksahak, however, the reciprocal is expressed with a nasal prefix as in Tamasheq.

(2) *yídɣər* to be glued *m-ə́dɣər* to adhere to

As with causatives, Songhay underived verbs may be paralleled by Tamasheq-based derived forms (sometimes a double middle prefix), e.g.

(3) *kár* to hit *nə́-mm-aŋɣa* to hit/kill each other

For passive forms, Mainstream Songhay verbs take the same morpheme as for causative forms. In Tadaksahak, a Tamasheq-based derivation with a prefix *tuw-* is used, and the same suppletion as signaled above is found, e.g.

(4) *wí* to kill *túw-aŋɣa* to be killed

3.1 The verb

In this chapter the grammatical category of the verb is discussed. First the verbs are grouped into different classes depending on their derivational behavior. Then the different verbal derivations are described. The following section is dedicated to inflection. The ensuing discussion shows arguments for the notion of a 'verbal word', a grammatical unit found in Tadaksahak very similar to the Tamasheq inflected verb.

3.1.1 Verb root classes

The derivational and inflectional behavior of verbs differs depending on the etymology and shape the verb roots. The following section gives the different classes with some of their distinctive features.

The most remarkable split for verb classes is along etymological lines and separates the verbs into Songhay and Tamasheq cognates. On the surface the Songhay cognates may be recognized by

a) CV or CVC pattern, e.g. *dá* 'to do', *mó* 'to hear', *mún* 'to pour out', *dút* 'to pound'

b) a nasal closing the first syllable of a di- or tri-syllabic root; e.g. *hambará* 'to fear', *cindí* 'to leave a rest', *gaŋgá* 'to prevent s.b. from'

c) a long V in the initial syllable, e.g. *keení* 'to sleep', *báaɣa* 'to want / to love'

d) two short Vs in a di-syllabic root with open final syllable, e.g. *didá* 'to walk', *tabá* 'to taste'

These patterns are not a safe parameter of recognition for the origin of the root. Moreover, some CVC verbs are indeterminate whether they are of Songhay or of Tamasheq stock, e.g. 'to be thirsty' Songhay: /faar / faaru/; Tadaksahak: *fad;* Tamasheq: /ufad/ 'to be thirsty', /fad/ 'thirst'.

Derivation of Songhay-based verbs always means suppletion of the verb root. Some inflections are handled like that of the /y-/ initial verbs of the Tamasheq class.

The Tamasheq class of verb roots is divided into three groups. The criteria are surface shapes:

a) first consonant is other than /y/,
e.g. *ləŋkəm* 'to sit behind someone (on animal)'; *kəmás* 'to tie up (sugar, coin) in corner of garment'

b) first consonant is /y/, e.g. *yíḍən* 'to graze';

c) tri- or polysyllabic roots with final /-ət/, e.g. *wáləq-ət* 'to swallow in one gulp'

Group (a) behaves the most regularly. These roots do not drop consonants in either inflection or derivation.

Group (b) loses the initial /y/ in some inflections and all derivations.

Group (c) loses the final consonant in nominalization while the last syllable does not count for stress distribution.

The verb roots of Tamasheq origin with more than two syllables tend to have 'neutralized' vowels. Schwa is by far the most frequent in this class of verbs. Back consonants (e.g. ɣ, ħ, ʕ) tend to 'attract' the low vowel [a] and palatalized consonants (e.g. /ʒ/, /ʃ/ and /y/) are mostly followed by [i].

The citation form of verbs in this work always shows an initial consonant for verb roots. The /y-/ initial verbs are remarkable in that they lose this initial consonant in some environments. It would seem that the 3rd person masculine singular perfective form in Tamasheq is the base for the Tadaksahak verb root. The inflected form of the root /dhl/ 'to help' in Tamasheq Tawəlləmmət is *idhăl* 'he helped' on which *a=yyídhəl* 'he helped' is based.

Many derivations in Tadaksahak consist of a prefixed consonant (e.g. *s(ə)-* 'causative'). In such contexts, the initial /y-/ is dropped and the derivational consonant replaces it. *yíktəb* 'to write' becomes *s-ə́ktəb* 'to make write'. Note that the realization of the first vowel is now schwa.

A similar phenomenon occurs with inflectional prefixes consisting of only a consonant, e.g. *b-* 'imperfective' and *m-* 'subjunctive'. The four y-initial Songhay roots expose the same behavior as the Tamasheq cognates. For the long consonants see 2.4.1.7.2.

(5) Inflection of y-verbs

perfective	imperfective	gloss	Etymology
a=yyéeri	*a=bb-éeri*	to throw up	Son: yeeri
a=yyéd	*a=bb-éd*	to return	Son: yee
a=yyígməm	*a=bb-ə́gməm*	to chew (tobacco)	Tam: əgməm
a=yyiʒwál	*a=bb-əʒwál*	to mark (animal)	Tam: aʒwəl
a=yyaafá	*a=bb-aafá*	to yawn	Tam: aḍu

In the class of the /-ət/-final verbs, one remarks the change of the final syllable in verbal nouns. There are about 130 verbs of this type in our corpus.

(6) Nominalization of -ət *final roots*

verb root	verbal noun	gloss
də́lənf-ət	*a-də́lənf-u*	to be gooey
fə́lcəq-ət	*a-fə́lcəq-u*	to be flat
fərə́nfər-ət	*a-fərə́nfər-u*	to stir quickly

ʒílliʒ-it	*a-ʒílliʒ-u*	to wash (grain)

3.1.2 Verb stems

Verb stems may consist of a verb root and one or more derivational prefixes.

All underived verb roots of Songhay origin have a semantically similar counterpart of Tamasheq origin. This Tamasheq root appears when derivation or certain nominalizations happen. Such roots never occur without a derivational or nominalization morpheme and are therefore considered to be bound. In running texts these roots are glossed with BND for 'bound'.

(7) Examples of bound roots

root	Causative	Passive	noun/VN	gloss
ŋa	*ʃ-íkʃa*	*t-ákʃa*	*a-ʃ-ákʃ-o*	to eat
kuŋgú	*s-íywən*	*túwa-s-íywən*	*t-éewan-t*	to be satiated

All derivational elements are prefixed to the verb root. For most roots one prefix occurs, however some roots allow for more than one prefix.

No particular study of possible forms and combinations has been made. The following chart is based on examples found in the corpus.

(8) Examples of verb stems with derivational morphemes

Pass	Caus	Reciprocal	(Caus.)	root	gloss root
		nə-mə́-	*s-*	*əlkəm*	follow
	sə-	*nə-mə́*	*s-*	*əwər*	put on
tuwa-	*sə́-*		*ss-*	*əɣra*	teach

Reduplication takes place on stem as well as on root level.

3.1.3 Derivation

3.1.3.1 Labile verbs (verb roots with variable valency)

A vast number of Songhay cognates can be used in an intransitive (often descriptive) and transitive (factitive) way. A number of Tamasheq cognates expose the same behavior.

In the list below, the first group (a) shows Songhay cognates.

The following verbs are Tamasheq cognates exposing the same characteristics. Group (b) shows the same stress pattern as stative verbs in Tamasheq, i.e. the last syllable has the stress. However, the verbs of group (c) have the stress on the first syllable and serve as intransitive (stative) verbs as well.

(9) Simple verbs with two valencies

	root	intransitive gloss	transitive gloss
a)	*bíibi*	be black	blacken
	yáy	be cold	make cold
	bér	be big	enlarge
	ṭáy	be moist	moisten
	ʒén	be old	make old
	mán	be close	approach
	mór	be distant	distance
	dígdig	be broken	break
	mún	be thrown out	throw out
	lés	be unclean	make unclean
b)	*yiɣmá*	be decorated	decorate (leather)
	yiská	be combed	comb
	yiḷʒá	be shaved	shave
c)	*yíɣfəl*	be locked	lock
	yídraɣ	be decorated with metal	decorate with metal

root	intransitive gloss	transitive gloss
yíləm	be open	open
yíḷkəḍ	be braided	braid
yíṣbər	be spread out (to dry)	spread out
yíssaɣ	be tied two together	tie two together
yíɣʃid	be out of use	put out of use

In summary we note that a fair amount of the Songhay cognates have a double valency. Some verbs of Tamasheq origin behave the same way.

3.1.3.2 Causative S(ə)-

The prefix *S(ə)-* makes the causative of intransitive verbs ('make sb. walk') and many transitive verbs ('make eat' > 'feed') and the factitive of verbs with descriptive qualities ('widen'). The prefix is of Tamasheq origin.

Many causativized transitive verbs involve a 'causee', somebody who is made to do something. This semantic role is marked with dative *se*. See further discussion under Syntax 4.3.7

The causative morpheme is prefixed to the verb stem. It consists of a sibilant with a neutral vowel. Sibilant harmony is in effect and forces the causative prefix to take the same place of articulation and the same voicing as the sibilant present in the verb stem or root.

(10) Causative morphemes

	root contains
z(V)-	voiced alveolar fricative
ʒ(V)-	voiced palatal fricative
ʃ(V)-	voiceless palatal fricative
s(V)-	elsewhere

(11) Sibilant harmony

verb root	causative	gloss
m-ázəg [1]	*zə́-mm-əzəg*	to race a race (camel) / to be made to race
m-íʒi [1]	*ʒí-mm-iʒi*	to be separated /

		to separate
yínʃíʃ	*ʃ-ínʃíʃ*	to be filtered / to filter
yíbsa	*s-ábsa*	to be saved / to save

All y-initial verbs drop the initial consonant and replace it with the consonant of the prefix. Verbs beginning with 'core' consonants add a syllable with a vowel of the same quality as the rest of the root.

Note 1: For both, *m-íʒi* and *m-ázəg* an initial /m-/ morpheme with a semantic "middle"-component are recognizable. They are no longer separable from the root. **yíʒi* and **yízəg* do not exist.

Adding a morpheme to the root, which equals an extra syllable in some cases, causes stress shifts. The stress is on the causative morpheme syllable unless this leaves three unstressed syllable to the right. In this case the stress moves on the ante-penultimate syllable.

(12) Stress on causative stems

verb root	causative	gloss
yáhar	*s-áhar*	to be covered / to cover
yídbəl	*s-ádbəl*	to be in heaps / to heap up
ɣánfəd	*sá-ɣanfəd*	to be hobbled (kind for camel) / to hobble
gárəff-ət	*sə-gárəff-ət*	to kneel / to make kneel

3.1.3.2.1 Causative with suppletion

For all verbal derivation the etymology of the roots is of crucial importance. Verb roots of Songhay origin cannot take derivational morphemes. These roots are replaced by suppletive roots in order to take derivational prefixes. In such suppletive forms, both the prefix and the root have a Tuareg background.

The examples below show verbs with (a) a descriptive meaning, (b) other intransitive verbs, and (c) transitive verbs.

(13) Some examples of suppletion of Songhay roots

	Songay root		causative	gloss
a)	*bér*	to be big	*ʃ-ámɣar*	to honor (person) to respect (person)

	qóq	to be dry	*s-áɣər*	to dry
	kuŋgú	to be full	*s-íywən*	to eat enough
b)	*káŋ*	to fall	*ʃ-ə́ḍḍər*	to make fall
	héw	to cry	*s-əlhá*	to make cry
	gorá	to sit	*ʃ-áɣam*	to make sit
c)	*záw*	to take	*ʃ-úuwa*	to send s.th. to s.b.
	taŋgá	to lead (animal)	*ʃ-áwət*	to make go (animal) ahead of s.b.
	dút	to pound	*ʒ-íygiʒ*	to make s.b. pound

There are over one hundred verbs in our corpus that have a suppletive root for the causative (as well as the other derivations treated below) (see Appendix II).

3.1.3.2.2 Exceptions for sibilant choice

The large majority of the causative forms are covered by the rules of sibilant harmony given above.

However, there exist a number of roots that do not follow these rules. In particular the choice of a sibilant when no sibilant is present in the root poses some problems. Our examples show the following tendencies for roots that contain no sibilant:

1) Roots without sibilant starting with two voiced consonants may take /z/

(14) Roots with voiced consonants

root	causative	gloss (of the causative)
bə́ləl	*zə́-bbələl*	to set at ease
bə́rmət	*zə́-bbərmət*	to change money
də́ləg	*zə́-ddələg*	to make decorate (leather/face)
gə́nnəti	*zə-gə́nnəti*	to make bend one's head backwards
wulə́twulət	*zu-wulə́twulət*	to make bend (wind)

2) Roots without sibilant containing pharyngeal sounds including /ɣ/, /x/ and /w/ may take /ʃ/ (cf. a) below). The same is true for some of the suppleted roots that contain a pharyngeal consonant. The examples are under b) below.

(15) Roots with pharyngeal consonants

	root	causative	gloss (of the causative)
a)	*yáħala*	*ʃ-áħala*	to make pure (religiously)
	yáʕad	*ʃ-áʕad*	to make straight
	yíxlək	*ʃ-əxlək*	to create
	yilwá	*ʃ-ilwá*	to make wide
b)	*bér*	*ʃ-ámɣar*	to honor (person); to respect (person)
	káŋ	*ʃ-əḍḍər*	to make fall
	báaɣa	*ʃ-éeṛa*	to make s.b. love s.b.
	záw	*ʃ-úuwa*	to send s.th. to s.b.
	taŋgá	*ʃ-əwət*	to make go (animal) ahead of s.b.

There are a few other irregular forms:

(16) Irregular forms

root	causative	gloss (of the causative)
raɣís	*ʃə-rɣəʃ*	to make cheap / to facilitate
déeraw	*sú-dru*	to make have in common

A few Songhay cognates take the Tamasheq derivational prefix without suppletion. This exceptional behavior is probably due to their shape, which (falsely) suggests a Tamasheq origin. Some of these verbs start with /y-/, which is in most cases indicates a Tamasheq cognate. One root has an initial sibilant /ʒ/ that apparently is interpreted as a causative morpheme and therefore is allowed to take a prefix. This particular verb root has for some unknown reason added a final /-t/ and so falls in a class of verbs that are otherwise of Tamasheq origin. The Songhay cognates of Timbuktu (KCH) are given unless marked differently (KS for Gao).

(17) *Songhay roots with causative prefix*

root	gloss	caus.	gloss	KCH
yéd	to return	*s-eedí*	to make return	yee
yéeri	to vomit	*s-éeri*	to cause to vomit	yeeri (KS)
ʒíibit	to be dirty	*ʒí-ʒibit*	to make dirty	jiibi

The case of *s-eedí* is remarkable, as there appears an additional /i/ at the end of the stem. Possibly, /yeeri/ 'to restitute' is related to /yed/ 'return'. The causative may have been taken from an older disyllabic form.

3.1.3.2.3 Double causative

A small number of roots allow for double causatives. Some of them are semantically motivated, while others cannot be satisfactorily explained. The examples under (a) are Tamasheq cognates with an intransitive use in the root form (to graze; to be divorced). The first causative form adds a human will (to make (animal) graze; to make be divorced = to divorce) and the second causative involves one more human causer (to make somebody graze (animal); make somebody divorce)

Example (b) has an intransitive root in Tadaksahak (*keedí* 'be up on = be mounted'). *s-áwəṇ* is used in an active form 'to put somebody on something'. The double causative form adds another human actor (make somebody put something on something)

(c) gives examples with suppletion where no simple causative is found. These cases cannot be explained with semantic or syntactic reasoning.

(18) *Double causatives*

	root	causative	double-causative	gloss
a)	*yíḍəṇ*	*ṣ-áḍəṇ*	*ṣá-ṣṣ-əḍəṇ*	make graze
	léf	*ʃí-ləf*	*ʃí-ʃʃi-ləf*	make divorce
b)	*keedí*	*ṣ-áwəṇ*	*ṣá-ṣṣ-əwəṇ*	make put on
c)	*wí*		*sə-súw-aŋɣa*	make kill
	mún		*sá-ss-əŋɣəl*	make pour

3.1.3.3 Reciprocal and Middle

As in most languages of the world, Tadaksahak has some inherently reciprocal verbs. But the larger part is marked with a prefix as shown below.

3.1.3.3.1 Lexical reciprocals

A number of verbs have a reciprocal component that is not marked with a morpheme. Syntactically, when they are found with a plural subject they do not need a complement. When used with a subject in the singular, a complement is needed to be grammatically correct.

Examples:

(19) a) *i-b-zóɣ.*
3p-IMPERF-fight.verbally
they fight (each other).

b) *i-b-saawá.*
3p-IMPERF-look.alike
they look alike (like each other).

The examples in our corpus with marked reciprocals exceed by far the few unmarked roots.

3.1.3.3.2 Morphologically marked reciprocals and middles

The morphemes found to express reciprocal or middle meanings are the following.

(20) *Reciprocal morphemes*

m(ə)-	root contains no labial C
n(ə)-	root contains labial C
nə-m(m)(ə)-	

The basic form of the prefix is *mə-*, as illustrated under (a). The use of the allomorph *nə-* is conditioned by the consonants in the root it is prefixed to. Verb roots containing an /m/ or any other labial (/b/ or /f/; /w/ does not count as labial for this feature) take the *nə-* prefix. See examples under (b).

(21) Use of allomorphs

	verb root	reciprocal	gloss
a)	*yídɣər*	*m-ədɣər*	to be glued / to adhere to
	yíxwəl	*m-áxwəl*	to be preoccupied by s.th. / to be bothered by s.b.
	ṭəṛṭəṛ	*mə-ṭəṛṭəṛ*	to be along / to line up
b)	*yírzəm*	*n-ərzəm*	to be tied around / to cramp
	yíbdəd	*n-əbdəd*	to be held up / to stand together
	gərtəttəf	*nə-gərtəttəf*	to stumble / to stumble

Morphologically marked reciprocals cannot be distinguished from middles on the grounds of the morpheme. One meaning found for the morpheme is 'doing something together' or paraphrased differently 'doing something with each other' as opposed to 'doing something to each other'. However, it is striking that a very high percentage of verbs with the doubled *nə-m(m)(ə)-* prefix express reciprocity, implying a patient and an agent.

A reasonable amount of verbs occur with a reciprocal prefix without a basic underived root to belong to.

(22) Roots not found without reciprocal prefix

stem	gloss
m-ədəd	to be weak
m-ədəs	to be compared
m-ədaɣ	to be side by side
m-əṇi	to meet
m-əgrəz	to regret
m-əɣəlɣəl	to be thoughtful about
m-əʃəqət	to be preoccupied with
m-əṭṭi	to change (one self)
m-ələli	to be inside out
m-əṇəṇ-ət	to turn oneself around
m-əṭṭəkwi	to move from
n-əfli	to be at ease

As observed with the roots that take a causative prefix, the different types of roots behave similarly when taking the reciprocal prefix. /y/ is dropped (a), some roots (and stems) need to adjust the stress to the ante-penultimate syllable (b) and some roots resyllabify (c).

(23) Roots and stems taking the reciprocal prefix

	root	reciprocal	gloss root	gloss derived root
a)	*yídɣər*	*m-ədɣər*	to be glued	to adhere to
	yiltáɣ	*m-áltaɣ*	to be glued	to adhere together
	yígər	*m-ágər*	to push away	to butt
	yískəl	*m-áskəl*	to take away	to change against
	yíbdəd	*n-ábdəd*	to be held up	to stand together
	yíɣbəṛ	*n-áɣbəṛ*	to squeeze between	to squeeze self between
	yíktəb	*n-áktəb*	to write	to write each other
	yírkəb	*n-árkəb*	to pull	to pull from s.th.
	yírdəf	*n-árdəf*	to be unhooked	to hook with
	yírzəm	*n-árzəm*	to hang around s.th.	to cramp
	yímbəz	*n-ámbəz*	to disperse	to be dispersed among
b)	*gártəttəf*	*nə-gártəttəf*	to stumble	to stumble
	kárəbət	*nə-kárəbət*	to join	to join
	táltəl	*má-təltəl*	to roll up	to be tangled up
	ṭáṛṭəṛ	*má-ṭəṛṭəṛ*	to be along	to line up
c)	*ḍáṇay*	*má-ḍṇi*	to fill	to force feed
	ẓáḷay	*má-ẓḷi*	to be different	to confuse with
	fəlás	*ná-fləs*	to believe s.th.	to have confidence in s.b.

Mainstream Songhay has no morphological reciprocals. When not

expressed lexically they are analytic and formed with the lexeme 'friend' without definite and plural morphemes serving to mark 'each other'. It is not surprising therefore that in Tadaksahak Songhay cognates taking reciprocal morphology are borrowed from Tamasheq.

(24) Songhay roots suppleted by Tamasheq cognates

root	reciprocal	gloss root/ derived suppleted root	Tamasheq cognate
káy	*n-əbdəd*	to stop/stand together	əbdəd
na	*n-əkfa*	to give/give each other	əkfa
ṭáaṭab	*n-əẓmi*	to sew/sew together	əẓməy
gorá	*ná-ɣiima*	to sit/sit together	ɣamu

The double prefix is very frequent with suppletive roots and mostly indicates reciprocals.

(25) Suppletive roots with double prefix

root	reciprocal	gloss root	gloss derived root
wi	*ná-mm-anɣa*	to kill	to beat/kill each other
dá	*ná-mm-əga*	to do	to do to each other
mór	*ná-mm-əgəg*	to be distant	to be distant from each other
mán	*ná-mm-əhəz*	to be close	to be close to each other
háaṣi	*ná-mm-əswud*	to look	to look at each other
kár	*ná-mm-əwut*	to hit	to hit each other
záw	*ná-mm-əwi*	to take	to be infectious (lit: to be taken to each other)

There are a number of underived Tamasheq cognates that also take a derived form with the double prefix. In many cases a meaning of 'doing together/with each other' is conveyed.

(26) *Tamasheq cognates with double prefix*

root	reciprocal	gloss root	gloss derived root
yardá	*nə́-m-arda*	to agree	to agree with each other
yídkəl	*nə́-m-ədkəl*	to pick up	to pick up together
yíɣli	*nə́-m-əɣli*	to go around	to go around from two sides
yogá	*nə́-mm-əga*	to spot	to spot each other
yíntəz	*nə́-m-əntəz*	to pull quickly	to pull from each other
yíṛəm	*nə́-m-əṛəm*	to try	to try with each other
yíṛəṣ	*nə́-m-əṛəṣ*	to ford	to ford together
yíwaɣ	*nə́-mm-əwaɣ*	to block way	to block passage together
yizgár	*nə́-mm-əzgər*	to bear sb. a grudge	to bear a grudge against each other
kúʃit	*nə-mú-kuʃit*	to inherit	to inherit from each other
ʃə́gn-ət	*nə-mə́-ʃəgn-ət*	to reproach	to reproach each other
kəsán	*nə́-mmə-ksan*	to refuse	to refuse to (hold) together
zə́ray	*nə́-mmə-zri*	to pass after sb.	to miss each other

A few roots are found with the single as well as with the double prefix; in such cases different meanings are conveyed, e.g. *yírkəb* 'to be pulled' (underived form); *n-ə́rkəb* 'to pull from' (singly derived form); *nə́-mm-ərkəb* 'to pull between each other' (double derivation).

3.1.3.4 Passive t(ə)-, tuw- *and* tuwa-

There are three prefixes which may form the passive of a verb.

(27) *Passive prefixes*
t(ə)-
tuw-
tuwa-

Using a passive prefix always implies a human agent that the speaker does not want to name. At the same time it is ungrammatical to add the agent in the same clause as is possible in English, e.g. 'he was hit by his brother.'

Some semantically less 'active' verbs like 'call' allow for a complement with *ənda* 'with' when used in the passive voice, e.g. 'the place was called *ənda* T.'

tuwa- only occurs preceding causativized stems and the few roots of Songhay origin that allow the passive morpheme. This suggests that this is the default prefix for already derived stems and a few Songhay cognates.

The allomorphs *tuw-* and *t(ə)-* are less predictable. The shorter form tends to replace the initial /y/ of that verb class. But there are *tuw-* passives found preceding y-initial verbs.

tuw- is the least frequent allomorph found mostly preceding suppletive roots that replace Songhay verbs to form the passive voice.

The following list shows different ways to form the passive voice. Group (a) shows the replacement of /y-/ with *t-*. The examples under (b) resyllabify to take the prefix. (c) gives the only example in our corpus of a y-verb that takes the *tuw-* prefix. The last example (d) has no 'basic' form, only a causative stem is known.

(28) Passive forms of Tamasheq cognates

	root	passive	gloss
a)	*yíbət*	*t-ábət*	be snatched
	yíləm	*t-áləm*	be opened
	yíqbul	*t-áqbul*	be accepted
	yíttəl	*t-áttəl*	be wound around
	yíkkəl	*t-ákkəl*	be elevated
	yiwáɣ	*t-úwaɣ*	be blocked
b)	*ḍáṇay*	*tá-ḍṇi*	be filled
	kəsán	*tá-ksan*	be refused
c)	*yílka*	*túw-əlka*	be disdained
d)	*ʃ-úḍuf*	*t-áḍəf*	be withheld

Songhay roots undergo suppletion when used in the passive form. Both kinds of prefixes are attested. The list below gives examples for the *t(ə)-* prefix under (a) and under (b) are the forms with *tuw-*.

(29) Passive forms of Songhay roots with the Tamasheq cognate.

	root	passive	gloss	Tam cognate
a)	*záw*	*t-áwi*	bring	awəy
	keedí	*t-áwəṇ*	climb/ride	əwəṇ
	dumbú	*t-ágzəm*	cut/slaughter	əgzəm
	dá	*t-ága*	do	əgu
	nín	*t-íʃu*	drink	ăʃ(w)u
	ŋá	*t-ákʃa*	eat	ikʃa
	zóɣ	*t-ákṇəṣ*	fight (also verbally)	əkṇəs
	habá	*t-áfrəd*	gather (food)	əfrəd
	ná	*t-ákfa*	give	ăkfu
	kár	*t-áwət*	hit	əwət
	záy	*t-úkuṛ*	steal	akər
	gón	*t-álməz*	swallow	əlməẓ
	diní	*t-úbuẓ*	take	əbəẓ

	root	passive	gloss	Tam cognate
	káw	*t-úkuʃ*	take out	əkkəṣ
	hár	*t-ámal*	tell	əməl
	háaṣi	*t-úṣwuḍ*	look at	əswəḍ
	hurrú	*t-ágmi*	look for	əgməy
b)	*mó*	*túw-əsla*	hear	ăslu
	ṣót	*túw-əggəd*	jump over	əggəd
	wí	*túw-anɣa*	kill/hit	anɣu
	báy	*túw-asun*	know	əssən
	dís	*túw-iya*	leave alone	ăyyu
	céw	*túw-aɣra*	call s.b.	ăɣru
	báaɣa	*túw-əṛa*	love/want	iṛu
	qaarán	*túw-aɣra*	read/study	ăɣru
	cí	*túw-əṇṇa*	say	ăṇṇu
	guná	*túw-əni*	see	ənəy

The full form *tuwa-* appears mostly on stems that have a causative morpheme. Adding two syllables to a di-syllabic root or stem always entails stress shift from the first syllable of the stem to the ante-penultimate syllable which is the default stress for verbs (third from right).

(30) Passive forms of Tamasheq causative roots

stem	passive	gloss
s-árkəb	*tuwá-s-ərkəb*	be pulled
ṣ-áṣṣəg	*tuwá-ṣ-əṣṣəg*	be milked
z-úguz	*tuwá-z-uguz*	be made to enter

One example occurs that has a non-sibilant initial C but behaves like a causative. This root may be interpreted as having an atypical causative prefix, i.e., the reduplication of the root suggests such reading. ‘to load’ *jíjí* (from Tamasheq /găggu/ ‘to load’) has the passive form *tuwá-jiji* ‘be loaded’.

There are a few Songhay verbs that take this morpheme for the passive voice. Find the attested examples in the list below.

(31) Songhay roots taking the passive morpheme

root	passive	gloss
fík	*túwa-fik*	be planted
mún	*túwa-mun*	be poured out
tím	*túwa-tim*	be pricked (get an injection)

3.1.3.5 Reduplication

In Mainstream Songhay, according to Heath (1999a:141; 1999b:173), verb-stem reduplication is not a very common feature, but sometimes indicates iteration or prolongation.

It is not extremely productive in Tadaksahak either, but there are a number of examples in our corpus that merit discussion.

The general meaning of duplicated verb stems suggests ‘repeated action’ ‘doing many of’ for action verbs as illustrated in (a) and conveys ‘intensification’ for qualifying verbs (b).

(32) Reduplication of Songhay cognates

	root	gloss	duplicated	gloss
a)	*báq*	to break	*báqbaq*	to split (into many small pieces)
	káy	to stand	*káykay*	to stroll (stop many times)
	háw	to attach	*háwhaw*	to attach many
	kós	to cut	*koskós*	to cut in pieces
	mún	to throw out	*munmún*	to throw out (repeatedly)
b)	*cidáy*	to be red	*cidícidi*	to be very red
	kóoray	to be white	*korókoray*	to be very white
	ceená	to be small	*cinícina*	to be very small

The disyllabic roots shown in (b) above reduplicate the initial CVC. A copy vowel is inserted to link to the complete second segment. All

long vowels of the root are shortened. In addition, the last example has a higher vowel. This could be caused by shortening and the preceding palatal C. In these examples the stress pattern fits with the default for verbs.

The verb roots of Tamasheq origin need to adjust for reduplication. y-verbs loose /yV-/ and re-syllabify. The two most frequent patterns modify as follows:

(33) Reduplication patterns for Tamasheq cognates

$yiC_1VC_2 \rightarrow C_1VC_2\text{-}C_1VC_2$

$yiC_1C_2əC_3 \rightarrow C_1əC_2əC_3\text{-}C_1əC_2əC_3$

The illustrations are under (a) in the list below.

Verb roots with final /-ət/ lose this syllable and duplicate the remaining part. Examples are under (b) below.

(34) Reduplication of Tamasheq cognates

	root	gloss	duplicated	gloss
a)	*yíttəl*	to roll around	*téltəl*	to roll up
	yífṛəṣ	to cut (kind of)	*fəṛə́ṣfəṛəṣ*	to cut in many small pieces
	yísləf	to carve	*sələ́fsələf*	to carve many
	yíɣli(y)	to go around	*ɣəlíyɣəli*	to go around repeatedly
b)	*búk-ut*	to thresh (millet)	*búkbuk*	to clean by hitting
	təbb-ət	to hammer	*təbtəb*	to castrate (kind of)
	kə́rəmm-ət	to cut s.th. dry	*kərə́mkərəm*	to crumble

A number of verb stems only occur as duplications. Both forms with a Songhay background (e.g. *cáycay* 'to weave', cf. KCH *key* 'to weave') and forms with a Tamasheq background belong to this class.

Among the CVC-CVC patterned stems, the vowels can be different from schwa. This may indicate that some of these forms are more likely of Songhay stock. See examples under (a) below.

The doubled di-syllabic stems invariably have the vowel schwa. With four syllables these stems take the default stress for verbs on the ante-penultimate syllable. Illustrations are in (b).

(35) *Verbs only appearing in a duplicated form*

	stem	gloss
a)	*cáycay*	to weave (up and down, up and down)
	dəźdəz	to castrate (kind of)
	kúfkuf	to castrate (kind of)
	dígdig	to break/split (many small pieces)
	fə́ṛfəṛ	to rub fast (foot on camel's neck)
	kúŋkun	to roll up (mat)
	rə́grəg	to tie (tent sticks) together
	ləfləf	to climb (insects)
	mə́ḷməḷ	to wind (through material)
b)	*gəṛə́ẓgəṛəẓ*	to chew with noise
	kaṭámkaṭam	to cut (meat) in small pieces
	kəṛə́fkəṛəf	to tinker
	rəgə́trəgət	to rock
	rəkíyrəki	to wobble
	təmə́ɣtəməɣ	to wink at somebody.

The examples given so far only show un-derived roots. There exist also derived forms with reduplication. Two different strategies can be observed.

a) derivation applies to the reduplicated stem

b) derived stems are duplicated

Pattern (a) is found in Tamasheq and must have its origin with imported lexical items from that language.

Pattern (b) seems to be an innovation. It is striking that the stress pattern on these reduplications is different from the default. The stress of the duplicated element is echoed in a weaker form on the second element however long the string of syllables may be. The shortest example is CV́CV-CV̩CV and the longest has four syllables to be duplicated.

(36) Reduplicated roots with causative derivation

stem	caus + duplicated stem	gloss of the causative
tíyti	*sə́-tiyti*	drive s.th. into
ɣəlíyɣəli	*sə-ɣəlíyɣəli*	make pivot
	sə́-foɣfoɣ	click with lips to call sheep
wələ́twəl-ət	*sə-wələ́twəl-ət*	make bend in the wind

The last example on the above list violates the rule that requires duplicated roots to drop the final *-et* syllable.

(37) Duplicated causative stems

stem	duplicated stem	gloss duplication
ʃ-ídu	*ʃ-ídu-ʃ-̣idu*	assemble many things
s-áɣli	*s-áɣli-s-ạɣli*	make go around
ṣ-áṭṭəb	*ṣ-áṭṭəb-ṣ-ạṭṭəb*	pour repeatedly small quantities
sə-tárəm-ət	*sə-tárəm-ət-sə-tạrəm-ət*	distribute something dry and small

The behavior of stress in duplicated roots and stems is shown in the following scheme.

(38) Duplication + Stress

[root] + [root] -->	*CVCV́-CVCV*
Caus-[root + root]	*CV-CV́CVCV*
[stem] + [stem] -->	*CV́CV-C̣VCV*

3.1.3.6 Directional -kat *and* -an

The directional markers are not obligatory but if present, they are suffix to the verb stem.

Mainstream Songhay only has a centripetal suffix (‘towards the speaker’), but Tamasheq has both, a centripetal and centrifugal

('away from the speaker') enclitic. Tadaksahak may have copied this two-way opposition from Tamasheq.

KCH and KS have a suffix /-kate/ with the meaning 'to here' which is probably related to the verb /kata ~ kate/ 'bring' (Heath 1999a:140; 1999b:172).

The centrifugal enclitic in Tamasheq /(n)ín/ (Prasse et al. 579;620) 'thither' looks similar to the Tadaksahak form *-(n)an* but has irregular vowel quality. In other Songhay languages the verb 'release, leave alone, let go' is attested as /nan/ (Timbuktu) and /naŋ/ (Gao). This verb would also constitute a possible origin of the Tadaksahak directional.

-kat indicates the centripetal direction. It is glossed VEN 'ventive' indicating 'moving towards the deictic center (or speaker)'. *-an* stands for the opposite direction (centrifugal) and is glossed ALL 'allative' meaning 'moving away from the speaker'.

In Tadaksahak *-kat* is much more frequent in texts than *-an*. Movement verbs take the suffixes the most easily, e.g., 'to return' *yéd* is most frequently encountered as *yée-kat* 'return to here' (see 'irregular assimilation with /k/' for the pronunciation 2.4.1.5) but also as *yéedan* 'return to there'.

Other verbs regularly found with *-kat* are: 'leave' 'pass', 'leave from', 'run' and 'go out'. The movement verb *tén* 'to arrive' (possibly cognate with KCH /tenje/ 'go towards, head for') does not occur with the suffix.

The suffixes are in no way restricted to movement verbs. They are found on verbs like 'undo', 'do', 'attach', 'cut', 'kill', 'see' or 'sneeze'.

The occurrence of nouns containing the suffix confirms its derivational status, *kos-kat-én* (cut-VEN-PL) 'the cut-off things'.

Tadaksahak has no underived verb root with the meaning 'bring'. The verb *záw* 'take' is usually heard with *-kat* to express 'bring'. Likewise, *yímmər* 'pass by' with *-kat* 'pass (somewhere) to here' is another way to express 'bring'. These examples could be rephrased as 'take and bring'/'pass and bring' respectively. However, the occurrence of the suffix with non-movement verbs suggests a semantic centripetal direction only not involving a 'bring' component.

There is no verb root in the language to express 'to come'. The form /kaa/ 'to come' from Songhay is not found, only the form *koy* 'to leave'

is used. This root expresses a movement away from some place and it is then specified whether this movement is towards the speaker or away from her/him.

(39) a) *a=kkó(y).*
3s=leave
s/he left.

b) *ni=kkóy-kat* *aɣáy.*
2s=leave-VEN 1s.O
you came to me. (you left to here [where I am])

c) *a=kkóy-an* *áy=n* *híj-en*
3s=leave-ALL 3s=GEN tent-PL
s/he went to his/her camp. (s/he left for there to...)

The imperative of this verb when used to cause a movement towards the speaker is a suppletive root from Tamasheq (4.3.5).

Some verbs are hardly ever used without a directional suffix. *dáy* 'to deal' is an example; while the verb can occur without a suffix (see a), it is by far most frequently encountered with the suffix (see b and c):

(40) a) *danj-én* *i=b-dáy* *ʃammúʃ.*
charcoal-PL 3p=IMPERF-deal five
(bags of) charcoal are dealt for 25 Fcfa.

b) *aɣa=ddáy-kat* *t-a-lágas-t.*
1s=deal-VEN F-SG-melon-F.SG
I bought a melon.

c) *a=b-dáy-an* *táyni.*
3s=IMPERF-deal-ALL date
he sells dates.

For some verbs the directional suffixes are so much part of the verb that the root cannot be used without the morpheme. The noun 'forgetfulness' is *diŋgá*, the verb 'to forget' does not occur without the suffix *-an* ALL.

(41) *aɣa=ddiŋg(á)-an* *hé* *fó.*
1s=forget-ALL thing IND
I forgot something.

Likewise 'to continue to do' *yillán-an* always has the suffix.

(42) *yíllan-an* *ənd(a)* *alħál* *aɣó* *(á)yda!*
continue-ALL COMV behavior DET DEM.PRX
continue this behavior!

The verb *fúr* 'to throw' can take the suffix *-an* 'to throw away'. When this form is used with a non-human agent people give the meaning 'to be lost'.

(43) *aɣa=n* *t-ée-ɣar-t* *a=ffur-án.*
1s=GEN F-SG-bowl-F.SG 3s=throw-ALL
my bowl is lost.

With the verb *yíkti* 'to remember/be reminded of' the centripetal suffix *-kat* is almost always present.

(44) *a)* *aɣa-yyíkti-kat* *sa…*
1s=remember-VEN COMP
I remember that…

b) *a=yyíkti-kat* *aɣáy* *aɣ=n* *áyyaw.*
3s=remember-VEN 1s.IO 1s=GEN nephew
he reminds me of my nephew.

Non-directional verbs such as 'see', 'sneeze' or 'find' can also take the directional suffixes. From the analysis of narratives we find that this device is regularly used to indicate the center of attention or whom the narrator considers to be the main actor in the deed. The feature is also used to show perspective within the story.

3.1.4 Verb Inflection

In his Songhay grammars Heath talks about the 'verb phrase structure' when he addresses inflection and Mood-Aspect-Negation (MAN) morphemes. What is a verb phrase in Mainstream Songhay shows the behavior of a verbal word in Tadaksahak, i.e. inflection and the verb stem form a unit that cannot be cut into separate words. Such behavior is well known and normal for Berber languages. Person, number, MAN and the stem form a single unit with prefixes, infixes, suffixes and vowel changes, as well as certain stress patterns.

In Tadaksahak the inflected verb must contain person/number, MAN, and the verb stem regardless of the presence of a noun phrase. This is different from Mainstream Songhay where there is no obligatory agreement of person/number when an overt noun phrase is present.

The Tadaksahak structure with obligatory person reference regardless of the presence or absence of an NP is reminiscent of Tamasheq.

Two of the six person-clitics have an allomorph depending on the shape of the following MAN-morpheme (see below). One clitic re-syllabifies when followed by two of the MAN-morphemes (Phonology 2.4.2.2). In addition, the inflected verb has only one stressed syllable, typically on the verb stem.

In the following sections the subject clitics and the MAN morphemes are presented. Together with the verb stem they form the verbal word. The scheme below summarizes the possible elements found in the verbal word. The elements in brackets indicate that they are optional.

(45) *Elements of the verbal word*

subject clitic	MAN	**stem**	(3rd person direct object)

3.1.4.1 Subject clitic

All inflectional morphemes in Tadaksahak are prefixed except for the direct objects pronominal clitics. The categories they represent are person (1st, 2nd, 3rd) and number (singular, plural). Unlike Tamasheq but according to the general Songhay pattern, no distinction between masculine and feminine is made in pronominal elements. Subject clitics will be glossed as 1s, 2s, 3s, 1p, 2p and 3p

(46) *Subject clitics:*

singular		plural	
aɣ(a)=	1s	*ar(ə)=*	1p
ni=/ən=	2s	*andə=*	2p
a=	3s	*i=*	3p

The two first-person clitics have an allomorph determined by the following syllable. With the MAN markers of the shape CV- the short subject clitic, *aɣ-* is used (and pronounced [ax] before *sə-* and *tə-* see Phonology 2.4.1.3), while the MAN markers of the shape C- are preceded by the longer form, *aɣa-*.

(47)

aɣ=tə-qaarán	*aɣa=m-qaarán*
1s=FUT-study	1s=SUBJ-study
I will study.	I may/should study
aɣ=sə-qaarán	*aɣa=f-qaarán*
1s=NEG.IMPERF-study	1s=IMPERF-study
I do not study / I am not ...	I study / I am studying
aɣ=nə-qaarán	*aɣa=qqaarán*
1s=NEG.PERF-study	1s=study
I did not study.	I studied.

The second person singular undergoes resyllabification when preceding the CV- shaped MAN morphemes *sə-* and *tə-* (Phonology 2.4.2.2).

(48)

ən=tə-qaarán	*ni=m-qaarán*
2s=NEG.IMPERF-study	2s=SUBJ-study
you will study.	you may / should study.
ən=sə-qaarán	*ni=f-qaarán*
2s=FUT-study	2s=IMPERF-study
you do / will not study.	you study / you are studying.
ni=nə-qaarán	*ni=qqaarán*
2s=NEG.PERF-study	2s=study
you did not study .	you studied.

The other clitics do not change their shape whatever the shape of the following MAN marker.

3.1.4.2 Mood-Aspect-Negation (MAN) morphemes

The paradigm of MAN markers shows five morphemes, labeled as follows:

imperfective (IMPERF)
subjunctive (SUBJ)
future (FUT)
negative imperfective (NEG.IMPERF)
negative perfective (NEG.PERF)

These morphemes are mutually exclusive, and can never be combined.

The perfective is unmarked; however, due to phonological rules (see 2.4.1.7.2), there is gemination of the initial consonant of the verb in

this aspect.

All other markers are marked by a single consonant or have the pattern Cə-.

(49) *MAN paradigm:*

	affirmative	negative
perfective	-	*nə-*
imperfective	*b-/bə-/f-*	*sə-*
future	*tə-*	
subjunctive	*m-*	

The imperfective marker appears in three forms. They are conditioned by the following consonant of the stem.

f- before voiceless plosives
bə- with *b*-initial verbs
b- elsewhere

This is illustrated below:

(50) *Devoicing of* b- *morpheme*

C	3p-IMPERF-verb	gloss
/t/	*a=f-tudú*	s/he is responding
/d/	*a=b-dudú*	s/he is pouring
/c/	*a=f-ci*	s/he is saying
/j/	*a=b-jiɲjirí*	s/he is praying
/k/	*a=f-kuná*	s/he is finding
/g/	*a=b-guná*	s/he is seeing
/q/	*a=f-qaarán*	s/he is studying

(51) *Allomorph* bə- *with* b- *initial verbs*

3p-IMPERF-verb	gloss
a=bə-bəbbá	she is carrying (child) on the back
a=bə-bə́ləgləg	it (fire) is crackling
a=bə-bə́llen	he is wrestling
a=bə-búkbuk	s/he is cleaning by hitting

a=bə-bíibi	s/he/it is black

All y-initial verb roots, also those with Songhay etymology, lose their initial consonant before MAN markers consisting of a single consonant, i.e. the imperfective and the subjunctive.

(52) b- *'imperfective' MAN deleting initial y-*

3p-IMPERF-verb	gloss
a=bb-éeri	s/he is throwing up
a=bb-éd	s/he returns
a=bb-ála	s/he rolls (rope)
a=bb-ágməm	s/he chews (habitually) (tobacco)
a=bb-aráɣ	s/he/it is yellow

(53) m- *'subjunctive' MAN deleting initial y-*

3p-SUBJ-verb	gloss
a=mm-éeri	would that s/he throws up
a=mm-éd	would that s/he returns
a=mm-ála	would that s/he rolls (rope)
a=mm-ágməm	would that s/he chews (tobacco)

More discussion about the MAN system can be found under 4.2 in the syntax part.

3.1.4.3 Direct object clitic

Direct object pronominal markers fall into two groups. First and second person markers have no influence on the form of the preceding verb form. The third person direct object clitics *=a* 'him/her/it' and *=i* 'them', which consist of a single vowel, behave differently. They cause a final closed syllable of the verb stem to open and reveal a possible long vowel in this syllable. The other V-initial direct object pronouns do not open the preceding closed syllable. This indicates that *aɣáy* 1s.O, *áari* 1p.O and *ándi* 2p.O are not closely knit to the verbal word. *nín* 2s.O starts with a consonant and cannot influence a preceding closed syllable.

(54) Direct objects

a) 3s=pound

a=ddút	s/he pounded.
a=ddút áari hayní	s/he pounded millet for us.
a=dduut=á	s/he pounded it (millet).

b) 3s=finish

a=bbén	it is finished.
a=bbén áari	s/he finished us.
a=bbeen=á	s/he finished him/her/it.

The last possible element of the verbal word is the third person direct object clitic.

3.1.5 Adverbs

There are only a few adverbs that modify verbs. Manner is often part of the meaning of the verb. Time and space expressions are abundant but most of them are noun phrases used adverbially. We present here only the manner adverbs and three spatio-temporal adverbs.

3.1.5.1 Manner

The only manner adverbs which are regularly used are the following:

(55) Manner adverbs

ʒik	quickly
sallánda	carefully
húllən	much

Many verbs contain a ‘manner’ component and need therefore not be modified, e.g. *tə́ləss-ət* ‘to walk lightly’, *yíḍṛəṇ* ‘to return quickly’.

Expressions like ‘doing a lot of something’ or ‘doing something of good quality’ are expressed as a verbal noun construction (4.3.3.1).

3.1.5.2 Spatio-temporal

The three most important deictic adverbs (and adverbial phrases) are listed below.

(56) *Spatio-temporal adverbs*

néeda	here
sénda ~ asénda	there
marád-óoda	now

néeda 'here' has a cognate in KCH /nee daa/ 'right here'.

The distal counterpart *sénda ~ asénda* 'there' seems to go back partly to Tamasheq. Prasse et al. (2003:727) list /sen/ 'towards there, in that direction' Added on this element is the emphatic particle *da* 'exactly'. For the demonstrative use of *sénda ~ asénda* 'that' see 4.1.3.1 and 4.1.4.1.

The temporal expression *marád-óoda* 'now' is composed of a 'time' element *marád* and the demonstrative *óoda* 'this'. Another related term, *marád-da* 'right now', has the same initial element followed by the emphatic particle *da* 'exactly'. **marád* does not occur in isolation. However, it has a cognate in /mareyda/ 'now' in KCH. (Heath 1998a:199).

3.2 Nouns, pronouns, adjectives, numerals

3.2.1 Basic structure of nouns

In the introduction to the morphology the effect of etymological origin in the morphological behavior of verb roots was shown. Nouns behave in a similar way: Songhay nouns are formed differently and their morphology is quite different from that of nouns coming from Tamasheq.

The basic noun structure can be presented in two schemes. One group of nouns has no prefix and covers most of the Songhay cognates, Arabic loans and some Tamasheq nouns. The other group has a prefix and mostly consists of nouns from Tamasheq.

Type 1: nouns without prefix

(prefix)	- STEM -	(suffix)
(number) only pl		(number) only pl

Type 2: nouns with a prefix

prefix	- STEM -	(suffix)
number	(number)	(number)
(gender)		(gender)

Type 1 nouns mark plural by means of a suffix or a prefix, but not generally both. The absence of a plural morpheme indicates the inherent singular number of the noun.

Type 2 nouns always have a prefix that marks number. Both singular and plural are explicitly marked. Plural may be marked by a suffix and/or by a certain vowel pattern. If gender is expressed, it is always marked in the prefix, and sometimes also in the suffix. When a plural suffix is present the gender suffix is absent.

Nouns may consist of one syllable; however the majority of the nouns have two or three syllables. Some mono-morphemic nouns of four syllables are found.

3.2.2 Gender

Gender is a category which only plays on the lexical and derivational level. There is no gender agreement in the language. The only reason to consider gender a category in Tadaksahak is the existence of a lot of nouns which occur in two genders with a relatively clear semantic correlation between the choice of the gender and the meaning of the item. For those nouns which do not allow for a gender opposition, there is no grammatical reason to assign them to one or the other gender. However, in most elements derived from Tamasheq, the formal make-up of the noun makes use of the same elements which in gendered nouns (i.e. those allowing for the opposition) are used to mark the opposition.

Tadaksahak has two genders, which, following the grammatical tradition in Berber studies, will be referred to as masculine and feminine. Masculine gender has no formal expression, feminine gender is marked by means of the prefix *t-* and (in most singular nouns), the suffix *-t*, e.g. *ée-jaf / t-ée-jaf-t* 'dune / small dune'. In those nouns which allow for a gender opposition, the feminine marks some other meanings besides the natural gender of animals and humans. It can mark the diminutive, and it serves for some categories as a nominalizer.

The marker comes from Tamasheq where it is very productive. In Tadaksahak it is not only found with Tamasheq cognates but also observed with nouns of Songhay origin.

When a feminine noun is derived from a noun without a prefix, the prefix consists of the gender morpheme *t-* followed by the default number prefix *a-*. The two elements form a full syllable prefixed to the stem which entails a shift of the stress to the left on the resulting noun, e.g. *moʃaddí* 'paternal uncle' *t-a-moʃáddi-t* 'paternal aunt'.

3.2.2.1 Assimilation rules for the gender suffix -t

The suffix *-t* assimilates to the final consonants of the stem.

We have no evidence of /ʕ/, /ħ/ and /h/ being followed by *-t*. For the other consonants the following rules apply:

Liquids, semivowels and nasals remain unchanged.

Voiced plosives (particularly /b/) and fricatives are devoiced.

If C is any occlusive except /b/, *-t* is fully assimilated; the only trace of the suffix is the devoicing of the stem consonant.

If C is /ɣ/, it is amalgamated with *-t* to be realized as [q].

(57) Examples: unchanged adding -t*:*

final C	without morpheme	with morpheme	gloss
/n/	*a-rgán*	*t-a-rgán-t*	adult camel (male/female)
/m/	*á-ɣlam*	*t-á-ɣlam-t*	riding camel (male/female)
/l/	*a-húlel*	*t-a-húlel-t*	foal of donkey

			(male/female)
/r/	*ée-ɣar*	*t-ée-ɣar-t*	cooking pot / receptacle (kind of)
/y/	*áa-way*	*t-áa-way-t*	kid/lamb (male/female)
/w/	*a-báʒnaw*	*t-a-báʒnaw-t*	old donkey (male/female)

(58) *Devoicing with* -t

final C	without morpheme	with morpheme	gloss
/z/	*a-bóobaz*	*t-a-bóobas-t*	cross cousin (male/female)
/ʒ/	*ú-gmuʒ*	*t-ú-gmuʃ-t*	thumb (normal size/small)
/b/	*yírkəb*	*t-á-rkəp-t*	to pull / tyranny

(59) *Devoicing and full assimilation of* -t.

final C	without morpheme	with morpheme	gloss
/d/	*t-ə-sə́-smad*	*t-a-sə́-smət-t*	points / point
/ḍ/	*a-máawaḍ*	*t-a-máawaṭ-ṭ*	young boy / young female animal
/g/	*t-ə́-zbug-an*	*t-á-zbuk-k*	ropes / rope of waterbag
/q/	*almunáafiq*	*t-almunáafiq-q*	wicked person (male/female)

(60) *Development of /ɣ/ +* -t

final C	without morpheme	with morpheme	gloss
/ɣ/	*a-ʃáqaɣ*	*t-a-ʃáqaq-q*	brother / sister
	t-ə́-lɣ-in	*t-ée-laq-q*	knives / knife

Gender morpheme encodes various meanings in Tadaksahak. Several meanings are the same as in Tamasheq.

3.2.2.2 Natural gender

The gender opposition is used very productively to oppose a female being to its male counterpart. The feature is encountered with humans as well as with animals. The nomadic culture depending on female animals for reproduction and milk as daily nourishment has a large array of nouns for these items. Many kinship terms are found with this feature.

The first group (a) shows nouns of human beings. Under (b) wild and domesticated animals are listed. (c) gives an exception: the female form 'kid' is irregular. Note that 'young cow' *t-áa-ɣit-t* is the feminine form expected from *áa-ɣid* 'male kid'. 'female kid' *t-a-ɣádit-t* is also used as a pet name for girls.

(61) Examples for female

	male	female	gloss
a)	*a-bóobaz*	*t-a-bóobas-t*	cross cousin
	a-lúgus	*t-a-lúgus-t*	sister/brother in law
	a-má-ʒgol	*t-a-má-ʒgol-t*	handsome man/beauty
b)	*áa-har*	*t-áa-har-t*	lion/lioness
	a-báʒnaw	*t-a-báʒnaw-t*	old donkey
	áa-ɣu	*t-áa-ɣi-t*	young bull/cow
	a-lágoḍ	*t-alágoṭ-ṭ*	baby camel, male/female
c)	*áa-ɣid*	*t-a-ɣádit-t*	(goat) kid

Two Songhay cognates in our corpus take the morpheme to mark the opposition male/female. They are shown below.

(62) Songhay cognates with feminine gender morpheme

male	*female*	gloss
ʒeemí	*t-a-ʒéemi-t*	blacksmith
bəkáw	*t-a-bə́kaw-t*	jinn

In contrast *hánʃí* 'dog', also a Songhay cognate, cannot be combined with the feminine morpheme. The term is suppleted by a Tamasheq

cognate with the feminine marker: *t-a-báykor-t* 'bitch'; its logical masculine counterpart (well-attested in Tamasheq) **a-báykor* is not used in Tadaksahak.

A number of animals are only used in forms with the feminine marker (illustrated under (a) below). Other words for female animals, however, have no marker because they are of Songhay origin. Interestingly, these nouns are suppleted by Tamasheq masculine nouns. The nouns under (b) give the name of the male animal used for reproduction and a general term for the female animal. Many terms for sub-categories of these animals are attested in both gender forms.

(63) *Terms for animals*

	male	female	gloss
a)		*t-á-ɣamu-t*	cow without calf
		t-a-sákaf-t	cow without calf
		t-a-zabána-t	ewe having given birth twice in one year
b)	*a-zóolaɣ*	*hinciní*	billy goat / (she-)goat
	á-krar	*feejí*	ram / sheep (ewe)
	a-ḍéṣ	*hawú*	bull / cow
	a-rgán	*yáw*	stallion / female camel

The last term *a-rgán* 'big, male camel' is also found with the feminine affixes in order to designate a particularly tall female animal.

Some informants allow the term 'horse' to take the feminine morpheme for the female animal: *baarí* 'horse (male)', *t-a-báari-t* 'mare'. This term follows a different pattern from the one shown in the list above where the general Songhay noun designates the female animal.

Ethnic names can all take the feminine marker when a woman of that group is designated. At the same time this word is the expression used for the name of the language of the group. *a-ffúulen* > *t-a-ffúulen-t* 'Peul', *bambará* > *t-a-bambára-t* 'Bambara'.

3.2.2.3 Diminutive

Another meaning conveyed by the feminine marker is ‘smallness’. Regular size items have no marker and the small variety takes it. This is illustrated under (a) on the list below. In many cases, the feature may be still present, but the meaning is rather lexicalized (b), and the difference goes beyond that of size. (c) illustrates another meaning of ‘small’ as ‘less capable of doing something’. It is always a man who plays the guitar, so ‘female’ is no alternative reading for this noun.

(64) *Diminutive*

	regular size	small size	gloss
a)	*a-báktaw*	*t-a-báktaw-t*	cushion
	ú-gmuʒ	*t-ú-gmuʃ-t*	thumb
	a-ɣázar	*t-a-ɣázra-t*	temporary pond
	a-jíirar	*t-a-jíirar-t*	river bed
b)	*a-kábar*	*t-a-kábar-t*	wooden milk receptacle (camel; sheep/goat)
	ée-ɣar	*t-ée-ɣar-t*	cooking pot; pot
	á-llaɣ	*t-á-llaq-q*	spear; carved stick (kind of)
	éelaɣ	*t-ée-laq-q*	bone (kind of); knife
c)	*ággu*	*t-ággu-t*	player of traditional guitar; (male) learner of traditional guitar

Diminutive is not always a relevant factor in this kind of opposition. In fact, in a number of lexicalized items, the feminine refers to something bigger than the masculine.

(65) *Irregular pairs*

á-lkas	*t-á-lkas-t*	tea glass; calabash
a-ná-ẓmay	*t-a-ná-ẓmay-t*	needle; sewing machine
a-máaṣur	*t-a-máaṣur-t*	forearm; force
á-mrar	*t-á-mrar-t*	neck rope (baby camel); halter (adult camel)

A few Songhay cognates can take the feminine marker to mark the diminutive:

(66) *Diminutive on Songhay cognates*

karfú	*t-a-kárfu-t*	rope
hamborí	*t-a-hambóri-t*	mortar
cíidaw	*t-a-cídaw-t*	bird

Note the stress shift of the two first expressions with the prefixed full syllable.

Many nouns have feminine morphology, but do not allow for gender opposition. Sometimes, this seems to be linked to the inherent semantics of the word, as in *t-a-ḷíceṭ-ṭ* 'little finger'.

One group of nouns which very regularly has feminine morphology, but that does not allow for a gender opposition are names for trees and shrubs. There are some exceptions with names of southern species and recently imported kinds. Only very few local trees have no *t-…-t* marker. (a) lists names with the morpheme. (b) gives some local trees without the morpheme.

(67) *Tree names*

	name	scientific name
a)	*ṭ-áa-ma-ṭ*	acacia (Acacia ehrenbergiana)
	t-əggar-t	acacia (Acacia nilotica)
	t-á-ẓay-t	acacia (Acacia senegal)
	t-á-dɣəm-t	baobab tree (Adansonia digitata)
	t-a-ʒáyin-t	jujube tree (Ziziphus mauritiana)
	t-a-bóoraq-q	wild date tree (Balanites aegyptiaca)
	t-áa-dan-t	shrub (Boscia senegalensis)
b)	*óoruf*	acacia (Acacia seyal)
	á-ffagag	acacia (Acacia raddiana)
	a-ɣarzəbbi	acacia (Acacia pennata)

name	scientific name
a-dáras	tree (Commiphora africana)

In one case, the fruit of the tree is referred to by means of the masculine form: *a-bóoray* 'fruit of wild date tree' *t-a-bóoraq-q* 'wild date tree'. In most cases the fruits of these trees have names with no relation to the name of the tree. An exception is *t-a-ráka-t* 'shrub (Grewia tenax or Grewia mollis)', a term which also refers to the fruit.

The use of the feminine morpheme in nominalization will be treated below (3.2.4.3).

3.2.3 Plural

All nouns are marked for number. When no overt number marking is present the noun is interpreted as singular.

Even when taking into account the difference between two types of basic nouns, rules for the formation of the plural are quite complicated.

Songhay of Gao (KS) distinguishes a definite and an indefinite plural morpheme. Tadaksahak nouns are not marked morphologically for 'definiteness', and have therefore no opposition between definite and indefinite plural forms.

Type 1 nouns have four different subclasses regarding pluralization. In broad terms they can be grouped etymologically. One class represents nouns from Songhay, one class includes nouns from languages other than Tamasheq or Arabic, the third class covers many Arabic loans. And finally the last class covers Tamasheq cognates without a prefix.

Type 2 nouns often have cognates in Tamasheq and use a whole set of possible vowel schemes and suffixes also found in that language. Yet the scheme used for a particular noun in Tadaksahak does not necessarily correspond to the one used in Tamasheq.

3.2.3.1 Type 1 noun plurals

There are four different schemes for plurals of type 1 nouns.

(68) *Type 1 nouns: Plural morphemes*

1)		STEM	*-en/-an*
2)			*-tan*
3)	*id-*		
4)			*-an*

3.2.3.1.1 *Class 1: -en/-an, -yen/-yan*

Class 1 concerns etymological Songhay nouns.

-en PL may be related to Songhay /yan/, the indefinite plural morpheme, but the exact historical processes behind it are not yet clear.

When the suffix is joined to a vowel-final stem, the final vowel of the stem is dropped. This is illustrated under (a) below. *-en* is the default form; the allomorph *-an* occurs when the root has /e/ in the stem. This is illustrated under (b).

(69) *Songhay cognates*

	singular	plural	gloss
a)	*borá*	*bor-én*	person/people
	bundú	*bund-én*	stick
	booʃí	*booʃ-én*	ashes (kind of)
	jinjirí	*jinjir-én*	prayer
b)	*ceedí*	*ceed-án*	spoon
	deedí	*deed-án*	Arabic gum
	geení	*geen-án*	louse
	feejí	*feej-án*	sheep
	yeerí	*yeer-án*	vomiting

For di- or tri-syllabic nouns stress does normally not change as illustrated above and in the list below.

(70) Plurals without stress shift

singular	plural	gloss
tugúdu	*tugúd-en*	tree/wood
báaɣa	*báaɣ-en*	love/preference
gánda	*gánd-en*	earth/ground
almán	*almán-en*	herd (of animals)

Monosyllabic stems behave differently. Only a small number keep the stress on the stem (b) (marked with ˆ over the vowel) whereas the majority shift stress on the plural morpheme (and any long vowel in the stem is realized). See illustrations under (a).

(71) Monosyllabic stems

	singular	plural	gloss
a)	*cáw*	*caaw-én*	call
	mún	*muun-én*	pouring
	héw	*heew-án*	wind
b)	*mân*	*máan-en*	name
	gôn	*góon-en*	swallow
	bêr	*béer-an*	older sibling
	fûn	*fúun-en*	hole

Some noun stems with a velar stop as their last consonant undergo phonological changes (see a) below). These changes are not predictable since some stems do not change, as illustrated under (b) below:

(72) Palatalization of g/k *preceding plural suffix*

	singular	plural	gloss
a)	*hangá*	*hanj-én*	ear
	bangú	*banj-én*	well
	angú	*anj-én*	place
	farká	*farc-én*	donkey
b)	*hinká*	*hink-én*	two

singular	plural	gloss
gungú	*gung-én*	belly

This class is exclusively of Songhay stock but does not cover all Songhay cognates found in Tadaksahak.

There exist a few items that take a /-yVn/ plural morpheme. In all cases a /w/ precedes the plural morpheme. The noun 'jinn' is of uncertain origin whereas 'cow' and 'bowl' have Songhay cognates.

(73) *Rare plural with* -yen/-yan

singular	plural	gloss
bəkáw	*bəkáw-yan*	jinn
hawú	*haw-yén*	cow
tú	*tuw-yén*	large wooden bowl

3.2.3.1.2 Class 2: -tan

Many vowel-final nouns take this suffix as well as nouns borrowed from languages other than Tamasheq or Arabic.

Under (a) we illustrate vowel final stems of local origin. Many nouns ending in /o/ use this pattern. (b) gives some items of other languages, ending in both consonants and vowels using this same morpheme.

(74) *Vowel final nouns:*

	singular	plural	gloss
a)	*állo*	*állo-tan*	food for a journey
	áaṣi	*áaṣi-tan*	side of the belly
	íiba	*íiba-tan*	loss
	bukturú	*bukturú-tan*	toad
	heebú	*heebúu-tan*	market
	biŋgí	*biŋgíi-tan*	male donkey (KS *biŋji*)
	bána	*bána-tan*	salary (KS *bana* 'pay')
	booráy	*booráy-tan*	giraffe (KS: *bura*)
b)	*kássaw*	*kássaw-tan*	prison (< French *cachot*)

bídaw	*bídaw-tan*	canister (< French *bidon*)
fátaw	*fátaw-tan ~ fát-an*	manufactured recipient (< English *pot*)
fatílla	*fatílla-tan*	flashlight (KCH *fitila* < Arabic *fatiila* 'wick')
aragó	*aragóo-tan*	radio (< French *radio*)
bitígi	*bitigíi-tan*	shop (< French *boutique*)

When speakers are not sure about a plural for a certain noun they often offer *-tan*, which seems to be the strategy that is allowed and understood even if it is not necessarily the 'correct' one.

3.2.3.1.3 Class 3: id-

This class mostly consists of loans from Arabic. These nouns are also present in Tamasheq, but form their plural in a different way, e.g. Tamasheq: /ålwăli/ 'saint' pl: /ălwåli-tăn/ as compared to Tadaksahak *alwalí* pl: *id-álwali* .

All examples consist of nouns taken over with the Arabic article. The examples under (a) show forms where the article is not assimilated, while the forms under (b) have the regular Arabic assimilation of *al-* to following coronal consonants.

(75) Plurals of Arabic loans

	singular	plural	gloss
a)	*alwalí*	*id-álwali*	saint (< Arabic)
	aḷbáaṛuḍ	*id-aḷbáaṛuḍ*	gun (kind of) (< Arabic)
	alkáda	*id-álkada*	bowl for milk (kind of) (< Arabic: *qadaħ*)
	álham	*id-álham*	rage (< Arabic)
b)	*attahalíl*	*id-attahalíl*	leather sheath around book (< Arabic)
	assóq	*id-assóq*	market (< Arabic)
	assáħ	*id-assáħ*	strength (< Arabic)
	annabí	*id-ánnabi*	prophet (< Arabic)
	aʃʃák	*id-áʃʃak*	doubt (< Arabic)

singular	plural	gloss
attaʃám	*id-áttaʃam*	staple food (cereal) (< Arabic)
assúwak	*id-ássuwak*	teeth cleaner (< Arabic)
Aʃʃaríf	*Id-áʃʃarif*	clan name (< Arabic)

For many of the examples above the addition of the prefix leads to a stress shift to the left. When a shift occurs, stress falls on the first syllable of the noun after the prefix.

Some exceptions are found in our corpus where this pattern does not hold. The noun *adikták / id-idíktab* 'booklet' changes the initial /a/ to /i/ after the prefix *id-*. Some more Arabic nouns ending in a vowel add the *-tan* suffix of class 2 to the normal prefix, e.g. *alfáqi / id-alfáqi-tan* 'religious teacher'. The term for '(tea) glass' has changed category and forms the plural like a Tamasheq cognate, i.e. *á-lkas / í-lkas-an*.

Some informants give different forms from those on the list, e.g. instead of *id-álkada* 'milk bowls' and *id-assáɦ* 'strength pl.' they use *id-alkáda-tan* and *id-ássaɦ-en* 'strength pl'. This may be an indication that some of these infrequently used plurals are not rigidly established.

3.2.3.1.4 Class 4: -an

In a small number of Tamasheq cognates the first part of the noun resembles the nominal prefix, but pluralization either does not affect the vowel quality, or affects it in an irregular way. Therefore, we consider these nouns to be prefixless in Tadaksahak (whatever their status in Tamasheq). This class is supplemented by a small number of nouns which do not have the shape of a prefixed noun at all. They divide into smaller subclasses that behave in different ways. One class adds the regular suffix for Tamasheq cognates *-an* to the unchanged stem. These nouns may be consonant- or vowel-initial. Under (a) on the list below consonant-initial nouns are given and (b) vowel-initial nouns.

(76) Tamasheq cognates without prefix

	singular	plural	gloss
a)	*téɣsa*	*táɣs-an*	sheep/goat

	singular	plural	gloss
	fáḍaṇ	*fáḍaṇ-an*	other
	sáwsut	*sáwsut-an*	mat (kind of)
	tíidi	*tíid-an*	sweat
b)	*áafol*	*áafol-an*	edge
	áarab	*áarab-an*	Arab
	éekat	*éekat-an*	measure
	áwrəʒ	*áwrəʒ-an*	heel

A few vowel initial disyllabic stems re-syllabify and then add the plural suffix. The syllable after the initial long vowel is collapsed and forms two syllables with the shortened initial vowel and the plural suffix, e.g. V:-C_1VC_2 becomes V-C_1C_2-an. The examples are below.

(77) Plurals with re-syllabification

singular	plural	gloss
éelaw	*élw-an*	elephant
éeṛəṣ	*éṛṣ-an*	depression (ground)
íiləs	*íls-an*	tong
íidəm	*ídm-an*	supplication

The term *éelaɣ* ‘kind of bone’ does not shorten the initial /e/ when resyllabified *éelɣ-an.*

One noun of this pattern takes the suffix *-in* instead of regular *-an*: *óoruf / órf-in* ‘tree, sp.’.

3.2.3.2 Type 2 noun plurals

Nouns of this type have a prefix that marks them for singular. This is mostly *a-* and in some cases *e-* or *u-*. The prefix is replaced by a plural prefix *i-* in all cases.

The following overview shows some of the possibilities for forming plurals for this type of noun. Combinations of the different formations are also possible and some commonly used nouns allow for two different plural forms.

(78) Type 2 nouns: Plural morphemes

prefix	stem	suffix
i-		*-an / -en / -ən / -in*
i-		*-tan*
i-	apophony	*(-an)*
i-	resyllabification	*(-an)*
t-ə-		*-in / -an*

The morphemes between brackets indicate that the majority of the nouns do not take this morpheme but that a smaller number of nouns take the suffix in addition to the other plural marking features.

In the paragraphs below the different patterns will be illustrated and discussed.

3.2.3.2.1 Plural pattern /i-STEM-an/

The pattern /i-STEM-an/ is the most frequent plural pattern. The suffix shows different vowel qualities. The preceding vowels in the stem give some indications of which suffix to use but there are many exceptions to this. When the stem vowel is non-high vowels (/o/, /e/ and /a/), the suffix tends to have a low vowel. This is illustrated under (a) below. In addition, stems with a consonant cluster preceding the plural morpheme take /-an/. See illustrations under (b). The suffix has schwa when it is preceded by a high vowel (/i/, /u/, /ə/) in an open syllable. See examples under (c).

(79) Plural scheme /i-...-an/ and variants

	singular	plural	gloss
a)	*a-náftaɣ*	*i-náftaɣ-an*	visitor
	á-mɣar	*í-mɣar-an*	old man
	á-ɣlal	*í-ɣlal-an*	trough
	a-báydog	*i-báydog-an*	thief
	a-bóobaz	*i-bóobaz-an*	cross-cousin
	a-fáẓaẓa	*i-fáẓaẓ-an*	honey badger
	á-ɣalla	*í-ɣall-an*	court wall

	singular	plural	gloss
	a-ʃíggel	*i-ʃíggeel-an*	lost animal
	a-bə́kkel	*i-bə́kkeel-an*	skinny animal
	a-lánjez	*i-lánjez-an*	drum (kind of)
b)	*á-triʃ*	*í-tərʃ-an ~ í-triʃ-en*	wound
	a-maɣálʃa	*i-maɣálʃ-an*	jaw (bone)
	a-ɣáʃinʃa	*i-ɣíʃinʃ-an*	bone (kind of)
		i-ʒíbʒ-an	gift given at the naming ceremony
c)	*a-náɣfil*	*i-náɣfil-ən*	clove
	a-ɣéeɣər	*i-ɣéeɣər-ən*	meat (kind of)
		í-ɣməm-ən	milk (kind of)
		i-góriʒ-ən	black solution

Only very few items take the variant /-en/ and /-in/ of the suffix. When the suffix is preceded by a high vowel (/i/, /u/) in an open syllable and the last consonant is a sibilant, most often /-en/ is used (but consider the last example above). This is illustrated under (a) below; (b) provides an item with the /-in/ plural ending.

(80) Plurals with /i-…-en/ and /i-…-in/

	singular	plural	gloss
a)	*ú-gmuʒ*	*í-gmuʒ-en*	thumb
	á-triʒ	*í-triʒ-en*	hail
	á-triʃ	*í-triʃ-en ~ í-tərʃ-an*	wound
		í-zr-en	endurance
		i-sk-én	comb
b)	*a-rgán*	*i-rgáan-in*	camel (kind of)

3.2.3.2.2 Plural pattern /i-STEM-tan/

This minor plural pattern is found with nouns ending in a vowel. Not all nouns ending in a vowel take this suffix.

(81) Plural scheme /i-...-tan/

singular	plural	gloss
a-bútu	*i-bútu-tan*	navel
A-dóogiri	*I-dogíri-tan*	clan name
a-balibáali	*i-balibáali-tan*	sheep breed (kind of)
á-gaŋgo	*i-gáŋgo-tan*	croup
á-ɣaba	*i-ɣába-tan*	bit (horse)
áa-la	*íi-la-tan*	(tea) leaf

3.2.3.2.3 Plural patterns with apophony

Several patterns of apophony are found in Tadaksahak. The vowel pattern of the noun in the singular does not seem to be important. Different vowel combinations of the noun in the singular can turn into a same plural pattern.

3.2.3.2.3.1 Plural pattern i-CuC(C)aC

This plural pattern is found with the structure a-CVC(C)VC. While there are many possible vocalizations in the singular, the plural always has the same pattern.

(82) Plural pattern i-CuC(C)aC

singular	plural	gloss
a-rázum	*i-rúzam*	bag for cereal
a-wátay	*i-wútay*	year
a-sáabəl	*i-súubal*	seam
a-ɣáanib	*i-ɣúunab*	pen
a-máagor	*i-múugar*	camel (kind of)
a-ɣéetas	*i-ɣúutas*	branch (kind of)
a-húllum	*i-húllam*	rope (kind of)
a-húrhur	*i-húrhar*	hair stripe (kind of)

Stress and long vowels do not change with apophony.

3.2.3.2.3.2 Plural pattern i-CəC(C)aC

This plural pattern is found with the nouns of the shape a-CVC(C)VC. Most singulars have /o/ in the last syllable. This is illustrated under (a). Also nouns with homophonous vowels in the singular are found in this group. The examples are under (b). The last example (c) on the list shows that the above described singular patterns are not the only vowel patterns that can take this plural scheme.

(83) Plural pattern i-CəC(C)aC

	singular	plural	gloss
a)	*a-bákot*	*i-bə́kat*	old tent skin
	a-maḍoṇ	*i-mə́ḍaṇ*	pasture
	a-bátol	*i-bə́tal*	shrub formation
	a-zábzod	*i-zə́bzad*	eyebrow
	a-báryom	*i-bə́ryam*	kid (kind of)
b)	*a-səggən*	*i-səggan*	place of rest
	a-bə́lbəl	*i-bə́lbal*	bowl (kind of)
	a-ḷúkkuḍ	*i-ḷə́kkaḍ*	whip
	a-sútfur	*i-sə́tfar*	blanket (kind of)
c)	*a-fándis*	*i-fə́ndas*	half-brother

Schwa may undergo assimilations. The following examples show that the same i-CəC(C)aC plural pattern can be realized with an /i/ in the place of /ə/ when the preceding consonant is palatal. The examples are under (a). If the consonant following /ə/ is /ɣ/ then it is realized as /a/.

(84) Variant of plural pattern i-CəC(C)aC

	singular	plural	gloss
a)	*a-cílcil*	*i-cílcal*	marrow
	a-ʃábḍoṛ	*i-ʃíbḍaṛ*	sacrifice
b)	*a-sáɣon*	*i-sáɣan*	rope (kind of)
	a-ʒáɣol	*i-ʒáɣal*	castrated ram
	á-maɣo	*í-maɣa*	rope (kind of)

3.2.3.2.3.3 Plural pattern i-CaC(C)an

This plural pattern is not frequent. Singular stems containing non-low vowels can take this pattern. The examples are under (a). The examples under (b) illustrate how the apophony influences the realization of the consonants in the stem.

(85) Plural pattern i-CaC(C)an

	singular	plural	gloss
a)	*a-lílli*	*i-láll-an*	noble person
	a-dími	*i-dám-an*	gazelle, sp.
	áa-guz	*í-gaz-an*	sinew (kind of)
	a-ɣéɣi	*i-ɣáɣ-an*	crevice
	a-kóko	*i-kák-an*	tree, sp.
b)	*a-jíji*	*í-gag-an*	luggage
	a-bíji	*í-bag-an*	hyena

Another group of nouns exposes this same pattern with different vowels in the singular stem. Some of them expose non-low vowels in the stem which would classify them in the list above. However, they all systematically geminate the final consonant of the stem and some expose low vowels in the stem.

(86) Duplication of stem final C

singular	plural	gloss
áa-har	*í-harr-an*	lion
áa-gur	*í-garr-an*	castrated animal
áa-ʒəʒ	*í-ʒaʒʒ-an*	vulture, sp.
áa-fiṛ	*í-faṛṛ-aṇ*	extend
áa-jit	*í-jatt-an*	plate of salt
áa-dəf	*í-daff-an*	bone (kind of)
ée-ɣar	*í-ɣarr-an*	cooking pot
ée-ʒaṛ	*í-ʒaṛṛ-an*	shoulder
ée-jaf	*í-jaff-an*	dune

3.2.3.2.4 Plural pattern with resyllabification and /-an/

This pattern involves stems with two syllables. The vowel of the first syllable is neutralized to schwa and the second syllable is collapsed to form a new syllable with the suffix, e.g. a-$C_1VC_2VC_3$ becomes i-C_1əC_2C_3-an. See illustrations under (a) below. Very few nouns with the a-CCVC singular pattern also resyllabify to the above pattern. The examples are under (b).

(87) Resyllabification and /-an/

	singular	plural	gloss
a)	*a-kábar*	*í-kəbr-an*	milk receptacle
	a-líkaf	*í-ləkf-an*	horse saddle
	a-lákat	*í-ləkt-an*	branch (kind of)
	a-lámis	*í-ləms-an*	(guinea fowl) chick
	a-mález	*í-məlz-an*	milk (kind of)
b)	*á-krəm*	*í-kərm-an*	dry piece of Arabic gum
	á-ɣrəm	*í-ɣərm-an*	town/village

3.2.3.2.5 Minor plural patterns

The following plural patterns described do not involve more than a handful of items.

3.2.3.2.5.1 Stems with final /w/ and /y/

In type 1 and type 2 nouns there are stems with final /w/ and /y/ that display different behavior. Many nouns lose the final C and the vowel of the suffix is changed. In the case of /w/ the suffix contains /a/ also for Songhay cognates and with /y/ many suffixes are /-en/ instead of the expected /-an/ for Tamasheq cognates.

The list below illustrates di-syllabic nouns with final /w/. Words under (a) are Tamasheq cognates and those under (b) are Songhay cognates. The nouns under (a) lose the final consonant of the stem but the /-an/ suffix is the default for Tamasheq cognates. ‘bird’ is the item that exposes special behavior since this word should have the /-en/ suffix for plural. ‘speech’ has /ee/ in the stem and therefore must take /-an/ even as a Songhay cognate.

(88) *Stems dropping -w#*

	singular	plural	gloss
a)	*a-máaṛaw*	*i-máaṛ-an*	relative (family)
	a-báktaw	*i-bákt-an*	old cushion
	a-ʃígnaw	*i-ʃígn-an*	thread (sew)
	ée-caw	*í-cc-an*	root
	áfraw	*áfr-an ~ í-fr-an*	feather; wing
b)	*cíidaw*	*cíid-an*	bird
	léelaw	*léel-an*	speech

Monosyllabic Songhay cognates do not lose the final /w/, i.e. 'insult' *wâw / wáaw-en* 'female camel' *yáw / yaaw-én*.

/y/ final nouns show more variety in behavior than the /w/ final nouns described above. For Songhay cognates the suffix /-en/ is expected. This is illustrated under (a) below. But there are Tamasheq cognates that also take this suffix as shown under (b).

(89) *Stems dropping -y#*

	singular	plural	gloss
a)	*cáy*	*c-én*	leg; foot
	ṭaabáy	*ṭaab-én*	turban (general)
	caráy	*car-én*	friend
	ízzay	*ízz-en*	offspring; young animal; fruit
b)	*a-fártay*	*i-fárt-en*	mat (kind of)
	a-kárʃay	*i-kárʃ-en*	head scarf
	a-ẓə́mmay	*i-ẓə́mm-en*	leather stripe

A possible explanation for the Tamasheq cognates is that the final /y/ amalgamates with the suffix and raises the low vowel /a/ to /e/. Consider also the examples under 3.2.3.2.1 that take this plural suffix.

Two Songhay high frequency items, *kóy* 'owner, master' and *surgóy* 'woman', also drop their final /y/ in the plural but the vowel of the stem

is preserved. This leads to the plural forms *kó-n* and *surgó-n* respectively.

Final /y/ is not dropped in all cases. Monosyllabic type 1 nouns do not drop it and some type 2 nouns use other strategies for plurals than the above described behavior.

(90) Monosyllabic Songhay cognates with final /y/

singular	plural	gloss
záy	*zayén*	swear (n)
wáy	*waayén*	woman

One item behaves like above Songhay cognates and adds a plural with /-en/ despite being of Tamasheq origin: *áaṇay / áaṇay-en* 'disgust'.

The following list gives examples of /y/-final Type 2 nouns that use different strategies than described above. The example under (a) takes the expected /-an/ suffix, but with gemination of the final /y/. (b) illustrates resyllabification with final /y/ and (c) apophony.

(91) Other strategies with /y/ final nouns

	singular	plural	gloss
a)	*áa-way*	*í-wayy-an*	young (goat and sheep)
b)	*a-múgay*	*i-múgy-en*	camel (kind of)
	a-táɣay	*i-táɣy-en*	bald head
c)	*a-ḍéḷay*	*i-ḍéḷay ~ i-ḍéḷ-en*	lip
	a-wátay	*i-wútay*	year

3.2.3.3 Nouns with the prefix t(a)-

All the strategies described for the Type 2 nouns can be found with nouns with the feminine prefix *t(a)-*. The plural prefix *i-* for plurals is only realized as /i/ when the high consonants /y/ or /j/ follow immediately, e.g. *t-á-yhas-t / t-í-yhas* 'kind of saddle' or *t-ée-jaf-t / t-í-jaff-an* 'small dune'. Normally it is pronounced schwa.

The examples above show that the suffix *-t* of these nouns is always absent when the plural suffix is present. We can therefore expect that final /w/ and /y/ behave as in nouns without the suffix.

From Tamasheq it could be expected that the suffix would be *-en* for all these feminine nouns. In fact, some nouns have this suffix, but there are many that take the *-an* suffix. Resyllabification and apophony are observed and some of the minor patterns, too. In short, the whole array of possibilities for Type 2 nouns occurs.

The illustrations below show under (a) nouns with plural suffix *-in*. (b) has resyllabification of the last syllable and a stress shift together with the *-in* suffix. (c) shows nouns taking the regular *-an* suffix and one item with *-ən*. (d) shows two different kinds of apophony /i-u-a/ and /i-ə-a/. (e) lists /w/ final nouns that drop the consonant and nouns under (f) drop the final /y/ and realize an *-en* suffix.

(92) *Nouns with the feminine marker*

	singular	plural	gloss
a)	*t-a-boɣán-t*	*t-ə-boɣáan-in*	old sheep
	t-a-gándar-t	*t-ə-gándar-in*	hole (kind of)
	t-á-ḍḷəm-t	*t-á́-ḍḷəm-in*	wrong accusation
b)	*t-a-bákar-t*	*t-á́-bəkr-in*	ewe
	t-a-dáɣan-t	*t-á́-dəɣn-in*	stomach, sp.
	t-a-dáber-t	*t-á́-dəbr-in*	pigeon
	t-á-far-t	*t-á́-fr-in*	rope (kind of)
c)	*t-a-bóobas-t*	*t-ə-bóobaz-an*	cross cousin
	t-a-húlel-t	*t-ə-húlal-an*	female foal of donkey
	t-a-mandáras-t	*t-a-mandáras-an*	root, sp.
	t-á-blel-t	*t-á́-blal-an*	grain; pearl
	t-a-ból-t	*t-ə-búul-an*	small heap
	t-á-lliʃit-t	*t-álliʃid-ən*	cushion
d)	*t-a-káafəṛ-t*	*t-ə-kúufaṛ*	European/Western woman
	t-a-búuɣer-t	*t-ə-búuɣar*	female camel

	singular	plural	gloss
	t-a-déekəlt	*t-ə-dúukal*	underside of hoof
	t-a-ɣádit-t	*t-ə-ɣə́dad*	female kid
	t-á-ddabi-t	*t-ə́-ddəba*	night (kind of)
	t-a-mázdoq-q	*t-ə-məzdaɣ*	homestead
	t-a-báykor-t	*t-ə-bíykar*	bitch
e)	*t-a-bálaw-t*	*t-ə-báll-an*	snail shell
	t-a-dícaw-t	*t-ə-dícc-an*	tent pole (kind of)
	t-á-draw-t	*t-ə́-dr-an*	skin fold
f)	*t-a-móɣsay-t*	*t-ə-móɣs-en*	carcass
	t-a-róday-t	*t-ə-ród-en*	fruit, sp.
	t-á-ẓay-t	*t-á-ẓẓ-en*	shrub, sp.

3.2.3.3.1 Some special plurals

There are many nouns that do not fit into the above slots without additional rules. Below are some particularly odd cases that we wish to present.

Some of these plurals invert consonants (a). Some nouns add a suffix /-wan/ (b). In some plurals consonants surface that are absent in the singular and vice versa (c). The items under (d) add a plural suffix with an intervening /w/ sound. (e) gives an item with the feminine prefix, apophony and *-wan* suffix, (f) shows a high frequency item with an irregular consonant pattern.

(93) Odd plurals

	singular	plural	gloss
a)	*a-láweg*	*í-ləgw-an*	branch (kind of)
	a-bájez	*í-bəzg-an*	pot (kind of)
	a-rádaɣ	*i-rɣáad-in ~ í-rəɣd-in*	old goat
b)	*áa-ḍaḍ*	*í-ḍəḍ-wan*	finger
	áa-zar ~ á-zru	*í-zər-wan*	sinew

	singular	plural	gloss
c)	*t-áa-qas-t*	*t-á-wəɣs-in*	game (animal)
	a-ḍágaḷ	*i-ḍúuḷ-in*	father-in-law / in-law family
d)	*t-áa-ɣəssa*	*t-á-ɣəs-w-in*	body
	t-á-ssaga	*t-á-ssəg-w-in*	side
e)	*t-á-kooba*	*t-á-kab-wan*	sword
f)	*t-á-ŋgud*	*t-á-mgad-ən*	girl

3.2.3.3.2 Plurals without singular

A number of nouns are only found in the plural form. Semantically this includes items that appear as pairs (e.g. glasses) or designate a number of items that belong together (e.g. gifts for certain occasions), but also many natural liquids.

Find examples on the list below. (a) shows pairs, (b) other items and (c) natural liquids with Songhay cognates. Note that 'milk', *huuwá*, is not a plural despite being a liquid. (d) are liquids with Tamasheq cognates.

(94) Pairs and other plurals

	plural	gloss
a)	*í-dmar-an*	chest
	i-fútu-tan	palms of hand
	ṭúurat-an	lungs
	t-ə-máswad-an	(sun) glasses
	í-gag-an	load (on animal)
b)	*i-kád-an*	fireplace (three stones)
	í-maʃw-an	moustache
	t-ə-bə́ddar	gift (after journey)
	i-ʒíbʒ-an	gift (name giving ceremony)
	í-gayd-an	luggage end in tent
	i-ʒínn-an	heaven

	plural	gloss
	i-ʒiləflaf	cloud (kind of)
	t-ə-kúf-an	foam
	nuun-én	vapor, smoke
c)	*ary-én*	water
	kud-én	blood
	haŋgar-én	urine
d)	*áznaɣ-an*	amniotic fluid
	árnan-an	(snake)venom
	i-máṭw-an	saliva
	i-máḍḍ-an	tears
	i-wínʒir-an	blood from nose
	i-ʃínʃar	nasal mucus

3.2.3.3.3 Double plurals

Two items are found that allow for a double plural.

The plural of *taɣmú* ‘sandal, shoe’ is interpreted as ‘a pair of …’ and several pairs can be marked by adding a second plural on the pluralized noun which is *taɣm-én-en* ‘pairs of sandals’.

The item ‘person’ with the plural ‘people’ does not form a pair but people can be found in groups. The double plural is used to designate groups of people randomly scattered over an area. *borá* ‘person/somebody’ *bor-én* ‘people’ *bor-én-en* ‘groups of people’.

3.2.4 Nominalization

3.2.4.1 Verbal nouns

There are different strategies to derive nouns from verbs. Songhay and Tamasheq cognates do not behave the same way.

3.2.4.1.1 Zero morphology: Songhay cognates

Songhay cognates have no morphological distinction between verbs and verbal nouns. When functioning as a verbal noun, these stems

can take a plural morpheme and take positions in the sentence where nouns occur. Examples:

(95) *Songhay cognates with zero-derivation*

stem	verb	verbal noun	Songhay (KCH)
wâw	to insult	insult (n)	/wow/ 'to insult'
mún	to pour	pouring	/mun/ 'to pour'
dudú	to pour	pouring	/doori/ 'to pour' KS
kúḍ	to pasture animals	pasturing	/kur/ 'to herd animals'
horrá	to be bitter	bitterness	/hottu/ 'to be bitter'
gaŋgá	to prevent from	prevention	/gaŋga/ 'to prevent from'

There are a few roots of Tamasheq and other origins with the same behavior.

(96) *Non-Songhay cognates with zero derivation*

stem	verb	verbal noun	Tamasheq
lúku	to be dirty (water)	dirtyness (water)	/ələk/ 'fill with tannin'
léŋkəm	to sit behind s.b.	following (n)	/lănkăm/ 'to sit behind s.b.'
máṇṇa	to be without grazing	red earth	/ṃănnu/ 'to be deserted'
yilká	to disdain	disdain (n)	/alku/ 'to disdain'
fássar	to interpret (Koran)	interpretation	/făssăr/ 'to explain (text)' < Arabic
soñor	to eat during the night (Ramadan)	night meal	< Arabic
dabés	to increase	increase (n)	

bə́ləq	to be dusty	dustiness

In addition some verbs with a causative morpheme take zero morphology as nouns.

(97) Causatives with zero-derivation in the verbal noun

stem	verb	verbal noun	Tamasheq
z-əzəl	to drive	driving (n)	/azəl/ ‘to run’
ʃ-íḍəṇ	to count	counting	/ʃiḍən/ ‘to count’
s-ədwá	to make return	returning in afternoon	/adwu/ ‘to return in afternoon’
s-áṛəṣ	to humiliate	humiliation	/sərəṣ/ ‘to cause to go down’
ʃ-ídu	to assemble	assembling (n)	/ʃidəw/ ‘to assemble’
s-əknə́	to show	showing	/səkna/ ‘to show’

All the examples above lack the nominalizer prefix that would normally be present with Tamasheq cognates.

3.2.4.1.2 Verbal nouns of Tamasheq cognates

Verbs of Tamasheq origin use different strategies for nominalization. The strategies described below concern mostly abstract nouns or verbal nouns that could be paraphrased with ‘the doing of X’ or ‘the being of X quality’ where X stands for the semantics of the verb.

Verbs with three or more syllables prefix an *a-* for nominalization and change the stress pattern. Nouns have the stress on the penultimate syllable whereas the verbs have the ante-penultimate syllable stressed. Under (a) transitive and under (b) intransitive verbs are given. A long consonant in the verb stem is not long in the noun.

(98) a- *nominal prefix and stress shift*

	verb	noun	gloss
a)	*kaṭámkaṭam*	*a-kaṭamkáṭam*	to cut into pieces
	ʃí-ʃʃigəl	*a-ʃi-ʃíggəl*	to look for (animal)
	z-úmmumur	*a-z-umúmur*	to creep

	verb	noun	gloss
	z-ə́lləzləz	*a-z-ələ́zləz*	to shake (tree)
b)	*hə́ləklək*	*a-hələ́klək*	to pant
	hə́ṇəṣṇəṣ	*a-həṇə́ṣṇəṣ*	to whine (child)
	ẓə́bəḷbəḷ	*a-ẓəbə́ḷbəḷ*	to cry (camel)
	nə-gə́rtətəf	*a-nə-gərtə́təf*	to stumble

y-initial verbs with three following consonants lose the initial *yi-* syllable which is replaced by the nominal *a-* prefix and insert /a/ between all the consonants. The illustrations are under (a). y-initial verbs with two consonants take a long stressed *ee-* prefix and insert an /a/ between the two consonants. Examples are under (b) below.

(99) y-initial verb: CCC and CC

	verb	noun	gloss
a)	*yídran*	*a-dáran*	to return quickly
	yíɣʃid	*a-ɣáʃad*	to be out of order
	yífṭəl	*a-fáṭal*	to bother s.b.
b)	*yíʃəf*	*ée-ʃaf*	to swim
	yíẓəḍ	*ée-ẓaḍ*	to crush into powder
	yínəz	*ée-naz*	to bend

/-ət/-final verbs take the nominal prefix /a-/ and drop the last syllable which is replaced by /u/. This last open syllable does not count for the stress distribution.

(100) /-ət/-final verbs

verb	noun	gloss
ʒ-ílliʒ-it	*a-ʒ-ílliʒ-u*	to clean (kind of)
búbbug-ut	*a-búbbug-u*	to burn off (hair/feather)
də́lənf-ət	*a-də́lənf-u*	to be gooey
fə́lcəq-ət	*a-fə́lcəq-u*	to be flat

Another strategy for nominalization is presented below (3.2.4.3). The feminine prefix is the nominalizer in these cases.

3.2.4.2 Actor nominalization

Tadaksahak uses a prefix for actor nominalization. The default prefix is *ma-* with an allomorph *na-* for stems that contain a labial consonant (/b/, /f/ or /m/). In addition to the prefix many stems change the vowels into /a/ sounds.

Semantically the “actors” can be human, animate (animals) or an item that acts on humans.

Descriptive verb stems with the prefix designate beings with the characteristics of the verb. When action verbs are prefixed with this morpheme, the resulting expression designates a person that does the action or animate being that undergoes the action.

In the list below the first two items under (a) do not change the vowel of the verbal stem. (b) illustrates the change of the vowels to /a/ with the dropping of the final /-ət/. (c) gives an example with re-syllabification. (d) shows the pattern for yiCCvC stems. (e) illustrates yiCvC stems. Roots with only two consonants tend to have a long vowel in the stressed syllable. Finally (f) shows one of the few verbs of Tamasheq origin that have a long vowel.

(101) Actor nominalization with /ma-/

	verb	noun	gloss verb	gloss noun
a)	*z-ə́rgəz*	*a-ma-zə́rgəz*	to court	man courting women
	hə́gəg	*a-ma-hə́gəg*	to go on pilgrimage	pilgrim
	zə́zaydər	*a-ma-zazáydar*	to be patient	patient person
b)	*gə́ṛḍ-əṭ*	*a-má-gaṛḍ-a*	to guard (house)	guard
	wə́l-ət	*a-má-wal-a*	to be gourmet	gourmet
c)	*zə́rəg*	*a-má-zrag*	to go to well	person going to well
d)	*yíɣdər*	*a-má-ɣdar*	to betray	traitor
	yíŋgəḍ	*a-má-ŋgaḍ*	to be turbaned	newly turbaned youth

	verb	noun	gloss verb	gloss noun
	yínṣi	*a-má-nṣay*	to beg	beggar
	yíldəd	*a-má-ldad*	to milk into mouth	milk thief
	yíxləḳ	*a-má-xlaḳ*	to be created	Creator
e)	*yíḍəṇ*	*a-máa-ḍaṇ*	to graze	shepherd
	yaṇáṇ	*a-máa-ṇəṇ*	to be trained (camel)	trained camel
f)	*yazúurag*	*a-ma-záarug*	to be free (camel)	liberated camel

In one item one finds actor nominalization with a verb root of Songhay origin. The CVC root is reduplicated and then prefixes the regular actor morpheme: *záy* 'to steal', *a-ma-záyzay* 'thief'. Another possible cognate of Songhay uses the 'long vowel strategy' for actor building: *ḍaṛ* 'to hurt' (cf. KCH /door/ 'hurt') may be the stem from which *a-mée-ḍaṛ* is derived 'a hurting particle (in the eye)'. The /e/ directly after the /m/ is irregular, though, and not found elsewhere in our corpus.

There are several animals on the above list. One more is the general term *a-múu-dər* 'animal, living being' that is derived from *yidár* 'to live'.

In the list below are examples with the same surface features (syllable structure and y-initial) as discussed on the list above, that take the *na-* prefix. These stems all contain a labial consonant.

(102) Actor nominalization with na-

	verb	noun	gloss verb	gloss noun
a)	*bə́ləl*	*a-na-bálal*	to be at ease	who puts at ease
b)	*fíriʃ-it*	*a-na-fáraʃ-a*	to be crazy	crazy person
c)	*gimár*	*a-ná-gmar*	to hunt	hunter
	sə́-mməgəl	*a-na-s-mágal*	to treat (sickness)	healer
d)	*yibdán*	*a-ná-bdan*	to be paralyzed	paralyzed person

	verb	noun	gloss verb	gloss noun
	yíɣtəf	*a-ná-ɣtaf*	to ambush	street robber
	yaxrám	*a-ná-xram*	to refuse	badly trained camel
	yíktəb	*a-ná-ktib*	to write	writer
	yíɣləf	*a-ná-ɣlif*	to be entrusted to	guardian
f)	*máazal*	*a-na-máazal*	to be sent	messenger

Another minor actor strategy is found. It is not nominalizing a verb but prefixes to a noun that designates an item that is the distinguishing feature for the agent. The prefix *aw-* 'person' in singular and *kə́l* 'people' for plural is added to a noun. Examples are: 'merchant' *aw-maamála* (person-commerce) and 'cultivator' *áw-t-a-wágus-t* (person-F-SG-field-F.SG) with the plural *kə́l maamála* and *kə́l t-ə-wúgas* respectively. Semantically a strong indication of 'different social belonging' is conveyed. This strategy is also found in Tamasheq.

3.2.4.3 Nominalization with t-(a-)...-t

Many terms carrying the *t-a-…-t* marker are nouns derived from verbs. Depending on the meaning of the verb stem, the nouns may denote an entity with the characteristics of a descriptive verb, the instrument doing the verb, the result of doing the verb or an abstract noun.

Stative verbs describing qualities such as 'flat, smooth, round' can be changed into a noun which displays these qualities.

(103) Descriptive verbs

verb	noun	gloss verb	gloss noun
fətiyləl	*t-a-fatáylal-t*	be flat	flat plate
búluləɣ	*t-a-bulúuleq-q*	to be round	round thing
ləfəɣət	*t-a-láfaɣat-t*	to pound s.th. soft	pounded meat
kə́rəmbu	*t-a-karámbaw-t*	to be bent	scorpion
qazór	*t-a-qázor-t*	to have a	animal with bent

verb	noun	gloss verb bent back	gloss noun back
ɣaʃáy	*t-á-ɣʃí-t*	to have stripes	striped animal
ʃamlál	*t-a-ʃímlal-t*	to be blond (kind of)	sand colored goat

A productive nominalization is found with colors. The result of the nominalization is the 'fact of being X'. The words listed under (a) have Tamasheq cognates. (b) is a Songhay cognate which takes both nominal forms with productive color nominalization and zero nominalization.

(104) *Color names*

	verb	fact of being	gloss verb
a)	*ɣagál*	*t-a-ɣágal-t*	to be fair colored
	dabár	*t-a-dábar-t*	to be grey
	ʃamlál	*t-a-ʃámlal-t*	to be blond
	cawál	*t-a-cáwal-t*	to be clear
b)	*cíday*	*t-a-cíday-t ~ cíday*	to be red

The following nominalization patterns are not linked to specific semantics; it is rather the shape of the verb root that has some influence on the choice of the nominalization pattern. Abstract nouns as well as very concrete items can result from such nominalizations.

(105) *Other nominalization patterns*

1) CV(:)CVC > ta-CV́:CVC-t

2) $yVC_1C_2VC_3$ > $ta\text{-}C_1V́:C_2VC_3\text{-}t$

Verbs listed under (a) and (b) below illustrate pattern (1) above. (c) and (d) show examples for the second pattern (2). The consonantal output for all of them looks very much the same. The vowel part of the change is much less predictable than the consonants. A pattern of /a/-/ee/-/a/ is quite frequent but other long vowels occur like /oo/ (*tahóorat* 'suitability') or /uu/ (*tasúutəft* 'spit').

(106) Nominalization

	verb	noun	gloss verb	gloss noun
a)	*bə́ləl*	*t-a-báalul-t*	to be at ease	young tree, sp.
	ṣə́ṛəf	*t-a-ṣóoṛef-ṭ*	to pardon	pardon
	sə́təf	*t-a-súutef-t*	to spit	spit
b)	*máazal*	*t-a-máazal-t*	to be sent	purpose
	rúurud	*t-a-ráarat-t*	to be in a hurry	hurrying
c)	*yífṛəṣ*	*t-a-féeṛaṣ-ṭ*	to cut with one stroke	piece of cut material
	yíɣləf	*t-a-ɣáalif-t ~ t-á-ɣlif-t*	to have confidence in	confidence
	yíɣrəs	*t-a-ɣéerəs-t*	to chisel	well cut in rock
	yíḷfəẓ	*t-a-ḷéefaṣ-t*	to be crushed	blister
	yídkəl	*t-a-déekəl-t*	to lift up	hoof (part of)

In addition, all verbs of the rare shape yVhVC are nominalized with this strategy. They add an extra syllable in order to form a word with three syllables. *yáhag / t-a-háag-it* ‘to last / duration’ *yahór / t-a-hóor-at* ‘to be suitable / suitability’. (see also *aa-hát / t-a-hát-at* ‘Zarma person m/f’). The other verbs of the shape y-VCVC use a different strategy for nominalization, i.e. long initial vowel *yíʃəf / ée-ʃaf* ‘to swim / swimming’ (see 3.2.4.1.2).

3.2.4.3.1 Instrument

In a few verb stems, one finds a marker *sV-* which forms an instrument noun.

For these verb stems this marker produces the instrument with which the action of the verb is done. This procedure is not very productive. The examples under (a) show the verb root without the causative that are used as active verbs. (b) shows verbs only attested with the causative that can form the instrument.

(107) Instruments

	verb	noun	gloss verb	gloss noun
a)	*yíɣrəs*	*t-a-sá-ɣris-t*	to chisel	chisel

	verb	noun	gloss verb	gloss noun
	yíɣfəl	*t-a-sə́-ɣfəl-t*	to lock	lock
	yískəl	*t-a-sə́-ksəl-t*	to shovel up	shovel
	yiwál	*t-a-sə́-wəl-t*	to be sharp (knife)	sharpener
b)	*ṣə́-ṣkəṛ*	*t-a-ṣə́-ṣkəṛ-t*	to put on its base	holder for milkbowl
	sə́-sməd	*t-a-sə́-smət-t*	to be pointed	s.th. pointed

Note the inversion of the /s/ with /k/ in the stem of the noun derived from *yískəl*. The verbal form with the causative prefix shows the same behavior *s-éksəl*.

One stem was found that does not take the instrument morpheme but the feminine marker only and results in the instrument: *yísləf* > *t-á-sləf-t* 'to carve > carving ax'. The /s/ in the root is possibly interpreted as the instrument marker.

3.2.5 Compounding

Tadaksahak almost entirely lacks the possibility of noun-noun compounding. This is very different from the situation in Mainstream Songhay, such as Gao Songhay, and resembles the situation in Tamasheq.

The only noun-noun compounds with simple juxtaposition are found with the noun *koy* 'owner, master' and the two lexemes 'camel' and 'sheep'.

(108) 'owner' compounds

á-mṇəs - koy	*i-múṇas - kon*	camel owner(s) camel rider(s)
SG-camel-owner	PL-camel-owner.PL	
féeji - koy	*féeji - kon*	sheep owner
sheep-owner	sheep-owner.PL	

The two words can be used as expressions for 'rich people'. Note that the plural of 'camel owner' has both parts of the compound pluralized whereas the plural of 'sheep owner' only has the 'owner' part marked as plural. A possible explanation could be that, in the latter case, since both terms are Songhay cognates, the compound behaves like

a Songhay noun phrase where only the phrase gets a plural marker, i.e. the last element. This corresponds to ‘owner’ in this example.

The same strategy is found in two clan names

(109) *Clan names*

Abákot-kon old.skin-owner.PL	people belonging to the clan of Abakot
Ag-litáɣmu-kon son.of-name-owner.PL	people belonging to the clan of Ag Litaɣmu

Both terms have irregular singulars without the ‘owner’ element present. They are *a-na-zbákot* (with the agent prefix and an irregular /z/) and *aw-lítaɣmu ~ ag-lítaɣmu* respectively.

A small number of compounds with simple juxtaposition occur that would seem to be noun-adjective/verb compounds. These frozen expressions designate kinship terms and animals. Similar expressions are found in Mainstream Songhay. In Tadaksahak, only one adjective is found in this kind of compound nouns, *beer-í* ‘big’, e.g.

(110) *Noun-adjective compounds*

nana béer-i mother be.big-ADJZR	grandmother (Lit: big mother)
baba béer-i father be.big-ADJZR	grandfather (Lit: big father)

The other forms correspond to actual verbs.

(111) *Noun-verb compounds*

naná ceená mother be.small	maternal aunt (Lit: little mother)
naná fumbú mother be.rotten	step-mother (Lit: rotten mother)
babá fumbú father be.rotten	step-father (Lit: rotten father)
mó ceená eye be.small	jackal (Lit: small eye)

míya kukú	mosquito (Lit: long beak)
mouth be.long	

All these expressions form their plural by adding a plural morpheme only to the last element of the term, e.g., *naná ceen-án* for 'maternal aunts'.

A small number of idioms use the genitive /n/ as link between the two terms. The stress pattern of these expressions is the same as in regular genitival constructions. All terms except 'ox' are Songhay cognates. They form the plural by adding a plural morpheme only to the last element of the expression, e.g., *gánda ɲ car-én* 'snakes' *hé ŋ kun-én* 'sicknesses'. To what extent these idiomatic expressions can be identified as real compounds is open to discussion.

(112) Genitive construction compounds

hé ŋ kuná	sickness
thing GEN find.VN	(Lit: finding of a thing)
keení ŋ guná	dream
sleep GEN see.VN	(Lit: sleep's seeing)
ʒéemi nn áwdəʃ	praying mantis
blacksmith GEN ox	(Lit: ox of the blacksmith)
gánda ɲ caráy	snake, sp.
ground GEN friend	(Lit: friend of the ground)
gánda ŋ karfú	grass snake
ground GEN rope	(Lit: rope of the ground)
tárra nn ízzay	lion
bush GEN son	(Lit: son of the bush)

Some of these expressions are clearly euphemisms for animals that should not be called by their names.

A restricted number of nouns take a preposed element 'bad', which forms a kind of compound word.

The bound element precedes the noun it goes with. Its stress pattern depends on the stress of the following noun. When the noun has stress on the penultimate syllable, *agar* remains unstressed. When it has final stress, the element *agar* is stressed on its second syllable.

agar ‘bad’ doubtlessly has a Berber background, even though it does not seem to exist in Tuareg. The morphosyntactic behavior of Tadaksahak *agar* is remarkably similar to that of /erk/ ‘bad’ in Tamasheq.

(113) Nouns found with agar

agár borá	bad person
agár farká	bad donkey
agar léelaw	slander
agar a-hándag	difficult/dangerous place
agar káykay	morally bad behavior
agar íi-m-an	dizzy spell

agar ‘bad’ does not agree in number or gender with the noun it modifies. This is shown by the last example, *agar íi-m-an* which contains the plural noun *íi-m-an* ‘life, soul’, and by forms such as *agar t-á-mgad-an* ‘bad girls’ with the feminine plural noun *t-á-mgad-an* ‘girls’.

It should be noted that the regular expression for ‘bad’ is by means of the adjective *yibrár+an* ‘be bad+ADJZR’ and the place in the noun phrase is after the noun.

(114) *wá (ə)n=sə-d(a) aɣáy he yibráar-an*
IMP 2S=IMPERF.NEG-do 1s.IO thing be.bad-ADJZR
don’t do me any harm!

3.2.6 Personal pronouns

In the section about the verbal word it was shown that subjects are always referred to in a clitic which appears before the verb stem.

Besides the subject clitics there is a series of pronouns that behave differently from the clitics and behave more like noun phrases from a syntactic point of view. They cannot be possessed but they may be followed by a certain demonstrative construction, by discourse-functional morphemes, and/or by a postposition.

3.2.6.1 Person and number categories

The speaker (1s), the addressee (2s) and the non-participant (3s) form the paradigm in the singular. There is no gender distinction. The

3s pronoun stands for female and male, animate and inanimate referents alike.

The plural has the same three categories 1p, 2p and 3p. There is no distinction between inclusive or exclusive in the first person plural.

3.2.6.2 Forms

The list below gives the different shapes of pronouns in their functions.

What I call 'independent subject' is a pronoun pre-posed to the verbal word which occurs without a focalization morpheme. In this position it is labeled 1s.EMP ('emphatic') in order to show its status outside the inflected verbal word, e.g. *aɣáy aɣa=ggun(a)=á.* (1s.EMP 1s=see=3s) 'I, I saw him.'

The dependent object pronoun form has a clitic in the 3rd person that attaches either to the verb (see 3.1.4.3) or to the postposition (see below 3.2.6.3).

The independent object form shows a difference in the 3rd person where a longer form is found that stands independently and has the same properties as the other pronouns, i.e. it may take modifiers. These pronouns will be glossed with EMP 'emphatic'.

(115) Shapes of personal pronouns

	dependent subject	independent subject	dependent object	independent object
1s	*aɣ(a)=*	*aɣáy*	*aɣáy*	*aɣáy*
2s	*ni=/ən=*	*nín*	*nín*	*nín*
3s	*a=*	*áŋga*	*=a*	*áŋga*
1p	*ar(ə)=*	*áari*	*áari*	*áari*
2p	*andə=*	*ándi*	*ándi*	*ándi*
3p	*i=*	*íŋgi*	*=i*	*íŋgi*

3.2.6.3 Pronouns as postpositional complements

The pronouns listed in the preceding table may be combined with all postpositions (for *n* 'genitive' and *wani / wan-en* 'of', see below) and the preposition *ənda* 'with, and'.

The dependent 3rd person pronouns cliticize to following postpositions. The clitic normally carries the stress which results in a V́:CV word where the initial open syllable is lengthened, e.g. *íi=se* (3p=DAT) 'for them'.

When several pronominalized complements follow each other in a clause, they are separated from each other by a specialized morpheme that is described as the 'pronoun separator' below 3.2.7.11.2.

3.2.6.4 Possessive pronouns

In Mainstream Songhay the regular pronouns also serve as possessors (Heath 1999b:80). This is not the case in Tadaksahak where possessors are marked by means of the subject clitic series together with the genitive morpheme.

In the list below the subject clitics are given in the first row to show the similarity in shape with the possessive pronouns, which are given in the second row. The third row shows that the possessor form ('mine', 'yours') uses the same series of dependent pronouns together with the particle *wani / wan-en*. Note that the same phonological rules are in force as for the clitics preceding an inflected verb, i.e. the first persons use the mono- or disyllabic allomorph depending on the shape of the following element. The 3s clitic has an allomorph *ay=* (pronunciation [ɛj]) when joined with the markers for possession, i.e. *ay=n* 'his/her/its' and *ay=wani* 'his/hers'

(116) Possessive pronouns

	subject clitic	possessive pronoun 1	possessive pronoun 2
1s	*aɣa=/aɣ=*	*aɣá=n*	*aɣ=wáni*
2s	*ni=*	*ní=n*	*ni=wáni*
3s	*a=*	*áy=n*	*ay=wáni*
1p	*arə=/ar=*	*árə=n*	*ar=wáni*
2p	*andə=*	*ándə=n*	*andə=wáni*
3p	*i=*	*í=n*	*i=wáni*

The 1st person pronouns of the series 1 have an alternative form when the following noun has an initial vowel. In such cases the

second vowel in the pronoun is dropped, e.g. *aɣ=n aɣáanib* 'my pencil' or *ar=n iḍúuḷin* 'our in-laws' (see more examples under 2.4.2.4).

3.2.7 Adpositions

Tadaksahak has several postpositions and a few prepositions. The list below presents the translation equivalents and a general indication of the function.

(117) Adpositions

form	gloss	function
se	for	dative
ka	in, on, to, from	locative
be	on, over	locative
daw	at ('chez')	locative
kámba	towards	locative
n	of	possessive
wáni / wán-en	of	character of
ənda	and, with, towards; if	instrumental; comitative; locative; conjoining NPs; conditional
wala	without; or	lack of item; disjunction
íŋzin	like	comparison

For some of these postpositions we can suggest origins:

se: same as in Mainstream Songhay.

ka: The equivalent in Songhay is /ra~la/ and does not help for an origin. But KS has a noun /kuna/ 'interior'. This word is still being used as a locative postposition in KCH (Heath 1999a:354) and in Tasawaq, another Northern Songhay language, e.g. /húgù kúná/ 'in the house' (Kossmann p.c.).

be: has a nominal relative in *béena* ‘top’ that can be used to express ‘on something’ as in *húgu n béena* ‘top of the house’

daw: Songhay of Gao has /doo/ ‘place’ (and a postposition with the same shape) which could be at its origin. A frequent use of the postposition is ‘at X’s place’ (French ‘chez’). It can also mean ‘close to’, ‘next to’ a present physical entity (person, family, house). Tamasheq has a preposition /daw/ ‘under’ that is closer in shape but semantically points in a different direction and seems therefore unlikely to be the origin.

kámba: also means ‘hand, arm’ and so indicates a direction which is the meaning of the postposition.

n: genitive marker with the same form as in Tamasheq but syntactically used in a different way.

wani: is a possessive postposition in Mainstream Songhay. In Tadaksahak the use is somewhat different since it occurs for marked possessor relationships and characteristics.

ənda: is found in Mainstream Songhay where it serves for most of the functions observed in Tadaksahak. An additional feature is its locative use with motion verbs.

wala: this preposition is originally from Arabic but is also used in Tamasheq and Songhay.

íŋʒin: a cognate in Tamasheq is /zun ~ zund/ used the same way.

3.2.7.1 Dative se

This postposition is used for indirect objects, i.e. the addressee with verbs like *ci* ‘say’ and *har* ‘tell (sth.)’, and the beneficiary with verbs like *na* ‘give’ and *ʃ-úuwa* ‘send’.

(118) *a=nn(á) áy=n t-ə-səssira [alfáqi se].*
3s=give 3s=GEN F-PL-key teacher DAT
she gave its (trunk) keys to the teacher.

With pronouns, the dative postposition may be absent (see 3.2.7.11.2.1) It is obligatory with third person pronouns.

(119) *a=nn(a)* *íi=se* *t-ée-laq-q*
3s=give 3p=DAT F-SG-knife-F.SG
s/he gave them a knife.

Certain causative verbs mark the causee with the dative.

(120) *a=ssə́-ss-əŋɣəl-an* *[táwway* *se]*
3s=CAUS-CAUS-pour.BND-ALL servant DAT
báarar *ən* *ʒíibi.*
child GEN dirt
she made the servant remove the child's dirt.

The postposition is pronounced [sa] when followed by an another pronoun beginning with /a/. For a discussion about *n* 'pronoun separator' and further examples, see 3.2.7.11.2.

(121) *a=nn(á)* *[aɣáy sa]* *n* *a*
3s=give 3s DAT SEP 3s
s/he gave it to me.

Second person singular is irregular: Instead of expected **ni=se* , it appears as *ana* 2s.DAT. The form may be related to the irregular form used in Mainstream Songhay where 2s.DAT is /mane ~ mana/. In Tadaksahak most pronouns begin with a vowel and so possibly the initial consonant was dropped.

(122) *aɣa=hár* *ana* *ay=n* *ə́mmək.*
1s=tell 2s.DAT 3s=GEN manner
I told you how s/he/it is.

This pronoun behaves quite differently from the rest of the series. Further treatment of this topic is found in 3.2.7.11.2.1.1.

3.2.7.2 Locative and temporal ka

The basic reading of this locative postposition *ka* LOC is 'in'. It is a purely topological postposition, insensitive to questions of location vs. direction. That is to say, it can be translated both as locative 'in, at, on' and as directional 'into, from', etc. (cf. also Heath 1999b:136).

(123) a) *a=b-gorá* *[húguka]*
3s=IMPERF-sit tent LOC
S/he sits in the tent.

b) *a=b-gor(á)* *[[a-jeráw* *ən* *a-ss-éləm]* *ka]...*
3s=IMPERF-sit SG-river GEN SG-INST-outside LOC
She (fish woman) was sitting at the riverside...

c) *a=f-keení* *[gánda* *ka]*
3s=IMPERF-lay ground LOC
It is laying on the ground.

d) *[aɣá=n* *baaʃí]* *a=yyéd* *[baŋgu* *ká].*
1s=GEN water.bag 3s=return well LOC
My water bag fell in the well.

e) *a=b-nín* *[t-ée-ɣar-t* *ka]*
3s=IMPERF-drink F-SG-pot-F.SG LOC
S/he drinks from/in the pot.

f) *[[man né]* *k(a)]* *aɣa=ttáŋga-kat=i?*
where place LOC 1s=push-VEN=3p
From where did I push them (camels) to here?

The examples below have a temporal as well as a locational incidence of *ka*.

(124) a) *[zaɣri* *aɣo* *ka]* *ni=ssə́-bdəd=i*
day DET LOC 2s=CAUS-stop.BND=3p
[[aɣá=n *mo]* *ka]...*
1s=GEN eye LOC
(on) the day you place them in front of me...

b) *[áŋga* *ka]* *ni=b-mún* *[a=k(a)]* *ary-én...*
3s.EMP LOC 2s=IMPERF-pour 3s=LOC water-PL
then you pour water in it...

In this last example *áŋga* 3s.EMP refers to the whole preceding clause which is of temporal nature: ‘The moment when you finish with the meal in the plate’.

3.2.7.3 Locative be *‘on’*

The postposition *be* means basically ‘on’ but also ‘above’ and in a more abstract way ‘about’. Similar to *ka*, it can be used both in locative and in directional contexts. Expressions like ‘to descend down on’, ‘jump down on’, ‘be on’ use this postposition.

(125) a) *a=hóoɣay* *[áa=be].*
3s=spend.day 3s=on
he spent the day there (at the well).

b) *aɣa=kkáw* *[a=b(e)]* *[ay=n* *í-səlsa].*
1s=take.away 3s=on 3s=GEN PL-clothes
I took his clothes off him. (= from on him)

c) *ni=b-guná* *hó* *f-túw-əṇṇ(a)*
2s=IMPERF-see thing.DET IMPERF-PASS-say.BND
[i-dáksahak *be]?*
PL-ethnic.name on
do you see what is said about the Idaksahak?

This postposition can also be used in a causal sense ‘because of, on account of’ (see 4.8.2.2).

3.2.7.4 Locative daw *‘at somebody’s place’ (chez)*

The postposition *daw* can frequently be rendered by the French word ‘chez’ i.e., ‘at somebody’s place’ but ‘being physically close to’ or ‘next to’ can also be possible. The location is mostly a person or a place where people normally are, e.g. a house.

(126) a) *a=ttén* *[aɣáy daw]*
3s=arrive 1s chez
he arrived at my (place).

b) *a=f-káy* *[[áy=n* *nana]* *daw]*
3s=IMPERF-stand 3s=GEN mother chez
it (child) stands next to his/her mother.

3.2.7.5 Directional kámba *‘towards’*

Another postposition rarely used is directional *kámba* ‘towards’. Example:

(127) *kéed(i)* *[a-gíilal* *kámba]*
mount SG-rear towards
get up towards behind!

See also 3.2.7.8 for a similar meaning of *ənda* ‘towards’.

3.2.7.6 Genitive n

Tadaksahak has a possessor – possessed order. The genitive postposition *n* provides the link between the two nouns. A similar marker is found in Tamasheq, but Tadaksahak has the reverse order of constituents.

(128) *[Mússa n] húgu*
name GEN house
Mussa's house

The form can take an epenthetic schwa when the preceding noun ends with a consonant.

(129) *[báarar ən] hánʃi*
child GEN dog
(the) child's dog

A similar structure is used with pronouns (see 3.2.6.4).

The morpheme assimilates to the place of articulation of a following consonant. The illustrations are in the phonology part (2.4.1.1).

An interesting observation is the fact that speakers usually repeat the genitive particle together with the possessed item when they retake this construction partially, e.g. *Mussa …… ən húgu* 'Mussa, eeem….(hi)s house'.

3.2.7.7 Possessive wáni / wán-en *'of'*

This element, which is the only overt possession marker in Mainstream Songhay, is not very frequent in Tadaksahak. It only rarely marks a true possessive relationship. A more regular use of this form is to express 'character of' or 'of material of'.

The head precedes the modifier and the particle follows the modifier.

(130) *t-a-mə́nkə-t [háamu wáni]*
F-SG-piece-F.SG meat of
piece of meat

This particle agrees in number with the head.

(131) *í-səlsa [úuraɣ wán-en]*
PL-clothe gold of-PL
clothes (made) of gold

Only in conjunction with a pronominal clitic does this particle express 'ownership' as in 'mine' or 'yours', (3.2.6.4) but there is also a use where the whole construction modifying a noun means '(my) kind of' including the notion of 'character'.

3.2.7.8 Preposition ənda *'with', 'in the direction of'*

This element has many different functions. Its syntax together with pronouns merits special attention (3.2.7.11.2.2). Phrases with *ənda* + noun have instrumental or comitative meaning. With transitive verbs the instrumental reading is normal ('he hit it with a hammer.'), with a certain class of (intransitive) verbs the comitative meaning is normal ('he accompanied him'). See more examples in 4.3.6.

(132) a) *a=bb-áʃɣəl* *[ənda* *ṭ-á-ṣṣəḍ]*
3S=IMPERF-work with F-SG-ax
he works with an ax.

b) *a=b-háŋg(a)* *[ənd(a)* *[áy=n* *caráy]]*
3S=IMPERF-accompany with 3S=GEN friend
he accompanies his friend.

One particular use of *ənda* 'and, with' is as a locational expression. Some movement verbs take this preposition to indicate 'close by', 'in the direction of'.

(133) *a=zzúru* *[ənda* *húgu]* *fo…*
3P=run with house IND
he (snake) run close by a house...

The list below gives more verbs that use *ənda* 'in the direction of' to encode a location. The first verb on the list below does not occur without the preposition.

(134) *Verbs with* ənda *'in the direction of'*

verb	gloss	syntax	gloss
		yáray ənda X	be in the direction of
bóy	move camp	*bóy ənda X*	move in the direction of
yíci	pass	*yíci ənda X*	pass in the direction of
yídu	be assembled	*yídu ənda X*	be assembled in the direction of

3.2.7.9 *Preposition* wala *'without'*

wala has many functions in the language (4.8.1.2 'or'; 4.6.4 'not even'). When meaning 'without', it precedes the noun that is negated. The second example below has *wala* in both functions, 'without' and 'or'.

(135) a) *əs-kahar* *aɣa=b-d(á)* *á-ḍrəs* *wala* *haamú...*
maybe-when 1s=IMPERF-make SG-sauce without meat
when I make a sauce without meat...

b) *bora* *jíji-kat* *ay=n* *á-mṇəs* *wala*
person load-VEN 3s=GEN SG-camel without
t-a-xáawi-t *wal(a)* *i-sə́tfar...*
F-SG-saddle.kind-F.SG or PL-cover
somebody who loads his camel without saddle or (without) padding...

There is an idiomatic use of the construction 'without + child/one' to include absolutely all (persons). In the following example also the word *káamil* 'all' is intensified to express 'all included'.

(136) a) *i=yyídu-kat* *kamululáhi* *wala* *báarar*
3=assemble-VEN absolutly.all without child
they were absolutely all assembled.

b) *a=gór* *i-mənóokal-an* *i=f-túwa-s-úku*
3s=must PL-ruler-PL 3p=IMPERF-PASS-CAUS-call.BND
wal(a) *á-ffo.*
without SG-one
all the chiefs without exception had to be summoned.

c) *s(a)* *i=ggár=i* *i=kkós* *wal(a)=á.*
COMP 3p=find=3p 3p=cut without=3s
it was found that they were cut without (exception).

The last example has no noun following *wala*. The meaning is nevertheless the same as the other examples show. The stress on the final syllable of *walá* suggests that some morpheme is added there, probably a 3s clitic.

3.2.7.10 *Preposition* inʒín *'like'*

inʒín behaves like a preposition at times but can also join sentences. Find more examples and discussion under (4.7.4.6).

(137) *inʒín t-a-zooníya-t ən ci?*
like F-SG-bird.sp-F.SG GEN kind
Like a kind of small bird?

3.2.7.11 Pronominalized elements and the verb

3.2.7.11.1 Pronominalized NPs

Subject pronouns precede the verb. Other pronominal elements follow the verb (unless in focus). There are rules for the succession of pronouns after the verb and the presence of the dative postposition.

1) When other pronominalized elements are present, the pronominalized direct object is the last element (as illustrated in (138) below)
2) Most pronouns indicating the indirect (dative) object are marked by the dative postposition *se*. With first person pronouns it is absent when the pronoun is not followed by another pronoun, but present otherwise (see 3.2.7.11.2.1 below)
3) When a locative and a dative pronoun are present, the dative precedes the locative pronoun

3.2.7.11.2 Pronoun separator n

Tadaksahak uses a particle *n* to separate pronouns from each other in the post-verbal position. The insertion of this consonant allows for the pronunciation of vowels that would normally be deleted because of regular vowel coalescence rules.

In Tadaksahak there is no evidence that this particle is more than the consonant /n/. In Songhay of Gao there is a particle /na/ 'transitive' that marks direct objects with verbs that use preverbal pronouns (Heath 1999b:212).

The use of the pronoun separator *n* is illustrated below in (c); The sentence (b) only has one pronominal element; sentence (a) presents the full sentence without pronominalization.

(138) a) *a=kkuná ceedí húgu ka.*
3s=find spoon house LOC
s/he found a spoon in the house.

b) *a=kkun(á)=a* *húgu* *ka.*
3s=find=3s house LOC
s/he found it in the house.

c) *a=kkun(á)* *áa=ka* *n* *a*
3s=find 3s=LOC SEP 3s
s/he found it in it.

The pronoun separator does not only separate direct object pronouns from other pronouns, it also separates postpositional pronouns from each other. The following clause illustrates this.

(139) *a=kkáw* *aɣáy* *sa* *n* *áa=ka* *ṭónd-en.*
3s=take 1s DAT SEP 3s=LOC pebble-PL
She took pebbles out of it (rice) for me.

The following example has the maximal amount of pronouns possible in one single clause.

(140) *Koy* *ni=m-d(á)* *áa=se* *n* *áa=ka* *n* *a!*
leave 2s=SUBJ-do 3s=DAT SEP 3s=LOC SEP 3s
Go put it in it for him.

ənda 'with' can be preceded by the pronoun separator.

(141) *Lém-kat* *aɣáy* *sa* *n* *á=(ə)nd(a)* *i-fígn-an*
twine-VEN 1s DAT SEP 3s=with PL-thread-PL
Twine me thread with it (earth).

Read more about *ənda* and its behaviour with pronouns under 3.2.7.11.2.2.

3.2.7.11.2.1 Pronouns with dative se

Most pronouns indicating the indirect (dative) object are marked by the dative postposition *se*. With first person pronouns it is absent when the pronoun is not followed by another pronoun. When another pronominal is present, *aɣáy* '1s' and *áari* '1p', used as indirect objects, are obligatorily followed by the postposition *se* DAT. Consider the examples:

(142) a) *a=nn(a)* *aɣáy* *t-ée-laq-q*
3s=give 1s F-SG-knife-F.SG
s/he gave me a knife.

b) *a=nn(a)* *aɣáy* *sa* *n* *a*
3s=give 1s DAT SEP 3s
s/he gave it to me.

c) *a=yyíddər* *áari* *báarar*
3s=hold 1p child
s/he held the child for us.

d) *a=yyíddər* *áari* *sa* *n* *a.*
3s=hold 1p DAT SEP 3s
s/he held it for us.

The third person pronouns and 2p *andi* are always followed by the postposition. For the 2s pronoun see below.

(143) a) *aɣa=dd(á)* *ándi* *s(e)* *a-sáafu...*
1s=do 2p DAT SG-greeting
I greeted you(pl)...

b) *aɣa=dd(á)* *áa=s(e)* *a-sáafu...*
1s=do 3s=DAT SG-greeting
I greeted him/her...

c) *aɣa=dd(á)* *íi=s(e)* *a-sáafu...*
1s=do 3p=DAT SG-greeting
I greeted them...

3.2.7.11.2.1.1 Second person with se *DAT*

The second person singular dative pronoun appears as *ana* ‘for you (sg)’.

(144) a) *aɣa=nn(á)* *ana* *t-ée-laq-q*
1sgive 2s.DAT F.SG-knife-F.SG
I gave you a knife.

b) *a=tə-yilkám* *ana*
3s=FUT-follow 2s.DAT
He will follow you.

The syntax of this pronoun is not regular, as it has a different position in the clause from the other DAT pronouns, following the direct object pronoun rather than preceding it, e.g.

(145) *aɣ=tə-taŋg(á)=í* *(a)na*
1s=FUT-push.ahead=3p 2s.DAT
I will push them ahead for you.

When occurring with a pronominalized locative phrase, *ana* 2s.DAT comes between the pronoun and the locative postposition. The following examples come from a dialog at the market.

(146) a) *aɣa=ṣṣúr* *íi=(a)na-be* *ṭ-ə-méedi.*
1s=put.on 3p=2s.DAT-LOC F-SG-hundred
I add you 500 Francs[1] CFA on them.

b) *aɣa=b-n(á)* *íi=(a)na-ka* *i-jím-an* *hiŋká.*
1s=IMPERF-give 3p=2s.DAT-LOC PL-thousand-PL two
I give you 10.000 Francs CFA for them.

In combination with the first person pronoun there is yet a different strategy used. The regular 2s pronoun *nín* appears together with the DAT marker. The direct object follows the verb immediately, as in the examples above with *ana*.

(147) a) *a=nná* *nín* *aɣáy* *se*
3s=give 2s 1s DAT
He gave you to me.

b) *a=nn(a)* *aɣáy* *nín* *se*
3s=give 1s 2s DAT
He gave me to you.

3.2.7.11.2.2 Pronouns with instrumental-comitative ənda

The preposition *ənda* ‘with’ does not behave as expected in all environments. When the PP with *ənda* is the only pronominalized element, *ənda* is preposed to the pronoun, e.g.

(148) a) *a=bb-éʃɣəl* *[ənda ṭáṣṣəḍ].*
3s=IMPERF-work with ax
He works with an ax.

b) *a=bb-éʃɣəl* *[ənd(a)=á].*
3s=IMPERF-work with=3s
He works with it.

---

[1] The monetary system is based on ‘one coin’ that is worth 5 Francs CFA. All numbers need therefore to be multiplied by 5 to indicate their monetary value, e.g., 100 units of 5 Francs CFA equal 500 Francs CFA.

When the instrument is pronominalized in sentences that also contain a direct object, *ənda* is postposed to its pronominal complement and now functions as a postposition.

(149) a) *a=b-hímay* *áy=n* *baŋgú [(ə)nda* *ary-én].*
3s=IMPERF-wash 3s=GEN head with water-PL
She washes her head with water.

b) *a=b-hímay* *[í=(ə)nda]* *baŋgú.*
3s=IMPERF-wash 3p=with head
She washes the head with it.

c) *aɣ=tə-ʂún* *[nín* *ənd(a)]* *[aɣa=n* *t-a-báɣor-t]*
1s=FUT-share 2s with 1s=GEN F-SG-wealth-F.SG
I will share my wealth with you.

The same behavior is found when *ənda* is used as a comitative.

(150) *a=b-déeraw* *í=(ə)nda* *baabá.*
3s=IMPERF-have.in.common 3p=with father
He has the same father as they have.

3.2.7.11.2.3 Pronouns with locative PPs

The locative postpositions *ka* 'in, from, among, to, at', *be* 'on' and *daw* 'at (somebody's place)' are always present when the accompanying noun is pronominalized. Find a selection in the examples below.

(151) a) *a=ʃʃúggu* *aɣáy* *ka*
3s=look.down 1s LOC
She looked down on me.

b) *...aɣo ʃí* *nín* *ka*
DET not.be 2s LOC
...that you have lost.

c) *t-á-ŋgud* *a=f-təmə́ɣ-təməɣ* *áa=ka*
F-SG-girl 3s=IMPERF-blink-DUP 3s=LOC
The girl blinked at him.

d) *i=ʂʂ-áŋkər* *áari* *be* *t-áa-zice*
3p=CAUS-get.up.BND 1p LOC F-SG-storm
They raised a storm on us.

e) *aɣa=ttén* *ándi* *daw*
1s=arrive 2p LOC
I arrived at your(pl) place.

f) *a-múnsu aɣo n cijín a=qqóq-an íi=be*
SG-meal DET GEN last.night 3s=be.dry-ALL 1p=LOC
The meal of the previous night has dried on it.

3.2.8 Adjectives

Tadaksahak has a category of adjectives which are different from verbs and nouns on the basis of their morphological properties. All adjectives have a corresponding verb, and the great majority of adjectives is morphologically derived from the verb stem. There are three different strategies to form adjectives depending on shape and etymology.

The first strategy concerns verbs of Songhay stock. A very different morphology is used with verbs of Tamasheq origin. A third strategy allows Songhay cognates to be inserted into the morphological pattern otherwise used in deriving adjectives from Tamasheq verbs.

3.2.8.1 'Songhay' derivation: -i/-u and zero-derivation

Some monosyllabic Songhay-based verbs form the corresponding adjective by adding a stressed high vowel. A low /a/ vowel in the stem seems to attract the *-u* suffix and a mid vowel the *-i* suffix. This marker is different from the ones found in Songhay of Timbuktu and Songhay of Gao, which add /o/ and /a/ respectively.

Since the suffix is a single vowel, a long vowel in the stem reappears. The examples below illustrate high frequency adjectives with suffix *-i* under (a) and suffix *-u* under (b)

(152) Songhay derivation

	verb	gloss	adjective
a)	*ʒen*	to be old	*ʒeen-í*
	ber	to be big	*beer-í*
	qoq	to be dry	*qooɣ-í*
b)	*ṇas*	to be fat	*ṇaas-ú*
	baq	to be broken	*baaq-ú*

Three Songhay cognates use no segmental derivational morpheme to serve as noun modifier, viz. the basic color terms 'white', 'black' and 'red/brown'.

(153) *No morpheme*

verb	gloss	adjective
bíibi	to be black	*bíibi*
kóoray	to be white	*kóoray*
cidáy	to be red	*cidáy*

3.2.8.2 Tamasheq cognates: derivation with /-an/

Di-syllabic stative verbs of Tamasheq origin take a suffix *-an* ADJZR to mark a modifier in a noun phrase.

In Tamasheq the masculine singular form of the (stative) "participle"-suffix is /-ăn/. In a clause like 'black man' the verbal stem 'to be black' is inflected with this participial suffix, e.g. /ă-háləs kăwǎl-ăn/ (SG-man be.black-/ăn/) 'black man' (cf. Heath 2006:483). This suggests that the suffix has come into the language together with its use on Tamasheq cognates.

The table below illustrates verbs taking the *-an* suffix. They are all Tamasheq cognates. When the vowel-initial suffix opens a syllable with a stressed vowel, this vowel is realized long in the adjectivized form. Under (b) the adjectival forms are listed with the realizations of this feature. (c) illustrates a V-final root that loses this vowel. The stress of the last syllable is carried over to the suffix. (d) illustrates the way the stem amalgamates with the suffix and is realized [ɛn]. Finally (e) gives the only example where the final *-ay* syllable is not amalgamated but opens up and exposes a long final /a/.

(154) *Tamasheq cognates*

	verb	gloss	adjective
a)	*dalát*	to be blue/green	*dálat-an*
	kádak	to be brown (kind of)	*kádak-an*
	yaráɣ	to be yellow	*yáraɣ-an*
b)	*yibrár*	to be bad	*yibráar-an*
	yimád	to be complete	*yimáad-an*
	yizzár	to be ahead	*yizzáar-an*
	dagág	to be slow	*dagáag-an*

	verb	gloss	adjective
	zadíg	to be clean	*zadíig-an*
c)	*yisħá*	to be strong	*yisħ-án*
d)	*daráy*	to be brown (kind of)	*dár-en*
	kaẓáy	to be white (kind of)	*káẓ-en*
	záray	to pass after	*zár-en*
e)	*yaynáy*	to be new	*yaynáay-an*

Four disyllabic Songhay cognates in our corpus also take this suffix as the only possible derivational suffix.

(155) Disyllabic Songhay cognates with -an

verb	gloss	adjective
kukú	to be long	*kuk-án*
ceená	to be small/young/few	*ceen-án*
babó	to be numerous	*babó-(a)n*
ʒíibit	to be dirty	*ʒíibit-an*

3.2.8.3 Reduplication + -an

The great majority of monosyllabic verb roots of Songhay origin use a reduplication strategy. The verb root is duplicated and the morpheme *-an* is suffixed.

The reduplication sometimes entails phonological changes, such as /n/-assimilation. A special instance is /r/-assimilation, which only occurs with the adjectival derivation.

In the list below are adjectives that occur exclusively with this strategy. (a) illustrates the regular case of CVC shaped stems reduplicated with the phonological rules of assimilation. (b) shows CV pattern reduplication following the respective rules for final Vs: /a/ is dropped and /y/ is inserted after /i/.

(156) Reduplication + /-an/

	verb	gloss	reduplication
a)	*ban*	to be soft	*bam-ban-án*

	verb	gloss	reduplication
	bun	to be dead	*bum-bun-án*
	dut	to be pounded	*dut-tut-án*
	fay	to be separated	*fay-fay-án*
	fik	to be buried	*fik-fik-án*
	kan	to be sweet	*kaŋ-kan-án*
	kos	to be cut	*kos-kos-án*
	ṭay	to be wet	*ṭay-ṭay-án*
	waṣ	to be boiling	*waṣ-waṣ-án*
	boy	to move camp	*boy-boy-án*
	hay	to give birth	*hay-hay-án*
b)	*wa*	to be healed	*wa-w(a)-án*
	ʃi	to be lost	*ʃi-ʃʃi-án*

3.2.8.4 Irregular adjectives

Quite a number of frequently used adjectives appear in several forms. They are all Songhay cognates. It should be noted that this variation is found in real language use, and not due to the medium of elicitation. The forms listed without brackets below have been extracted from our text corpus, those in brackets have only been attested in elicitation.

Some reduplicated roots can take the *-i* suffix and not only the expected *-an*.

Roots under (a) have two or three forms. The examples (b) to (e) show forms which are irregular for one or another reason (b) has assimilation of the final /r/ of the first syllable to the /m/ of the second and adds *-i* despite reduplication. Elicitation also provided the expected *-an* ending; (c) shows partial reduplication but both stems do not take the same suffix. ‘hot’ takes *-i* and ‘bitter’ takes the *-an* suffix, elicitation also provided the other possibility. ‘fall’ under (d) does not duplicate yet takes *-an*. (e) ‘good’ reduplicates only partially.

(157) *Songhay cognates with irregular derivation*

	verb	gloss	simple root	redup. root
a)	*ber*	to be big	*beer-í*	*bə-béer-i* *bəb-bər-án*
	qoq	to be dry	*qooɣ-í* *qoq-án*	*qoq-qoɣ-án*
	ʒen	to be old	*ʒeen-í*	*ʒen-ʒen-án*
	ṇas	to be fat	*ṇaas-ú*	*ṇas-ṇas-án*
b)	*mor*	to be distant		*mom-mor-í ~* *(mom-mor-án)*
c)	*korrá*	to be hot		*kor-korr-í ~* *(kor-korr-án)*
	horrá	to be bitter		*(hor-horr-í) ~* *hor-horr-án*
d)	*kaŋ*	to fall	*káŋg-an*	
e)	*gíman*	to be good		*giŋ-gimán*

It seems that the two very different strategies for adjective formation found in Tadaksahak are on the way to merging into one form that is used with all verbal roots. This merged form would be based on two or more syllables (possibly reached by reduplication), followed by the suffix *-an*. This implies a 'normalization' towards the Tamasheq pattern.

3.2.8.5 Plural

Adjectives agree in number with the noun they modify. Elicitation of the morpheme provides the form *-ənin*, which is added to the adjectivizer suffix, e.g. *ary-én yay-yay-án-ənin* 'cool water' However, in our text data only few adjectives with the ending *-an-ənin* occur. It would seem that these two suffixes are abbreviated in running texts to a two-syllabic suffix where *-an* and *-ən* are collapsed to a long [aː] which results in the plural ending *-aanin*. This suffix combines the meanings 'adjective' and 'plural'. It seems that the stress pattern of the verbal root influences the stress possible on the suffix. Reduplicated roots tend to have the stress on the first syllable of the

suffix while roots with stress on the final syllable keep it there. Note this change in the two forms for 'big' on the list below (a).

The three roots without adjectival derivation under (b) take *-nin* as the plural suffix. In the forms ending in *-ay* the unstressed syllable is pronounced [e:]

(158) Plural adjectives from texts

	adjective	plural	phonetic	gloss
a)	*zadíig-an*	*zadíg-anin*	[zaˈdigənɪn]	clean
	bəbéer-i	*bəbéer-anin*	[bəˈbeːrənɪn]	big
	bəbbər-án	*bəbbər-áanin*	[bəbːəˈraːnɪn]	big
	yayyay-án	*yayyay-áanin*	[jɛjːɛˈjaːnɪn]	fresh
b)	*bíibi*	*bíibi-nin*	[ˈbiːbənɪn]	black
	cíday	*cíday-nin*	[ˈʧideːnɪn]	red
	kóoray	*kóoray-nin*	[ˈkoːreːnɪn]	white

One clear exception is *giŋ-gimán* 'good'. Its stem-final *an* is interpreted as part of the suffix and only adds *-ən* for the plural which results in *giŋ-gimán-ən*.

3.2.9 Quantificational adjectives

3.2.9.1 Basic numerals

Most numerals are of Tamasheq origin. 'one' and 'two' are from Songhay and 'twenty' seems to have a cognate in Mauritanian Zenaga (Nicolas 1953:60).

The numerals from 'one' to 'ten' can modify a noun as part of the noun phrase. The numeral 'one' follows a noun in the singular and the numerals 'two' to 'ten' follow a noun in the plural, e.g. *báarar fóoda* 'one child' and *barr-én hiŋká* 'two children' respectively.

An abbreviated form of 'one' serves as indefinite marker for newly introduced entities in discourse, e.g. *surgoy fo* (woman IND) 'a certain woman'.

The numerals from 'two' up can be used as nouns, too, without additional morphology when the referent is clear from the context. In a nominal function they can take the plural morpheme. The numeral

'one' needs to take the nominalizer prefix *a-* to be allowed in a nominal function. This prefix is also present when the word is used in isolation, i.e., when listing the numerals. This is shown by the brackets on the list below.

(159) Numerals

number	gloss
a-ffó / (a-f)fóo-da	1
hiŋká	2
kaaṛáḍ	3
akkóz	4
ʃammúʃ	5
ʃaaḍíʃ	6
iʃʃá	7
iṭṭám	8
ṭaaṣá	9
maaṛá	10
táaʃinda	20
ṭ-ə-méedi	100
a-jím	1000

3.2.9.2 Compound numerals

The multiples of ten higher than twenty are built by juxtaposition. This kind of compounding is not found elsewhere in the language. It seems to be a imported feature from Tamasheq where the constituents are in this same order, e.g. /səmmos(ăt) təṃərwen/ 'fifty' (lit. 'five tens'). The arguments that the 'tens' in Tadaksahak are compounds and not noun phrases are the following: 1) no postposition can be inserted between the two units; 2) final /a/ of *iʃʃá* 'seven' and *ṭaaṣá* 'nine' behave as in tightly knit units 3) consonant-final numerals have the insertion of an epenthetic schwa between the two units and finally 4) the number 'thirty' regularly re-syllabifies in rapid speech (see Phonology 2.4.2.3).

The lexeme *t-ə-méḍw-in* ‘ten small ones’ is a Tamasheq feminine plural derived from Tamasheq /măraw/ ‘ten’.

(160) Compound numerals

number	gloss
akkóz-ə-t-ə-méḍw-in	40
ʃammúʃ-ə-t-ə-méḍw-in	50
iʃʃáy-t-ə-méḍw-in	70

Another word derived from ‘ten’ has survived in the form of *t-a-máaḍuk* ‘tenner’ which designates the piece of money worth 50 Francs CFA (10x5 francs), it is also used to mean ‘small herd (consisting of some ten animals)’.

Numerals from ‘11’ to ‘19’ and all the other single digits between the multiples of ten are built as a coordinate noun phrase ‘ten and one/two/…’ ‘fifty and ...’

(161) Formation of numbers 11 – 19

number	gloss
maaḍá (ə)nd(a) a-ffó	11
maaḍá (ə)nda hiŋká	12
maaḍá (ə)nd(a) iʃʃá	17

The numbers beginning with ‘hundred’ and higher are expressed in a noun phrase. The lexemes ‘hundred’ and ‘thousand’ are the head, and occur in the plural when needed.

(162) ‘hundred’ and ‘thousand’

singular	plural	gloss
ṭ-ə-méedi	*ṭ-á-mmad*	100
a-jím	*i-jíim-an*	1000

To form the numbers in between, the smaller units are added by inserting *ənda* ‘and’, e.g. *ṭ-á-mmad hiŋká (ə)nda ʃammúʃ-ə-tə-méḍwin ənda taaṣá* (100 two and 50 and 9) ‘259’.

The numerals higher than thousand are loans from French, e.g. *miliyón* ‘million’ and take a plural suffix *miliyón-tan.* Syntax of these

numerals and other types of quantifying modifiers are discussed in 4.1.5. and 4.1.6.