

Shughni Phonology Statement

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Symbols and abbreviations

(f)	feminine
(m)	masculine
(imp)	imperative
(fut)	future
(disc)	discourse
(dim)	diminutive
(D)	Dari
(A)	Arabic
(part)	participlizer
(1s)	first person singular
(2s)	second person singular
(3s)	third person singular
(1p)	first person plural
(2p)	second person plural
(3p)	third person plural

Shughni Phonology Statement

1 Introduction

1.1 Purpose of this paper

The purpose of this paper is to give an overview of Shughni phonology that is complete enough to inform orthography decisions. After introducing the Shughni language, this paper describes its phonological units (consonants, vowels and syllables) and morphophonological processes which have been observed in the language.

1.2 Background

For the past few years, SIL has had an ongoing discussion with scholars and leaders from the Shughni community in Afghanistan regarding the orthography of the Shughni language. I (Karen Olson) have been involved in research and discussion about the orthography and participated in several orthography meetings; since a good orthography needs to be based on phonological research, it was necessary to begin a study on this topic.

Formal study on the phonology of Shughni has happened in Tajikistan and has been undertaken by Shughni speakers themselves in Afghanistan; however, SIL has not of yet written a formal phonology. Other literature is available in Russian, but is not accessible to English speakers.

Externally, a phonology write-up was done as part of a grammar paper entitled “Shughni” by E. (Joy) I. Edelman and Leila R. Dodykhudoeva, published in *The Iranian Languages* in 2009. While useful, it is not comprehensive and also focuses on Tajik Shughni which is a bit different phonologically from the Shughni spoken in Afghanistan.

Some notable Dari language phonology-related works include *Alphabet of Shughni Language* (2004) by Khair Muhammad Haidari, Assistant Senior Researcher at the Academy of Sciences of Afghanistan and *Selected Writings Appropriate for the Sounds that Exist in the Language of Shughni* (prepared 2012 but unpublished) by Nawrooz Ali Sabiti, Academic Supervisor in Faizabad, Afghanistan.

1.3 Shughni

Shughni is an Indo-European, Indo-Iranian language belonging to the Pamir language cluster of the Northern East Iranian group. In Afghanistan, it is spoken in the Shughnan district of Badakhshan province, about 50 km north of Ishkashim in the Pamir mountains. It is also spoken in the Gorno-Badakhshan region of Tajikistan. In Afghanistan there are about 40,000 speakers and in Tajikistan, approximately 100,000.¹

Dialects of Shughni include Badjuvi, Khufi, Rushani, Bartangi, Roshorvi; Khufi is a subdialect of Rushani. Bartangi may be a separate language. Sarikoli is another closely related language variety spoken in China which was once classified as a dialect of Shughni but is now considered a separate language. Shughni is the biggest dialect, with Rushani coming second, Oroshor third, Bartangi next and Khufi the smallest.² This paper focuses on the majority dialect, Shughni, with a few references to the Roshani dialect. The data comes from the Afghan variety of Shughni, not the Tajik variety. Shughni is closely related to the other Pamiri languages, namely Munji, Wakhi, Ishkashimi, and Sanglechi.

Shughni is heavily influenced by Dari and Tajik, which are the majority languages of the area. There is also some influence from Russian (especially in Tajikistan), and Arabic (especially in the religious and educational domains).

2 Phonological inventory

This section provides an inventory and description of consonants, vowels, syllables and prosodic phenomena (stress and intonation) in Shughni. As much as possible, only monomorphemic example words (no words with prefixes or suffixes) are used.

2.1 Consonants

2.1.1 Consonant chart

Shughni has 29 consonants, which may be charted as follows:

¹ Estimated by Katja Muller, 2013. The *Ethnologue* statistics are out of date.

² Since the *Ethnologue* statistics are out of date, they are not included here.

place manner	labial	dental	alveolar	palatal-alveolar	palatal	velar	post-velar
voiceless stops/affricates	p	t	ts	tʃ		k	q
voiced stops/affricates	b	d	dz	dʒ		g	
voiceless fricatives	f	θ	s	ʃ	ç	x	
voiced fricatives	v	ð	z	ʒ	j	ɣ	
nasals	m		n				
rhotics			r				
laterals			l				
semivowels	w				j		(h)

(For ease of transcription, the dental symbol has not been written on the dental consonants; also, throughout the document the rhotic will be transcribed /r/.)

In addition, the consonant /h/ is found in words borrowed from Dari and Arabic. Shughni speakers do not pronounce /h/ in the same places where it exists in Dari; while Dari speakers may pronounce this with [h] or [w], it is usually realized in Shughni by a glottal stop. However, since it is represented in the Dari writing system and speakers are aware of it, it is worth mentioning here.

	Shughni		Dari		Gloss
/h/	/mu.ha.'bat/	[mu.'a.'bat]	/,mu.ha'.bat/	[,mu.ha.'bat]	‘love’
	/har/	[ʔar]	/har/	[har]	‘every’

2.1.2 Consonant distribution

2.1.2.1 Morpheme-initial

All consonants are found in word-initial position. The following minimal pairs (or near-minimal pairs) show contrast in the morpheme-initial position:

/p/	/pɪʃ/	‘cat’
/b/	/bɪʃ/	‘breast’
/t/	/tɪs/	‘spill’
/d/	/dɪs/	‘so’
/t͡s/	/t͡suq/	‘sticking up’
/d͡z/	/d͡zuq/	‘poke’
/t͡ʃ/	/t͡ʃɪl/	‘forty’
/d͡ʒ/	/d͡ʒɪl/	‘horse blanket’
/k/	/kɑl/	‘head’
/g/	/gɑl/	‘edge’
/q/	/qɑp/	‘catch’
/f/	/fɑʃ/	‘dangling part of turban’
/v/	/vɑç/	‘rope’
/θ/	/θud/	‘burned’
/ð/	/ðud/	‘smoke’
/s/	/sar/	‘head’
/z/	/zar/	‘hurt’
/ʃ/	/ʃig/	‘calf’
/ʒ/	/ʒiz/	‘firewood’
/ç/	/çm/	‘hear (imp.)’

/j/	/jm/	‘wife’
/x/	/xeç/	‘relatives’
/ʏ/	/yeç/	‘shell of walnut or apricot seed’
/m/	/maj/	‘female sheep’
/n/	/naj/	‘mole or growth’
/r/	/red/	‘left over’
/l/	/lef/	‘blanket’
/w/	/wed/	‘willow’
/j/	/jed/	‘bridge’

2.1.2.2 Between vowels

All the consonants listed above are also found between vowels, that is, in word-internal onsets. The following examples show contrast between consonants in similar vowel environments where possible:

/p/	/tʃa.'par/	‘sledge’
/b/	/xa.'bar/	‘news’ (D. loan)
/t/	/pɪ.'tɪf/	‘distant relative’
/d/	/ˈwi.dɪr/	‘day after tomorrow’
/ts/	/rɪ.'tsiθt/	‘escapes’
/dz/	/bɪ.'dziç/	‘salty’
/tʃ/	/çɪ.'tʃɪf/	‘marmot’
/dʒ/	/bɪ.'dʒɪn/	‘garbage’
/k/	/ta.'ka/	‘piece’
/g/	/a.'ga/	‘awake’
/q/	/tʃa.'qa/	‘rinse’
/f/	/xa.'fa/	‘upset’ (D. loan)

/v/	/ta.'var/	‘axe’
/θ/	/a.'θert/	‘stretches out’
/ð/	/yʊ'ðɑ/	‘boy’
/s/	/xl.'sirts/	‘brother-in-law’
/z/	/bl.'zid/	‘cage (pst)’
/ʃ/	/dl.'fid/	‘roof’
/ʒ/	/wl.'ʒivd/	‘return (pst f)’
/ç/	/wl.'çidz/	‘key’
/j/	/ml.'jidʒ/	‘sheep’
/x/	/nl.xiç.'tɔw/	‘to collapse’
/ɣ/	/nl.ɣiç.'tɔw/	‘to hear’
/m/	/ma.'la/	‘building’
/n/	/fa'.na/	‘plenty’
/r/	/da.'ra/	‘valley’
/l/	/pa.'la/	‘plot of ground’
/w/	/la.'wak/	‘plastering stone’
/j/	/ka.'jak/	‘dizzy’

2.1.2.3 Word-final

The same are found word-finally:

/p/	/gap/	‘talk’
/b/	/çab/	‘night’
/t/	/bat/	‘flour yoghurt stew’
/d/	/bad/	‘after’
/ts/	/pits/	‘face’
/dz/	/pidz/	‘cook (imp)’

/tʃ/	/batʃ katʃ/	‘children’
/dʒ/	/jadʒ/	‘a kind of bird’
/k/	/mak/	‘don’t’
/g/	/zag/	‘field’
/q/	/sa.ˈbaq/	‘lesson’
/f/	/daf/	‘tamborine’ (D. loan)
/v/	/lav/	‘edge/lip’
/θ/	/pɒθ/	‘bullet’
/ð/	/pɒð/	‘foot’
/s/	/bas/	‘explanation (Farsi loan)’
/z/	/gaz/	‘meter’
/ʃ/	/maʃ/	‘we’
/ʒ/	/taʒ/	‘pull (imp.)’
/ç/	/maç/	‘wild peas’
/ʝ/	/maj/	‘female sheep’
/x/	/jax/	‘ice’
/ɣ/	/way/	‘cry (imp.)’
/m/	/dam/	‘back’
/n/	/nan/	‘mother’
/r/	/par/	‘wing’
/l/	/gal/	‘edge’
/w/	/saw/	‘go (imp.)’
/j/	/paʝ/	‘yoghurt’ ³

³ Note: the two semivowels could also be treated as vowels (/u/ and /i/) word-finally, though I am choosing to treat them as semi-vowels. See section 2.2.3, “Vowel Sequences”, for further discussion of this.

2.1.3 Contrast between consonants

In case there are still questions concerning the consonants, the following minimal pairs are also provided to prove contrast:

Contrasting /d̥z/ and /d̥ʒ/:

/d̥z/	/pind̥z/	‘five’
/d̥ʒ/	/pind̥ʒ/	‘birdseed’

Contrasting /k/ and /q/:

/k/	/køp/	‘upper back’
/q/	/qøp/	‘plate’

Contrasting /ts/ and /tʃ/:

/ts/	/ðum̥tsak/	‘seed/core’
/tʃ/	/ðum̥tʃak/	‘eye of needle’

Contrasting /m/ and /n/:

/m/	/mum/	‘grandmother’
/n/	/mun/	‘apple’

Contrasting /l/ and /r/:

/l/	/xɔl/	‘sequin’ (D. loan)
/r/	/xɔr/	‘poor’ (D. loan)

While the above examples show that /l/, /r/, and /n/ are separate phonemes, it should be noted that /l/ sometimes appears to occur in dialectal variation with both /r/ and /n/:

/l/ and /r/:

/l/	/almoɾ/	‘cupboard’
/r/	/armoɾ/	‘cupboard’

/l/ and /n/:

/l/	/ʃamɪla/	‘quickly’
/n/	/samɪna/	‘quickly’

2.1.4 Consonant clusters

In Shughni, consonant clusters are not allowed in syllable onsets. Loan words are modified by vowel insertion to uphold this rule, as in the following:

Dari:	Shughni:	Gloss:
/pja.'da/	/pi.jɔ.'ða/	‘by foot’

Shughni does allow consonant clusters in syllable codas. Most of these are found word-finally; however, in compound words or words with suffixes, clusters may be found in syllable codas word-medially. All of the clusters found in codas word-medially are listed below. Note that none of these words are mono-morphemic.

/peçs.tak/	‘question’
/tsɪrafs.tow/	‘to sting’
/pindʒ.də.nak/	‘birdseed holder’
/peçs.tow/	‘to ask’
/pa.lɔjs.tow/	‘to investigate’
/bɪ.ðemp.tow/	‘to cover’
/tsɪ.rafs.tow/	‘to sting’
/rɪrθ.tow/	‘to laugh’
/rɪjdʒ.dow/	‘to shake’
/tʃemp.tow/	‘to want’
/ʃarθ.kɪn/	‘mud-made’
/ʒiwdʒ.ge/	‘like.nom’
/kɪft.zɔr/	‘field’
/qundʒ.ɣa/	‘saddle load’
/an.gɪçt.møk/	‘thimble’
/an.gaxts.tow/	‘to stick’
/ar.ðɪçts.tow/	‘to dream’

Many consonant clusters occur word-finally. The following chart shows all the coda clusters found in a 2000-word data corpus. Some of these clusters are formed by adding the 3 singular suffix /-t/ or /-d/ or the perfect suffix /-tʃ/ or /-dʒ/ to a root. If the cluster is only found as a result of with this suffix, the cluster is underlined. Note that clusters found only in loan words are not listed. In this analysis, sequences with /w/ and /j/ will be treated as consonant clusters rather than vowel glides. (See section 2.2.3 on Vowel Sequences for further discussion of this.)

Word-final Consonant Clusters

C ₁ C ₂ → ↓		stop	affricate	fricative	nasal	liquid	glide
				-sibilant + sibilant			
stop		pt kt qt	pts ptʃ ktʃ				
affricate		<u>dzd</u> <u>tst</u>	<u>tstʃ</u>				
fricative		<u>θt</u> θk θq <u>ðd</u> <u>ft</u> vd çp çt çk <u>jd</u> xt <u>yd</u>	<u>θtʃ</u> <u>ðdʒ</u> <u>fts</u> <u>ftʃ</u> vdʒ <u>çts</u> <u>çtʃ</u> <u>jdʒ</u> <u>jdʒ</u> <u>xts</u> <u>xtʃ</u> <u>vdʒ</u>		ðm çm jn jm		

		st sk sq zd zg zm ʃt ʃk ʒd ʒg	\widehat{sts} $\widehat{ʃtʃ}$			zn zm ʃn xm		
nasal		<u>nt</u> nd ng <u>mt</u> mb	\widehat{nts} \widehat{ndz} $\widehat{ntʃ}$ $\widehat{ndʒ}$ \widehat{mts}					
liquid/trill		lt ld lk rt rd rg rk rq	$\widehat{ltʃ}$ \widehat{rdz} $\widehat{rdʒ}$	rθ rð rv rç rj rx		rm rn		
glide		<u>wd</u> jd	$\widehat{wdʒ}$ $\widehat{jdʒ}$					

It is interesting to note Shughni's preference for obstruents at the end of coda clusters, and dislike for them in the middle of a word. In the following example the final consonant becomes [-obstruent] and loses its position in the coda when the suffix /-a/ is added.

/sɑvdʒ/ 'green'

/sav.za/ ‘greenery’

A few three-consonant clusters also occur word-finally in some Shughni words. These are listed below.

rθk	/ʃarθk/	‘mud’
rõn	/xurõn/	‘crow’
çtstʃ	/peçts-tʃ/	‘ask.perf’ (not morphophonemic)
fst	/wɪ'ʒafst/	‘return.3s’ (not morphophonemic)
jst	/pa.lɔjst/	‘work.3s’ (not morphophonemic)
jstʃ	/pa.lɔjstʃ/	‘work.perf’ (not morphophonemic)
rʃt	/qurʃt/	‘snore.3s’ (not morphophonemic)
mptʃ	/tʃemptʃ/	‘want.perf’ (not morphophonemic)
mpt	/tʃempt/	‘want.3s’ (not morphophonemic)

Shughni uses some Dari loan words that have laterals or flaps at the end of a consonant cluster word-finally, but tends to adapt them by inserting a vowel so that the lateral or flap is at the beginning of an onset. See the following examples:

	Dari	Shughni	
ql	/naql/	/naq.li/	‘story’
sl	/asl/	/as.li/	‘genuine’
kr	/fikr/	/fik.ri/	‘think’
xr	/faxr/	/fax.ri/	‘take pride’
sr	/asr/	/as.ri/	‘after dark’
zr	/ozr/	/oz.ri/	‘beg’
mr	/amr/	/am.ri/	‘command’

2.1.4.1 Geminate consonants

Consonants may be doubled or lengthened in certain onomatopoeic words. The following consonants may be geminated (doubled):

l	/tʃul:ast/	‘tinkle’
r	/tʃur:ast/	‘crunch’

(In the first example, the /l/ is longer than usual. In the second example, the flap [ɾ] changes to a trill [r]).

2.1.5 Phonetic realizations of consonants

A few processes take place to show the final realization of the consonants. These include the following:

Place assimilation of the nasal: /n/ is always realized as [ŋ] before /g/ (/ŋ/ only occurs in this environment).

Aspiration: voiceless stops are aspirated word-initially, but not word-medially or word-finally.

Lengthening of the flap: /ɾ/ is usually realized as [ɾ] but for emphasis, or in onomatopoeic words, it may be realized as [r].

Devoicing: Most of the voiced consonants are devoiced, or partially devoiced, at the end of an utterance, especially in rapid speech. However, when in isolation the voicing may remain for emphasis. Stops in consonant clusters with fricatives may also devoice.

Uvular fricatives: Phonetically these sounds are the same as they are in Dari, though literature on Dari often calls them velar (which is why I am transcribing them as /x/ and /ɣ/). However, I believe they are actually uvular, though they may occasionally realize as velar.

The following chart shows the phonetic realizations of consonants in various environments:

Phonetic realizations of consonants in Shughni

consonant	phonetic realization	word-initial	between vowels	word-final	other realizations
-----------	----------------------	--------------	----------------	------------	--------------------

p	[p]		[tʃapar] ‘sled’	[lap] ‘much’	?
	[p ^h]	[p ^h ɪʃ] ‘cat’			
b	[b]	[bɪʃ] ‘breast’	[raba:ç] ‘destroyed’	[çɑ:b] ‘night’	?
t	[t ^h]	[t ^h is] ‘spill’	?	?	?
	[t]	?	[qa.taʃ] ‘milky’	[bat] ‘bosom’	?
d	[d]	[dɔd] ‘father’	[xɪdɑr] ‘elder (f)’	[qɑ:d] ‘height’	?
	[t]	?	?	[qɑ:t] ‘height’	[pɔt:çɔ] ‘king’
ts	[ts]	[tsɪvɪnts] ‘bee’	[kɪtsɔr] ‘oven’	[vɪts] ‘be perf.’	?
dz	[dz]	[dzalɪk] ‘small f.’	[bɪdzux] ‘Bidzux (place name)’	[ʒebɪdz] ‘spinning’	?
	[ts]	?	?	[ʒebɪts] ‘spinning’	?
tʃ	[tʃ]	[tʃɪd] ‘house’	[çɪtʃanden] ‘they dig’	[ɪtʃ] ‘now’	?
dʒ	[dʒ]	[dʒmow] ‘similar’	[pɛ.dʒɔn] ‘cliff’	[çɪr.bɪdʒ] ‘frog’	?
k	[k ^h]	[k ^h ɔd] ‘dog’	?	?	?
	[k]	?	[sɪkɪn] ‘pitchfork’	[mɑ:k] neck	?
g	[g]	[gaçt] ‘return’	[aga:] ‘awake’	[za:g] ‘marsh’	?
	[k]	?	?	[purk] ‘mouse’	?
q	[q]	[qate]	[qa.qa.ra:]	[qɔq]	?

		‘with’	‘cackle’	‘dry’	
θ	[θ]	[θir] ‘ashes’	[aθertow] ‘to reach’	[ɤaθ] ‘manure’	?
ð	[ð]	[ðust] ‘hand’	[ma.ðor] ‘lunch’	[mið] ‘waist’	?
	[θ]	?	?	[miθ] ‘waist’	?
f	[f]	[faj] ‘wooden shovel’	[afaj] ‘the day after tomorrow’	[çitʃif] ‘marmot’	?
v	[v]	[vordʒ] ‘horse’	[tsavor] ‘four’	[rɛgøv/rɛjøv] ‘creek’	?
	[f]	?	?	[rɛgøf] ‘creek’	?
ʃ	[ʃ]	[ʃint.ow] ‘to laugh’	[baʃɑnd] ‘good’	[kaʃ] ‘hot’	?
ʒ	[ʒ]	[ʒmdam] ‘wheat’	[wɪʒafs] ‘return (imp)’	[ta:ʒ] ‘pull (imp)’	?
s	[s]	[sɪt] ‘dust’	[χɪsɪrts] ‘brother-in- law’	[wu:s] ‘beams’	?
z	[z]	[zmaj] ‘daughter-in- law’	[ma.za:] ‘flavor’	[vaz] ‘female goat’	?
	[s]	?	?	[as] ‘from’	?
ç	[ç]	[çintow] ‘to hear’	[maç.ordʒ] ‘mung beans’	[maç] ‘wild peas’	?
j	[j]	[jmɪk] ‘woman’	[mjɪdʒ] ‘male sheep’	[maj] ‘female sheep’	?
x	[χ]	[χɔwɪ] ‘six’	[waxøn] ‘Wakhan’	[pɛ:χ] ‘skin boots’	?
ɣ	[ɣ]	[ɣa:fts] ‘with’	[nɪkʊçt] ‘cackle’	[wax] ‘dry’	?

		‘thick’	‘heard’	‘cry’	
	[χ]	?	?	[waχ] ‘cry’	?
m	[m]	[marøb] ‘cream’	[imøm] ‘imam’	[mum] ‘grandmother’	?
n	[n]	[noʃ] ‘apricot’	[fanɑː] ‘plenty’	[naːn] ‘mother’	?
	[ŋ]	?	?	?	[aŋɡɪʃt] ‘finger’
r	[r]	?	?	?	[ʈsurɑːst] ‘rustle’
	[ɾ]	[ruʃt] ‘red’	[arai] ‘three’	[dastur] ‘similar to’	?
l	[l]	[loq] ‘clothes’	[χalɑːs] ‘finished’	[kaːl] ‘head’	?
w	[w]	[wuːs] ‘ceiling beams’	[mewa] ‘fruit (D. loan)’	[sɪtɔw] ‘to become’	?
j	[j]	[joɪdʒ] ‘flour’	[kajøn] ‘pear’	[tʃɑj] ‘who’	?

2.2 Vowels

2.2.1 Vowel chart

Edelman and Dodykhudoeva (2009) charted ten vowels in Shughni. Roughly they are equivalent to the vowels charted below. One difference in the transcription here is that I have used the front close-mid phoneme /ø/ while they have used a back vowel for this phoneme (perhaps to make the chart more symmetrical). It should be noted that this vowel varies for different dialects of Shughni; for example, Roshani dialect will use or /ɔ/ in place of this vowel. The vowels of Shughni may be charted as follows:

Vowels of Shughni

	backness		
height	front	central	back
close	i		u
near-close	ɪ		ʊ
close-mid	e ø		
open-mid	ɛ		ɔ
open	a		ɑ

The vowels e, ø, ɛ, ɑ, u, and ɔ are phonetically long (but for ease of transcription the length will not be transcribed). ɪ, a, and ʊ are phonetically short. The vowel /e/ is phonetically (but not phonologically) a glide [e^j].

Shughni has more vowels than Dari and does not borrow extra vowels from Dari.

2.2.2 Vowel distribution

Vowels found in open syllables (i.e., syllables with no coda) non word-finally are as follows:

/i/	/pi.'ðak/	‘trip’
/ɪ/	/pi.'tɪʃ/	‘cousin’

/a/	/pa.'la/	‘plot of ground’
/a/	/'la.tək/	‘a kind of grass’
	/'na.la/	‘says’
	/ka.'gand/	‘cradle pillow’
/u/	/ku.'ta/	‘room’
/u/	/pu.'man/	‘fine goat wool’
/ɔ/	/pɔ.'tʃa/	‘cuff’
/e/	/pe.'tʃak/	‘hairpiece’
/ø/	/dø.'mɔd/	‘son-in-law’
/ɛ/	/sɛx.'ak/	‘load on one’s back’
	/ðɛd'.ɔw/	‘to hit’

Note that the vowel /ɛ/ was only in an open syllable non-word-finally in words that had suffixes. The word /sɛx/ ‘speck’ and /ðɛd/ ‘hit 3s’ are also found without the suffixes, so they are not truly open syllables.

The vowel /a/ was also rare in this position; in the first two examples, notice that the stress is on the first syllable, rather than the second syllable which is the usual pattern. This is likely because the long vowel naturally acquires more stress than the short vowel. The third example, however, has the usual stress pattern; perhaps this is because the same long vowel is found in both syllables. (A few prefixes that have /a/ are also stressed; see section 3 on morphophonemic processes.)

Vowels found in word-final open syllables are as follows:

/ɪ/	/tɪ/	‘on’
/a/	/ta/	‘future discourse particle’
/a/	/ka/	‘where’
/ø/	/lø/	‘tell (imp.)’
/u/	/ku/	‘disc. Particle’
	/tu/	‘you’ (Dari /tu/)
/ɔ/	/vɔ/	‘then’
/e/	/çum.'ne/	‘tomorrow’
	/'a.lɪf.'be/	‘alphabet’ (D. /'alɪf.'ba/)

Notice the absence of the long vowel /ε/ in word-final open syllables.

The vowel /u/ is only found in word-final open syllables in onomatopoeic and loan words:

/u/	/qu/	‘coo’
	/qɪʃ.ˈqu/	‘sound made while swinging’
	/ləj.ˈlu/	‘plastic bag’ (D. loan)
	/ku/	‘mountain’ (D. loan)
	/ke.ˈlu/	‘kilo’ (D loan)

The vowel /i/ is only found word-finally in loan words:

/i/	/ali/	‘Ali’ (Arabic loan)
	/di/	‘village’ (D loan)

All ten vowels are found in syllables closed with a single consonant are as follows:

/i/	/pip/	‘metal jug’
	/riz/	‘vine’
/ɪ/	/pɪd/	‘symbolic father’
/ε/	/rez/ (or /redz/)	‘hole or nest’
	/teb/	‘twist’
/e/	/teb/	‘cut it (imp.)’
	/ben/	‘palm’
/a/	/pap/	‘poofy (f)’
/ɑ/	/qɑp/	‘catch’
/u/	/pum/	‘feather’
	/bun/	‘handful of flour’
/ø/	/køp/	‘upper back’
	/bøn/	‘beard’
/ʊ/	/pʊp/	‘poofy (m)’
	/bʊn/	‘base’
/ɔ/	/bɔb/	‘grandfather’

All ten vowels are found in syllables closed with a consonant cluster as follows:

/i/	/par. ¹ ðist/	‘bracelet’
/ɪ/	/xɪst/	‘wet’
/ɛ/	/mest/	‘moon’
/e/	/best/	‘he/she loses’
/a/	/bar. ¹ ʃast/	‘forcefully’
/ɑ/	/past/	‘low’
/u/	/vust/	‘fastened’
/ø/	/pøst/	‘skin’
/ʊ/	/ðust/	‘hand’
/ɔ/	/nɔst/	‘he/she sits’

2.2.3 Contrast between vowels⁴

The following minimal pairs prove contrast between vowels where the examples above may not have been clear:

/ɑ/ and /a/

/a/	/bat/	‘bosom’
/ɑ/	/bat/	‘flour mulberry stew’

Note: word-finally, this pair only contrasts if you take into account integral Dari loan words, such as the following:

/a/	/ba/	‘to (D. loan)’
	/aga/	‘if (D. loan)’
	/ja/	‘come (imp.)’
/ɑ/	/ba/	‘kiss’
	/aga/	‘awake’
	/ja/	‘she’

/ɛ/ and /ɪ/

/ɪ/	/xɪç. ¹ tak/	‘crotch’
/ɛ/	/xɛç. ¹ tak/	‘wooden bowl’

/ɛ/, /i/, /e/, /ɔ/, /ʊ/

/i/	/ðid/	‘manure’
/ɛ/	/ðɛd/	‘war’
/e/	/ðed/	‘rain’

/ɔ/ and /ʊ/

/ɔ/	/ðɔd/	‘hit (past)’
/ʊ/	/ðʊd/	‘smoke’

⁴

Thanks is given to Nawrooz Ali Sabiti (2012) who provided some of the examples.

/ɛ/ and /ø/		
/ɛ/	/rɛd͡z/	‘nest’
/ø/	/rød͡z/	‘sky window’

/ɪ/ and /ø/		
/ɪ/	/andɪd͡z/	‘get up’ (imp)
/ø/	/andød͡z/	‘cause to get up’ (causative)

/e/ and /ø/		
/e/	/'ta.rɛd/	‘there’
	/an.'d͡zɛm/	‘female lamb’
/ø/	/'ta.rød/	‘here’
	/an.'d͡zøm/	‘male lamb’

/ʊ/, /ɔ/, and /ɑ/		
/ʊ/	/jʊ/	‘he’
/ɔ/	/jɔ/	‘or’ (D. loan)
/ɑ/	/jɑ/	‘she’

/u/ and /ɔ/		
/u/	/das.'tʊr/	‘similar to’
	/nʊst/	‘sat m’
/ɔ/	/das.'tɔr/	‘long scarf’ (D. loan)
	/nɔst/	‘sat f’

/ɔ/ and /ɑ/		
/ɔ/	/tɔl ɔ̌ɛdow/	‘to delay’
	/dɔ̌ð/	‘complain’
/ɑ/	/tal ɔ̌ɛdow/	‘to stack’
	/dǎð/	‘they (med)’

/ɛ/, /u/, /e/, and /ɑ/		
/u/	/sur/	‘wedding’
/ɑ/	/sar/	‘tomorrow’
/ɛ/	/sɛr/	‘pile of wheat’
/e/	/ser/	‘full’

/i/, /ɔ/, /ø/		
/i/	/çid͡z/	‘ox’
/ɔ/	/çɔd͡z/	‘fear’
/ø/	/çød͡z/	‘weed’

/u/, /ʊ/, /ø/, /e/		
/u/	/bun/	‘handful of flour’

/ɔ/	/bɔn/	‘base’
/ø/	/bøɲ/	‘beard’
/e/	/ben/	‘palm’
/ɔ/ and /ɔ̃/		
/ɔ/	/pɔ̃ts/	‘son’
/ɔ̃/	/pɔ̃ts/	‘communal shepherding’
/u/ and /ɔ/		
u	/xud/	‘ate’
ɔ	/xod/	‘self’ (D. loan)
	/kud/	‘dog’
/i/ and /ɪ/		
/i/	/vidɔw/	‘to bring’
/ɪ/	/vidɔw/	‘to be’
/ɑ/ and /ɛ/		
/ɑ/	/wɑð/	‘they’
/ɛ/	/wɛð/	‘ditch’

2.2.4 Vowel harmony

There does not appear to be evidence of vowel harmony in Shughni.

2.2.5 Vowel sequences

At first glance, Shughni does appear to allow some vowel sequences (or vowel glides).

They include the following⁵:

/ai/	/fai/	‘paddle’
/ai/	/nai/	‘no’
/ɔi/	/çɔi/	‘rocks’
/ei/	/pei.ˈdow/	‘to pasture’
/øi/	/røi/	‘grow’
/ui/	/tuid/	‘left (past)’
/au/	/da.ˈrau/	‘during’
/ɔu/	/tsɪ.ˈrɔu/	‘lamp’
/iu/	/ʒiudʒ/	‘like’
/eu/ ⁶	/ðeu/	‘mythical being’

⁵ Thanks to Nawrooz Ali Sabiti (2012) for providing the examples.

Upon examination of these examples, however, it is clear that all of them occur with the vowels /i/ or /u/, which could just as easily be transcribed as the semivowels /j/ and /w/. If analyzed in this way, then Shughni does not allow vowel glides.

Edelman and Dodykhudoeva write, “The trend toward monophthongization is well-developed and affects old, inherited, and recent loans, such as *nawbat* > *nowbat* > *nūbat* ‘(one’s) turn’.”⁷ There is dialectal variation in this pattern. In the Roshani dialect, for example, there are more diphthongs, such as in the following example:

Shughni	Roshani	Gloss
/jɔjɔ̃dʒ/	/jawjɔ̃dʒ/	‘flour’

2.2.6 Vowel modifications

2.2.6.1 Length

Only three of the ten Shughni vowels can be considered phonetically short. Edelman and Dodykhudoeva (2009) group the short vowels with long ones as follows to contrast their quantitative characteristics:

/a/ with /ɑ/

/ɪ/ with /ɛ/, /e/, and /i/

/ʊ/ with /u/, /ɔ/, and /ø/

Edelman and Dodykhudoeva write “In general, long vowels are rather stable and the degree of variation is rather low” in contrast to the short vowels, which undergo wide allophonic variation corresponding in quality to their longer counterparts⁸.

Word-finally, however, the long vowels are less stable. For example, the longer counterparts of /ɪ/ do not occur word-finally (except in certain loans—see examples in 2.2.2). In most loan words from Dari, long vowels are shortened word-finally:

⁶ Sabiti treats this as a triphthong, [e^hu]. While this is probably correct phonetically, I am treating [e^h] as a single phoneme, /e/.

⁷ “Shughni” by E. (Joy) I. Edelman and Leila R. Dodykhudoeva, published in *The Iranian Languages* in 2009, page 789.

⁸ “Shughni” by E. (Joy) I. Edelman and Leila R. Dodykhudoeva, published in *The Iranian Languages* in 2009, page 789.

Dari word	Shughni word	Gloss
[zm.da.'gi:]	[zm.da.'gɛ]	'life'
[ni.'li:]	[ni.'lɛ]	'blue'

Similarly, verb roots may get truncated resulting in shortening of the vowel.

Verb root:	Imperative form:	Gloss:
/tij-/	[tɛ]	'go'

(Edelman and Dodykhudoeva also make note of this process.)

Similarly, the long vowel, /u/, as noted in 2.2.2 is also only found word-finally in loan words and onomatopoeic words. The usual pattern for loan words from Dari that end in /u/ is to shorten these vowels, thus:

Dari		Shughni	
[tu]	'you'	[tʊ]	'you'

In contrast to this shortening process, when Shughni borrows words from Dari that end in /a/, the final vowel gets lengthened to /a/. See the following examples:

Dari:	Shughni:	Gloss:
[dala]	[dɔla:]	'trunk of car'
[qisa]	[qisa:]	'story'
[arasta]	[ɔrɔrsta:]	'decorated'

This final /a/ seems to be the archetype phoneme for most Shughni content words. However, in phrases, the length is dropped, as shown here:

[garðɑ:]	'bread'
[garðɑ parðɑ:ðidʒ]	'bread-seller'
[axta:]	'castrate'
[axta ɕidʒ]	'castrated bull'

In other words this vowel loses its length as a result of truncation of a verb root:

Verb Root:	Imperative Form:	Gloss:
[va:r]	[va]	'bring'
[sa:w]	[sa]	'go'
[ja:d]	[ja]	'come'

Edelman and Dodykhudoeva write: “2a) Long *ā* in final pre-pausal position serves as an archetype phoneme for both *a* and *ā*: *garḏa-y-um zoxt* ‘I took a flat bread’ but *garḏā* ‘flat bread.’ 2b) In turn, short *a* may appear in final position as the result of truncation: *sāw* > *sa*, *a yiḏā* > *aḏa* ‘address to a young man’.”⁹ In other words, /a/ can be realized as [a] and [ɑ] (but /a/ never realizes as [ɑ]).

Besides these instances resulting from a shortening process, the short vowel /a/ is only found word-finally in functor words and suffixes such as the following:

-/ga/	‘also’
/tsa/	‘conditional clause marker’
/ta/	‘fut. disc. part.’
/tama/	‘you pl.’
/ji da/	‘here you go!’

The vowel pair /ɑ/ and /a/ only contrasts word-finally when you take into account integral Dari loans:

/a/	/a. ¹ ga/	‘if’ (modification of Dari /agar/)
	/ba/	‘to’ (Dari)
/ɑ/	/a. ¹ ga/	‘awake’
	/ba/	‘kiss’

2.2.6.2 Rounding

The phoneme /ɔ/, while phonetically round, is a counterpart to the Dari phoneme /ɑ/ which is not round. In loan words from Dari in which this phoneme occurs, the vowel gets rounded. See the following examples:

Dari	Shughni	Gloss
[dar. ¹ ja]	[dar. ¹ jɔ]	‘river’
[pad. ¹ fa]	[pɔt. ¹ ɕɔ]	‘king’

⁹ “Shughni” by E. (Joy) I. Edelman and Leila R. Dodykhudoeva, published in *The Iranian Languages* in 2009, page 789.

2.2.6.3 Pre-Nasal Raising

Edelman and Dodykhudoeva describe a process they call ‘prenasal raising’ in which “the long mid-high phonemes are raised before nasal to the next level of narrowness”.¹⁰ That is, /ɛ/ to /e/ to /i/, and /ɔ/ to /ø/ to /u/.

In support of this theory, I see a conspicuous lack of /ɛ/ and /ɔ/ before the nasal. I also see evidence of one of these vowels undergoing this process: the Dari phoneme /a/ (Shughni phoneme /ɔ/) changes to /ø/ before a nasal in loan words that are borrowed from Dari.

Dari	Shughni	Gloss
/nam/	/nøm/	‘name’
/sa.'lam/	/sa.'løm/	‘hello (peace)’

However, there is a lot of dialectal variation with regards to this process. For example, the word for ‘sky’ in Roshani (and Dari) is /ɔsmøn/ while in Shughni it can be either /ɔsmøn/ or /ɔsmun/ depending on which village the speaker is from. Similarly, ‘guest’ is /memøn/ in Roshani and /memøn/ or /memun/ in Shughni.

2.2.7 Phonetic realizations of vowels

A number of other processes also occur to produce the phonetic realizations of Shughni vowels. These slight changes of vowel quality are undetected by speakers.

Vowel Reduction: long vowels may lose some of their phonetic length in unstressed syllables.

Centralization: The short vowel /a/ may centralize in unstressed syllables.

Lowering: The short vowel /ɪ/ lowers to [ɛ] in stressed open syllables. For example, the verb ‘to do’ has the root /km/, but the imperative form becomes [kɛ] through truncation.

Rounding: the short front vowel /ɪ/ rounds slightly (to [ɨ]) before /w/.

¹⁰ Ibid.

Tenseness: The vowel /ɔ/ becomes + tense ([o]) in unstressed syllables.

The following chart shows the phonetic realizations of vowels in open and closed syllables (stressed as well as unstressed):

Phonetic realizations of vowels in Shughni

vowel	phonetic realization	open syllable, stressed	open syllable, unstressed	closed syllable, stressed	closed syllable, unstressed	other realizations
i	[i:]	di: 'village' (loan)	?	^l xir 'sun'	?	?
	[i]	?	pi. ^l ɑ: 'silk'	?	xir. ^l ɑ: 'bright'	?
	[ɛ]	tɛ 'go'				
e	[e]	ɕum. ^l ne 'tomorrow',	me. ^l møn 'guest'	^l ðed 'rain'	lel. ^l gov 'dirty water'	?
ɪ	[ɛ]	dr ^l vɛ 'door' kɛ 'do'	^l am.re 'command' (D. /amr/)	?	?	?
	[ɪ]	?	ni. ^l bos 'grandchild',	^l xist 'wet'	bis. ^l par 'kick'	?
	[i]	?	?	?	?	ni ^l wents 'bride'
ɛ	[ɛ:]	?	?	ki. ^l serptʃ	per ^l nak	?

				‘basket’	‘heel’	
u	[u]	mu ‘me’	mu.ˈdøm ‘forever’	ṭʃust ‘locked’	ʔur.ˈsuq ‘kind of pastry’	?
	[ə]	?	?	?	ˈkm.əm ‘do.1sg’	?
u	[u]	?	ku.ˈta: ‘room’	?	buj.ˈdɔq ‘mature male’	?
	[u:]	ku: ‘mountain ,	?	mum ‘apple’	?	?
ɔ	[ɔ]	tɔ ‘until’	?	bɔb ‘grandfather ,		?
	[o]	?	koˈtʃɔr ‘things’	?	poç.ˈna ‘heel’	?
a	[a]	ta ‘discourse particle’	ʔaˈga ‘awake’	bat ‘bosom’	ʔan.ˈbur ‘snippers’	?
ɑ:	[ɑ:]	faˈ.nɑ: ‘plenty’ ˈlaː.tok ‘mustard’	?	nam ‘mother’	?	?
	[ɑ]		ˈjɪ.lav ‘some’ (affixed)		kəl.ˈviɟdz ‘pillow’ (compound)	
	[a]	sa ‘go’	?	?		?
ø	[ø]	lø ‘say’	bø.ˈna: ‘excuse’	maj.ˈdzønd 3 ‘hungry’	ˈtar.ød ‘here’	?

2.3 Syllables

The following syllables occur in Shughni:

syllable	example	
V	/ø/	‘hey’
VC	/at/	‘and’
CV	/tu/	‘you’
VCC	/arz/	‘suggestion’
CVC	/ʒiz/	‘wood’
CVCC	/vordʒ/	‘horse’
CVCCC	/ʃarθk/	‘mud’

The minimal syllable shape for normal words (nouns, verbs, etc.) is V (though this is not common). Next to this the minimal pattern is CV or VC (see the first two examples above). Because of Shughni’s propensity for monophthongization, I am treating the long vowels as a single vowel segment.

2.3.1 Syllable distribution

All of the syllable shapes listed above may stand alone as words.

The syllable pattern VCC was not found in the first syllable of a word with more than one syllable. However, all the other patterns were found:

V	/a.ɡɑ/	‘awake’
VC	/am.ˈbaʧts/	‘incense’
CV	/ka.ˈxɔj/	‘woman/girl’
CVC	/kax.we.ˈdʒak/	‘tangled’
CVCC	/qondʒ.ˈya/	‘load on the back of a saddle’

The following syllable shapes may be found in the middle of words with more than syllable:

CV	/ka.ta.ˈnak/	‘elder’
----	--------------	---------

CVC	/,shɪ.niz.'gak/	‘head-cold’
CVCC	/,ar.ðɪçts.'tow/	‘to dream’

The following syllable shapes may be found as the final syllable in words with more than one syllable:

CV	/dɪ.'vɪ/	‘door’
CVC	/tar.'man/	‘glacier’
CVCC	/tsɪ.'rafts/	‘stings’
CVCCC	/an.dʒafst/	‘stick.3s’

In summary, Shughni allows complex syllable codas syllable-finally, though these codas are more rare non-word-finally. When suffixes are added to a complex coda or a word with a complex coda is compounded, deletion may occur:

Complex coda:		
vdz	/savdz/	‘green’
çt	/tʃɔçt/	‘load’
Adding of suffix or compounding:		
v	/sav.'za/	‘greenery’
ç	/tʃɔç.'wiz/	‘load carrier’

Syllable nuclei may be long or short. Onsets must be a single consonant (or single vowel word-initially). They must not be a consonant cluster.

2.3.2 Syllables in words

Monomorphemic (simple) words may have up to three syllables. Examples of monomorphemic words with one, two, and three syllables are as follows:

1	/nan/	‘mother’
2	/gar.'ðɑ/	‘bread’
3	/pɪ.tʃɪ.'rɔçt/	‘punishes’

2.4 Prosodic phenomena

2.4.1 Stress

Stress does not appear to be contrastive in Shughni.

Stress is usually signalled by raised pitch and increased loudness. Usually lengthened vowels also appear in stressed syllables, though short vowels can also be stressed and phonetically long vowels occasionally do occur in unstressed syllables (see 2.2.6 above).

Usually the ultimate syllable of a two-syllable word is stressed, such as in the following examples:

/çum. ^ˈ ne/	‘tomorrow’
/gar. ^ˈ ðɑ/	‘bread’

In a three-syllable word, the ultimate syllable receives primary stress and the first syllable receives secondary stress:

/ka.ta. ^ˈ nak/	‘elder’
/pɪ.tʃɪ. ^ˈ røçt/	‘punishes’

In a four-syllable word (with suffixes or prefixes), the same pattern still occurs:

/pɪ.tʃɪ.røç. ^ˈ tow/	‘to punish’
/ba.dan.ga. ^ˈ rɪ/	‘ugly’
/be.xɪ.nu. ^ˈ rɪ/	‘mischievous’

With negative prefixes **na-** and **ma-**, the stress is on the prefix rather than the ultimate syllable:

/na.səd/	‘it doesn’t work’
/tʃas. ^ˈ tøn ^ˈ ma:tʃas. ^ˈ tøn/	‘riddle not a riddle’ (formulaic expression beginning riddles)



Some suffixes are stressed in Shughni while others remain unstressed. See section 3 on morphophonemic processes for a fuller list of affixes and their stress patterns.

A few words do not follow the regular stress patterns. Perhaps the stress pattern in these words is motivated by the long vowel, such as the following:

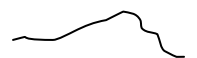
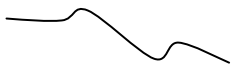

/ʼa.raj/	‘three’
/ʼna.la/	‘said
/ʼla.tək/	‘mustard’

2.4.2 Intonation



Declarative sentences have a slowly rising and immediately falling intonation in Shughni.

	
jo tʃorɪk tujd.	‘The man went.’
the man go.pst	
	
masham lap qin vad.	‘We were very sad.’
we very sad were	

Imperative sentences have a similar structure, though the peak may be closer toward the beginning of the utterance.

	
dɪska mak	‘Don’t do that.’
that don’t do	
	
wɪ kuta sɔfi kɪ	‘Dust that room.’
that room dust do	
	
divɪ xamben.	‘Close the door.’
door close	

Content questions begin high and then fall during the utterance.

	
ka dʒa sawɪ?	‘Where are you going?’
where place you.go	
	
tʃɔj dɪska lɔd?	‘Who said this?’

who like.this said

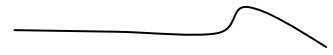
Yes/no questions (marked by the suffix -ə) have peak at the verb and then drop at the question marker:



tarəd mɪs kər kɪn-ɛj-ə?

here also work do-you-ques.mark

‘Do you also work here?’




kərɪ xənagɪ-jat tʃʊd-ə?

work home-2s did-ques.mark

‘Did you do your homework?’

The intonation peak may move around to emphasize a different element of the utterance, or there may be a secondary peak. As shown above a regular question looks like this:



tarəd mɪs kər kɪn-ɛj-ə?

here also work do-you-ques.mark

‘Do you also work here?’

If the subject ‘she’ is put in focus the pattern looks like this:



ja ta tarəd mɪs kər kɪt-ə?

she disc here too work do-ques.mark

‘Does *she* work here too?’

If the emphasis is on the place where she works (perhaps she has a second job), the peak is on ‘here’:



ja ta tarəd mɪs kər kɪt-ə?

she disc here too work do-ques.mark

‘Does she work *here* too?’

3 Morphophonemic processes

In this section, morphophonemic changes which have been observed in Shughni are described. The analysis is based on the processes that occur when morphemes come together, and especially when affixes are attached to stems.

3.1 Shughni Affixes

The following prefixes are found in Shughni:

Prefix	Gloss	Stress	Attaches to:
na-	‘(negative)’	stressed	verb
ma-	‘(negative imperative)’	stressed	verb
be-	‘(without)’	unstressed	noun

The following suffixes are found in Shughni:

-and	‘(dative)’	unstressed	noun or pronoun
-ard	‘(accusative)’	unstressed	noun or pronoun
-aθ	‘(adverbializer)’	unstressed	adjective
-i	‘(2.s.pres)’	unstressed	verb
-um	‘(1.s.pres)’	unstressed	verb
-d	‘(3.s.pres)’	unstressed	verb
-en	‘(3.pl.pres)’	unstressed	verb
-am	‘(1.pl.pres)’	unstressed	verb
-et	‘(2.pl.pres)’	unstressed	verb
-ak	‘(diminutive)’	stressed	noun
-a.ke	‘(superlative)’	stressed	adjective
-dow	‘(infinitive)’	stressed	verb
-d₃/t_j	‘(masculine perfect)’	(not a syllable)	verb
-ts	‘(feminine perfect)’	(not a syllable)	verb
-t_jm	‘(masculine participializer)’	stressed	verb
-tsm	‘(feminine participializer)’	stressed	verb
-di	‘(comparative)’	stressed	adjective
-gir	‘(taking)’	stressed	noun
-ga	‘also’	unstressed	noun/pronoun

-en	‘(plural)’	stressed	noun
-en ¹¹	‘(causative)’	stressed	verb
-a	‘(nominalizer)’	stressed	adjective

The following bound adpositions can attach to a wide variety of grammatical categories:

Locational adpositions:

ar-	‘(loc.down)’	unstressed	adjective, noun, pronoun
pi-	‘(loc.up)’	unstressed	adjective, noun, pronoun
tar-	‘(loc.across)’	unstressed	adjective, noun, pronoun
-ad̪ɜ̌	‘(toward)’	stressed	adjective, noun, pronoun
-ets̪	‘(to/at)’	unstressed	adjective, noun, pronoun

In the past tense the same personal suffixes are used as in the present tense but they attach to any word category, so can be analyzed as clitics:

-i	‘(3.s.past)’	unstressed	any category
-at	‘(2.s.past)’	unstressed	any category
-um	‘(1.s.m)’	unstressed	any category
-am	‘(1.s.f/1.pl)’	unstressed	any category
-en	‘(3.pl.past)’	unstressed	any category
-et	‘(2.pl.past/imp)’	unstressed	any category

Discourse clitic:

-at	‘(and)’	unstressed	any category
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3.2 Morphophonemic Processes

3.2.1 Assimilation

Voicing assimilation occurs when some affixes attach. See these examples of verbs, in which the suffix assimilates the voicing of the final consonant of the root:

Stem	Infinitive (–dow)	Gloss
firip	/firip-tow/	‘to arrive’
nɛθ	/niθ-tow/	‘to sit’

¹¹ This suffix may take another suffix after it but appears after the root. Therefore it cannot be defined as an infix. (See discussion of infixes, Payne, *Exploring Lanugage Structure*, 40-41).

nεð	/nεð-dow/	‘to plant’
rif	/rif-təw/	‘to bother’
riv	/riv-dəw/	‘calf to nurse when the cow should be milked’

Similarly, when the perfect suffix is added to the past root of a verb, the suffix assimilates the voicing of the root:

red	/reð-dʒm/	‘left.perf’
jat	/jaθ-tʃm/	‘came.perf’

Not all suffixes follow this pattern however: for example, the suffix /ga/ remains voiced when followed by voiceless consonants.

/dɪs.ga/	‘like this’
/atʃ.ga/	‘no more’

Continuancy Assimilation (Fricativization): Some verbs with suffixes also demonstrate continuancy assimilation. This is most clearly seen in the perfect and participle forms. For example, the past tense stem of ‘to hear’ is /çɔd/. When the perfect suffix -dʒ and the participle suffix -dʒɪn are added, the final consonant of the stem changes to become +continuant. The past tense stem of ‘to hit’, /ðɔd/, acts in a similar manner.

Stem	Gloss	Perfect	Participle
/çɔd/	‘heard’	çɔð-dʒ	çɔð-dʒɪn
/ðɔd/	‘hit’	ðɔð-dʒ	ðɔð-dʒɪn

3.3 Deletion

Many examples of deletion occur in Shughni when suffixes are added to words.

The clitic **–at** ‘and’ can stand on its own at the beginning of an utterance. It also combines with a number of words. With a C-final stem, it retains its original form. With a V-final stem, deletion can occur.

With C-final stem:

/wuz at tu/ → /wuz at tu/	‘I and you’
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Deletion (and coalescence) with V-final stem:

/mu at tu/ → /mɔ:tu/	‘me and you’
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Here are other examples of vowel deletion:

Example	Gloss	Morphophonemic Process
tɔjd + at → tɔjdat	‘went.2s.past’	—
tʊ.t azam jaθ.t̪f.ɔ		
you-2s.past from.there come-perf-interr		
‘Have you come from there?’		
tʊ + at → tʊt	‘you.2s.past’	deletion
wev + -and → wevand	‘them.dative’	--
wɪ + -and → wmd	‘him.dative’	deletion
wev + -ard → wevard	‘them.genitive’	--
wɪ + -ard → wɪrd	‘him.genitive’	deletion
ðʊ + arɔj → ðɔrai	‘two.three’	deletion and coalescence
dij + um → dim	‘I hit’	deletion

Occasionally an entire syllable may be deleted. In the following examples, deletion may or may not occur; it seems to occur more often in rapid speech and less often in formal, slow speech:

an.d̪ʒav + -et →	an.d̪ʒav-et	/ an.d̪ʒ-et	‘grasp.2pl’	optional deletion
saw + -et →	saw.et / set		‘go.2pl’	optional deletion

3.4 Insertion

When a stressed V-final prefix attaches to a V-initial stem, no phonological process seems to occur. This is likely because both the stressed prefix and the onset of the stem are in strong positions:

Prefix	Imperative Root	Combined	Gloss	Morphophonemic Process
mɑ-	andɪd̪z	'mɑ:.andɪd̪z	‘neg.stand’	--
mɑ-	and̪ʒa	'mɑ:.and̪ʒa	‘neg.grasp’	--

However, when a V-initial suffix attaches to a V-final stem, the semivowel /j/ is inserted to strengthen the onset of the syllable.

Stem	Suffix	Combined	Gloss	Morphophonemic Process
Faisal	-ɪ	Faisal-ɪ	‘Faisal.past’	--
jo	-ɪ	jo-je	‘he.3s’	insertion
tama	-et	tama-jet	‘you(pl).2pl’	insertion
yula	-ake	yula-jake	‘big.superlative’	insertion

In some verbs, both deletion and insertion happen when various suffixes are added. See the following example of the verb **ðe:dow** ‘to hit’ when the present tense personal suffixes are added:

Stem	Suffix	With suffix	Gloss	Morphophonemic Process
di	-um	di-m	‘hit.1s’	deletion
di	-e	di-je	‘hit.2s’	insertion
di	-d	ði-d	‘hit.3s’	stem change
di	-am	di-jam	‘hit.1pl’	insertion
di	-et	di-jet	‘hit.2pl’	insertion
di	-en	di-jen	‘hit.3pl’	insertion

Both processes, insertion and deletion, also happen when the clitic **at** is added to a V-final stem:

buq + at + biling	→ buqat biling	‘bumpy and rough’	--
dunjo + at + ɔxɪr	→ dunjo-jat ɔxɪr	‘the world and the end’	insertion
mu + at + tu	→ motu → motu	‘me and you’	deletion

To account for the changes in all the examples above, the insertion rule needs to apply first, and the deletion rule second.

3.5 Pre-consonantal Contraction

In a verb root that ends with a semivowel, the vowel contracts with the semi-vowel when a consonant is affixed. This can be seen with the 3s suffix in the verb paradigm below:

[θaw-um]	‘burn.1s’
[θaw-ɛ]	‘burn.2s’

[θø-d]	‘burn.3s’
[θaw-am]	‘burn.1pl’
[θaw-et]	‘burn.2pl’
[θaw-en]	‘burn.3pl’

A similar sort of contraction occurs when **–at**, the ‘and’ clitic or the 2s suffix, is added to a word that ends in a vowel. The two short vowels [ɐ] and [a] combine to form the phonetically long vowel [ɛ:] before the consonant /t/.

[ðað-ɐ] + [at] → [ðaðɛ:t]	‘hit-2s.and’
[rɪtsiθ-ɐ] + [at] → [rɪtsiθɛ:t]	‘escape-2s.and’
[xuʃ-ɐ] + [at] → [xuʃɛ:t]	‘happiness.and’
[nɔ-fam-ɐ] + [at] → [nɔfamɛ:t]	‘neg.understanding.and’

4 Other processes

Metathesis occurs in some words borrowed from Dari. See the following examples:

Dari	Shughni	Gloss
/bax.ʃɪʃ/	/baç.xɪç/	‘gift/forgive’
/ba.dax.ʃɒn/	/ba.daç.xɒn/	‘Badakshan’

In these examples, the palatal-alveolar /ʃ/ is changed to the palatal /ç/. Then, the uvular /x/ is metathesized with this sound. Shughni does not allow the xç consonant cluster.

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