

Highly complex syllable structure

A typological and diachronic study

Shelece Easterday

Studies in Laboratory Phonology





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For Elise, Ada, Astrid, and Maria:

May you always be curious!

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Finally, to my family: thank you for everything.

Abbreviations

1	first person
3	third person
AGT	agentive
CAUS	causative
CL	noun class
CONT.P	past continuous
DAT	dative
DEM	demonstrative
DUB	dubitive
F	feminine
FUT	future
INCL	inclusive
INF	infinitive
INTERROG	interrogative
ITER	iterative
M	masculine
NMLZ	nominalizer
NOM	nominative
PL	plural
POSS	possessive
PS	predicate specifier
PST	past
REALIS	realis
RECP	reciprocal
REFL	reflexive
REL	relativizer
SG	singular
RNS	translated from the original by Ricardo Napoleão de Souza
SME	translated from the original by Shelece Easterday
TZ	translated from the original by Tim Zingler

0.0.1 Appendix A: Language sample

Information on the language sample used in the study is listed in Tables A1-A4.

KEY TO READING TABLE:

ISO 693-3: ISO 693-3 code for language used in survey.

Language: Dialect is given in parentheses where relevant.

Syllable Structure:

S = Simple

MC = Moderately Complex

C = Complex

HC = Highly Complex

Macro-area: Following Dryer (1989: 268; 1992: 83, 133-5).

Africa = continent of Africa, including Semitic languages of southwest Asia.

Australia & New Guinea = Australian continent and Melanesia, excluding Austronesian languages of Melanesia.

Eurasia = Eurasian landmass, excluding Semitic and languages from families of southeast Asia as defined below, and including the Munda languages of Austro-Asiatic.

North America = North American continent, including languages of Mexico, Mayan and Aztec languages in Central America, and some branches of Chibchan-Paezan.

South America = South American continent, including languages of Central America except Mayan and Aztec languages, and some Chibchan-Paezan branches.

Southeast Asia & Oceania = Southeast Asian region, including all Sino-Tibetan, Tai-Kadai, Hmong-Mien, and Austro-Asiatic languages excluding Munda, and Oceania region (Austronesian languages).

Top-level family and Subfamily: Following genealogical classifications listed in Glottolog 3.3 (Hammarström et al. 2018).

Speaker Population: L1 speaker population figure for language (or specific dialect) given in Ethnologue 21 (Simons & Fennig 2018). An asterisk indicates that another source was used for population estimate; these can be found beneath the table.

Date: Date given in Ethnologue 21 (Simons & Fennig 2018) for speaker population figure.

Vitality Status: Following Ethnologue 21 (Simons & Fennig 2018).

Institutional = language has wide use in the home and community and official status at educational, provincial, national, and/or international levels.

Abbreviations

Developing = language is used in the home, community, and sometimes broader contexts, and in initial stages of developing a system of writing and standardization.

Vigorous = language is used in the home and community by speakers of all generations, but has not yet developed a system of graphization or standardization.

In Trouble = language is currently in the process of losing intergenerational transmission, with the community shifting to other languages for daily use, but there are still speakers of child-bearing age.

Dying = language has lost intergenerational transmission entirely, and all fluent speakers are above child-bearing age.

ISO 639-3	Language	Syllable Structure	Macro-area	Top-level family	Subfamily	Speaker Population	Date	Vitality Status
hts	Hadza	S	Africa	(isolate)		950	2013	In Trouble
grj	Southern Grebo	S	Africa	Atlantic-Congo	Volta-Congo	65,000	2012	Vigorous
yor	Yoruba	S	Africa	Atlantic-Congo	Volta-Congo	19,043,700	1993	Institutional
mhi	Ma'di	S	Africa	Central Sudanic	Moru-Madi	293,000	2014	Developing
bbo	Southern Bobo Madaré	S	Africa	Mande	Western Mande	181,000	2009	Developing
svs	Savosavo	S	Aus & New Guinea	(isolate)		2,420	1999	Vigorous
kbk	Grass Koiari	S	Aus & New Guinea	Koiarian	Koiaric	1,700	2000	Vigorous
roo	Rotokas	S	Aus & New Guinea	North Bougainville	Rotokas-Allekan	4,320	1981	Developing
kjs	East Kewa	S	Aus & New Guinea	Nuclear Trans New Guinea	Enga-Kewa-Huli	45,000	2000	Developing
tow	Towa	S	N America	Kiowa-Tanoan		1,790	2007	In Trouble
mio	Pinotepa Mixtec	S	N America	Otomanguean	Eastern Otomanguean	20,000	1990	Vigorous
ute	Ute	S	N America	Uto-Aztec	Northern Uto-Aztec	920	2007	In Trouble
ura	Urarina	S	S America	(isolate)		3,000	2002	Developing
wba	Warao	S	S America	(isolate)		28,100	2007	Vigorous

Abbreviations

Table A1. Portion of language sample with Simple syllable structure.

ISO 639-3	Language	Syllable Structure	Macro-area	Top-level family	Subfamily	Speaker Population	Date	Vitality Status
ktb	Kamba	MC	Africa	Afro-Asiatic	<i>Cushitic</i>	743,000	2007	Institutional
ewe	Ewe	MC	Africa	Atlantic-Volta-Congo	<i>Congo</i>	4,184,000	2013	Institutional
fvr	Fur	MC	Africa	Furan		745,800	2004	Developing
knc	Kanuri	MC	Africa	Saharan	<i>Western Saharan</i>	3,290,500	1985	Institutional
ayz	Maybrat	MC	Aus & New Guinea	Maybrat-Karon		20,000	1987	Developing
kms	Kamasau	MC	Aus & New Guinea	Nuclear Torricelli	<i>Marienberg</i>	960	2003	In Trouble
spl	Selepet	MC	Aus & New Guinea	Nuclear Trans New Guinea	<i>Finisterre-Huon</i>	7,000	1988	Developing
aly	Alyawar	MC	Aus & New Guinea	Pama-Nyungan	<i>Arandic-Thura-Yura</i>	1,660	2006	Developing
khr	Kharia	MC	Eurasia	Austroasiatic	<i>Mundaic</i>	241,580	2001	Developing
tel	Telugu	MC	Eurasia	Dravidian	<i>South Dra-vidian</i>	74,244,300	2001	Institutional
dry	Darai	MC	Eurasia	Indo-European	<i>Indo-Iranian</i>	11,700	2011	In Trouble
mjg	Tu	MC	Eurasia	Mongolic	<i>Southern Pe-riph-ery Mon-golic</i>	152,000	2000	In Trouble
kca	Eastern Khanty	MC	Eurasia	Uralic	<i>Khantyic</i>	2,000	2007	In Trouble
kyh	Karok	MC	N America	(isolate)		12	2007	Dying ⁵

Abbreviations

Table A2. Portion of language sample with Moderately Complex syllable structure.

ISO 639-3	Language	Syllable Structure	Macro-area	Top-level family	Subfamily	Speaker Population	Date	Vitality Status
mpi	Mpade (Makari dialect)	C	Africa	Afro-Asiatic	Chadic	16,000	2004	In Trouble
dyo	Jola-Fonyi	C	Africa	Atlantic-Congo	North-Central Atlantic	397,100	(no date)	Developing
lun	Lunda	C	Africa	Atlantic-Congo	Volta-Congo	403,000	2010	Institutional
mdx	Dizin (Central dialect)	C	Africa	Dizoid		33,900	2010	Institutional
tbi	Gaam	C	Africa	Eastern Jebel		67,200	2000	Vigorous
mpc	Mangarrayi	C	Aus & New Guinea	Mangarrayi-Maran		12	2006	Dying
nir	Nimboran	C	Aus & New Guinea	Nimboranic		2,000	1987	Dying
opm	Oksapmin	C	Aus & New Guinea	Nuclear Trans New Guinea	Asman-Awyu-Ok	8,000	1991	Developing
bcj	Bardi	C	Aus & New Guinea	Nyulnyulan	Western Nyulnyulan	160	2006	Dying
ung	Ngarinyin	C	Aus & New Guinea	Worroran		57	2006	In Trouble
bsk	Burushaski	C	Eurasia	(isolate)		96,800	2004	Vigorous
eus	Basque	C	Eurasia	(isolate)		545,800	2012	Institutional
niv	Nivkh (West Sakhalin dialect)	C	Eurasia	(isolate)		15*	2014	Dying

Abbreviations

Table A3. Portion of language sample with Complex syllable structure.

ISO 639-3	Language	Syllable Structure	Macro-area	Top-level family	Subfamily	Speaker Population	Date	Vitality Status
shi	Tashlhiyt	HC	Africa	Afro-Asiatic	<i>Berber</i>	3,896,000	2004	Developing
dow	Doyayo	HC	Africa	Atlantic-Congo	<i>Volta-Congo</i>	18,000	1985	Developing
bcq	Bench	HC	Africa	Ta-Ne-Omoti		348,000	2007	Institutional
mcr	Menya	HC	Aus & New Guinea	Angan	<i>Nuclear Angan</i>	20,000	1998	Developing
kjn	Kunjen	HC	Aus & New Guinea	Pama-Nyungan	<i>Paman</i>	20	1991	Dying
amp	Alamblak	HC	Aus & New Guinea	Sepik	<i>Sepik Hill</i>	1,530	2000	Developing
wut	Wutung	HC	Aus & New Guinea	Sko	<i>Nuclear Skou-Serra-Piore</i>	900	2003	Vigorous
kbd	Kabardian	HC	Eurasia	Abkhaz-Adyge	<i>Circassian</i>	1,628,500	2010	Developing
itl	Itelmen	HC	Eurasia	Chukotko-Kamchatkan		80	2010	Dying
als	Albanian (Tosk dialect)	HC	Eurasia	Indo-European	<i>Albanian</i>	1,841,400	2012	Institutional
pol	Polish	HC	Eurasia	Indo-European	<i>Balto-Slavic</i>	40,248,742	2013	Institutional
kat	Georgian	HC	Eurasia	Kartvelian	<i>Georgian Zan</i>	4,347,320	1993	Institutional
lez	Lezgian	HC	Eurasia	Nakh-Daghestanian	<i>Daghestanian</i>	616,760	2010	Institutional
pqm	Passamaquoddy-Maliseet	HC	North America	Algonquian	<i>Algonquian</i>	590	2011	In Trouble
coc	Cocopa	HC	North America	Cochimi-Yuman	<i>Yuman</i>	350	1998	In Trouble

Abbreviations

Table A4. Portion of language sample with Highly Complex syllable structure.

* Population figure from [Botma & Shiraishi \(2014\)](#) .

** Population figure from [Hargus & Beavert \(2006\)](#) .

*** Population figure from *aoNEK FILMS* (??), includes semi-speakers.

0.0.2 Appendix B: Data

This appendix contains the coded data used for the various studies in the book. The languages are listed alphabetically by ISO 639-3 code.

[alc] QAWASQAR Kawesqar, *North Central Alacalufan* (Chile)
References consulted: ViegasBarros1990; Aguilera (2001); Clairis (1977 ; 1985)
)
Sound inventory
C phoneme inventory: /p p^h p' t t^h t' q q^h q' f s f x h m n l r w j/
N consonant phonemes: 21
Geminates: N/A
Voicing contrasts: None
Places: Bilabial, Alveolar, Velar, Uvular, Glottal
Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant
Elaborations: Post-aspiration, Ejective, Uvular
N elaborations: 3
N elaborated consonants: 11
V phoneme inventory: /e a o/
N vowel qualities: 3
Diphthongs or vowel sequences: Diphthongs /aw ow/
Contrastive length: None
Contrastive nasalization: None
Other contrasts: N/A
Notes: Clairis gives minimal pairs for /p^h t^h/, gives /q' q^h/ but not /k k'/. /e o/ vary quite widely. /e/ is [ə] 65.9% of the time word-medially. Clairis and Viegas Barros both consider glides and high vowels to be in complementary distribution, but have chosen glides as lexical representation.
Syllable structure
Complexity Category: Highly Complex
Canonical syllable structure: (C)(C)(C)(C)V(C)(C)(C) (Clairis 1985 : 391-401)
Size of maximal onset: 4
Size of maximal coda: 3
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels, Diphthongs
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset), Both patterns (Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants except /r/ occur in simple onsets. In biconsonantal onsets, C₁ may be /f q q' s t/ and C₂ may be /tʃ s t t' j w q/. Triconsonantal onsets have same restrictions for C₁; include /qsq, qst, sqw/. Example given of four-consonant onset is /qsqj/.

Coda restrictions: /f j l m n r s w/ do not appear in simple codas. In biconsonantal codas, C₁ is /f j l m n p q r t w s/ and C₂ is /s q/. Triconsonantal codas include /lqs, rqs, qsq/.

Notes: Clairis notes that large clusters are “unstable in rapid speech”, e.g. *qsqar* > *sqar*, ‘urine’ but that rapid speech can also produce clusters, e.g., future marker *seqwe* > *sqwe* (1985: 393).

Suprasegmentals

Tone: No

Word stress: Disagreement (Clairis 1977 claims stress, Clairis 1985 claims not, that it varies across different tokens of same word or doesn’t occur at all).

Vowel reduction processes

alc-R1: Low vowel /a/ and mid front vowel /e/, and to a lesser extent mid back vowel /o/, are frequently realized as [ə] (Clairis 1985 : 382-4; conditioning environment not described).

alc-R2: A word-initial vowel is often syncopated in rapid speech (Clairis 1985 : 393).

alc-R3: An interconsonantal vowel is often syncopated in rapid speech. Apparently only some consonants condition this process, but particulars are not described (Clairis 1985 : 393).

Consonant allophony processes

alc-C1: Voiceless uvular stop [q] varies freely with affricated variant [qx] (Clairis 1985 : 378).

alc-C2: Bilabial stop may be realized as a fricative (Aguilera 2001).

alc-C3: Voiceless alveolar fricative [s] may be realized as [h] word-finally (Clairis 1985 : 372).

alc-C4: Aspirated uvular stop [q^h] and velar fricative [x] vary freely with [h] (Clairis 1985 : 377-8).

Morphology

(adequate texts unavailable)

[als] ALBANIAN (TOSK DIALECT) Indo-European, *Albanian* (Albania, Serbia and Montenegro)

References consulted: Bevington (1974), Klippenstein (2010), Newmark (1957), Newmark et al. (1982)

Sound inventory

C phoneme inventory: /p b t d c ʃ k g f s dʒ tʃ dʒ f v θ ð s z ʒ h m n ɫ ɾ r j/

N consonant phonemes: 29

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Palato-alveolar, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Trill, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Labiodental, Palato-alveolar, Velarization

V phoneme inventory: /i y ε ə a ɔ u/

N vowel qualities: 7

Diphthongs or vowel sequences: Diphthongs /ie ua ye ue/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Vowel length and nasalization contrasts occur in Gheg dialect.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)(C)V(C)(C)(C) (Newmark 1957 : 24-9, Klippenstein 2010)

Size of maximal onset: 4

Size of maximal coda: 3

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Coda), Morphologically Complex (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Apparently no restrictions for simple onsets. Biconsonantal onsets quite varied, include /tʃc tk ʒb fl tr pj zv mp rj/, with voicing mismatches typically avoided. Triconsonantal onsets include /ʃpr, skl, skt, pʃt, ʒvl, ndr, mbl/, Four-consonant onsets include /tʃmpl, zmbr/.

Coda restrictions: In simple codas, apparently /c h/ do not occur. Biconsonantal codas include /jt, rp, rf, mp, ls, fk, ps, tk, kθ, fsk, ʒd/. Triconsonantal codas always end in a voiceless sibilant plus /t/, include /pʃt, kst/.

Notes: Klippenstein (2010) shows that there are some onset clusters not listed by Newmark which occur.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic), Intensity (impressionistic)

Notes: In words without inflection, stress is final if that syllable is closed or ends in non-mid vowel, while stress falls on penultimate if final syllable ends in mid vowel (even if penultimate ends in mid vowel) (Trommer2013). While vowel quality factors into stress assignment, it appears that there is no difference in the vowel quality contrasts in stressed and unstressed syllables.

Vowel reduction processes

als-R1: For many speakers in ordinary speech, unstressed /ə/ is not pronounced when word-final following a consonant (Newmark et al. 1982 : 11; for older speakers in southern Tosk region, vowel is retained but pronounced as [ɪ] in this context).

als-R2: In rapid speech, mid central vowel /ə/ is optionally deleted when occurring between two consonants, of which C₁ is not /s z ʒ/. This deletion rarely occurs when both C₁ and C₂ are voiced (Klippenstein 2010 : 21-2).

Consonant allophony processes

als-C1: Fricatives /f θ v ð/ have occasional homorganic stop allophones pre-juncture and preceding a consonant (Newmark 1957).

Morphology

(adequate texts unavailable)

[aly] ALYAWARRA Pama-Nyungan, *Arandic-Thura-Yura* (Australia)

References consulted: Yallop (1977)

Sound inventory

C phoneme inventory: /p t t̪ c k p^m t̪ⁿ t̪^l c̺ k̺ m ɲ n ɳ ɲ ŋ l l̪ ʎ r ɹ w j ɣ/

N consonant phonemes: 27

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Dental, Alveolar, Retroflex, Palatal, Velar

Manners: Stop, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Nasal release, Retroflex

V phoneme inventory: /i a u i: u:/

N vowel qualities: 3

Diphthongs or vowel sequences: Diphthongs /ai au/

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: /ɣ/ doesn't occur in W. Arrernte, but is retained in Alyawarra (Yallop 1977 : 12).

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)(C)V(C) (Yallop 1977 : 41-5)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Varies with VC sequence

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: C₁ may be a plosive, nasal-released plosive, or nasal. C₂ is always /w/.

Coda restrictions: Nasals, laterals, and trills most common; less commonly, plosives and nasal-released plosives may occur. There are no word-final codas.

Notes: The sequence /ɲkw/ seems to occur invariably as an onset cluster in the word *ɲkwa* 'sugar, sweetness'; however this is only true phrase-initially. In connected speech when following another word, words without an initial vowel al-

Abbreviations

ways occur with a linking vowel (quality determined by initial consonant), which alters the syllable structure (Yallop 1977 : 28-30). Since the 3-C onset seems to be a very marginal pattern, I take the canonical syllable structure of the language to be consistent with the (C)(C)V(C) pattern reported by Yallop later in the text.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic), Intensity (impressionistic)

Notes: Duration is a correlate of stress for only some syllables.

Vowel reduction processes

aly-R1: High vowels /i u/ tend to be centralized and preceded by a glide in word-initial (unstressed) position (Yallop 1977 : 25).

aly-R2: Low short vowel /a/ is reduced to mid when occurring word-initially or -finally (and therefore unstressed) (Yallop 1977 : 25).

aly-R3: Low short vowel /a/ is often dropped word-initially (and therefore unstressed) before a single consonant (Yallop 1977 : 28).

aly-R4: In normal connected speech, short unstressed vowels are often elided altogether before continuants (Yallop 1977 : 27).

aly-R5: When low short vowel /a/ is dropped in word-initial, unstressed position before a sequence of consonants, the first may become syllabic (results in syllabic nasals, Yallop 1977 : 19).

Consonant allophony processes

aly-C1: Palatal stop /c/ is often realized as affricate [cç] (Yallop 1977 : 21).

aly-C2: Lateral approximants may be realized as fricatives following a sequence of /ij/ or /aj/ and preceding a plosive (Yallop 1977 : 19).

aly-C3: A trill may be realized as palato-alveolar fricative [ʒ] following a dental or alveolar consonant (Yallop 1977 : 19).

Morphology

(adequate texts unavailable)

[amp] ALAMBLAK Sepik, *Sepik Hill* (Papua New Guinea)

References consulted: Bruce (1984), SIL (??)

Sound inventory

C phoneme inventory: /p b t d k g ʈ ɖ ɟ s ʃ x m n ɲ r w j/
N consonant phonemes: 18
Geminates: N/A
Voicing contrasts: Obstruents
Places: Bilabial, Alveolar, Palato-alveolar, Velar
Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant
N elaborations: 2
Elaborations: Voiced fricatives/affricates, Palato-alveolar
V phoneme inventory: /i e i ə a o u/
N vowel qualities: 7
Diphthongs or vowel sequences: Diphthongs /ai ii ui oi au/
Contrastive length: None
Contrastive nasalization: None
Other contrasts: N/A
Notes: For affricates, SIL OPD gives only /ɖʒ/. /i/ included in [Bruce 1984](#) , but not SIL OPD.
Syllable structure
Complexity Category: Highly Complex
Canonical syllable structure: (C)(C)(C)V(C)(C)(C) ([Bruce 1984](#) , SIL 2004)
Size of maximal onset: 3
Size of maximal coda: 3
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels, Diphthongs
Syllabic consonant patterns: Nasal
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: Predictable from word/consonantal context
Morphological constituency of maximal syllable margin: Morpheme-internal (Onset), Both patterns (Coda)
Morphological pattern of syllabic consonants: Lexical items
Onset restrictions: No restrictions on simple onsets. Biconsonantal onsets include /sk tw gw fw kr pk/. Triconsonantal onsets include /tkm, tkb, prt, tkm, krp, brb, mxt/.
Coda restrictions: It seems there are some restrictions on simple codas, including /b g w j/. Biconsonantal codas include /nt, rt, sr, rs, gt/. Triconsonantal codas include /ɲpʈʃ ndt mbt/.

Abbreviations

Notes: SIL OPD lists some larger onsets, e.g. /kmbr/, and vowelless words, e.g. /kpt/. Unclear whether forms listed in SIL OPD have alternate forms with epenthetic vowel or if these are fully regular patterns. Syllabification in **Bruce (1984)** does give three-obstruent onset (*jak'tkbatkikibat* 'to get and mash', p. 60). Analysis of syllable structure dependent on analysis/status of high central vocoid /i/. Bruce discusses possible history of this vowel and development of some of these clusters (1984: 69-70).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Not described

Vowel reduction processes

amp-R1: Tense high front vowel /i/ is optionally realized as lax [ɪ] when occurring after a palatal glide /j/ in an unstressed syllable (**Bruce 1984** : 37).

amp-R2: A tense mid front vowel /e/ may be realized as lax [ɛ] in unstressed syllables (**Bruce 1984** : 38).

amp-R3: Mid back rounded vowel /o/ is shortened when preceded by a velar consonant and followed by an alveolar consonant (**Bruce 1984** : 39).

amp-R4: Mid central vowel /ə/ may be realized as high central vowel [ɪ] preceding a consonant-initial stressed syllable (**Bruce 1984** : 41).

Consonant allophony processes

amp-C1: Alveolars may be realized as palatal or palato-alveolar following a palatal consonant (including glides) (**Bruce 1984** : 29).

amp-C2: Fricatives are voiced when occurring after a voiced non-nasal and before a voiced consonant (**Bruce 1984** : 25).

amp-C3: A labiovelar approximant is realized as a vocalic offglide [ʷ] following a mid or low vowel and preceding a peripheral consonant (**Bruce 1984** : 28).

Morphology

Text: "The spirit who turned into an animal" (**Bruce 1984** : 323-331)

Synthetic index: 2.5 morphemes/word (1264 morphemes, 502 words)

[aot] **ATONG** Sino-Tibetan, *Brahmaputran* (Bangladesh, India)

References consulted: VanBreugel2008

Sound inventory

C phoneme inventory: /p p^h b t t^h d k k^h g ɕ ɕ̥ h m n ŋ ɾ l w j/

N consonant phonemes: 20
Geminates: N/A
Voicing contrasts: Obstruents
Places: Bilabial, Alveolar, Alveolo-palatal, Velar, Glottal
Manners: Stop, Affricate, Fricative, Nasal, Flap/tap, Central approximant, Lateral approximant

N elaborations: 2
Elaborations: Voiced fricatives/affricates, Post-aspiration

V phoneme inventory: /i e ə a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /r/ has a trill variant. Van Breugel analyzes vowel-glides sequences as VC rather than diphthongs on the basis of distributional and perceptual evidence (2008: 48).

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)(C)V(C) (van Breugel2008: 43)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All but /ŋ j/ may occur as simple onsets. C+r onsets may occur word-internally.

Coda restrictions: Restricted to /p t k ɕ m n ŋ l w j/.

Notes: In non-initial syllables, C_ər~C_r variation may occur, e.g. /haʔbəri/ > [haʔbəri]~[haʔbri]. The variant with the schwa is most common, so Van Breugel analyzes this as a process of vowel reduction (2008: 43). However, comparative evidence from Boro-Garo, as well as language-internal examples given in the text, suggest that the /C_r/ clusters are original and have been variably resolved

Abbreviations

in the modern language through consonant deletion and schwa insertion (2008: 30-32). Thus I take non-initial C+r clusters to be canonical onsets.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Unpredictable/Variable

Phonetic processes conditioned by stress: Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic), Intensity (impressionistic)

Notes: Stress, realized as a low pitch, is an “optional property” of the first syllable of a word. Otherwise, stress placement may vary by speaker and context (van Breugel2008: 72-74; unclear from description whether word-level or higher-level stress is being described).

Vowel reduction processes

aot-R1: Vowels /i a o/ may be realized as [ɪ ɑ ɔ] in closed syllables (van Breugel2008: 53).

aot-R2: The vowel /e/ has a free variant [ɛ], especially word-finally (van Breugel2008: 53).

aot-R3: The vowel /u/ has free variant [ʊ] (van Breugel2008: 53).

aot-R4: Vowels may be devoiced between a voiceless stop or affricate and another voiceless stop or affricate which is intervocalic (van Breugel2008: 54).

aot-R5: Vowels may be deleted between a /ç^h/ or /tʃ/ and a voiceless stop or affricate which is intervocalic (van Breugel2008: 54).

Consonant allophony processes

(none reported)

Morphology

(adequate texts unavailable)

[apn] APINAYÉ Nuclear-Macro-Je, Je (Brazil)

References consulted: Burgess & Ham (1968), Ham (2009), CunhadeOliveira2005

Sound inventory

C phoneme inventory: /p^m b tⁿ d k^ŋ g ʔ tʃⁿ dʒ v s m n ɲ ɳ r j/

N consonant phonemes: 17

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Prenasalization, Labiodental, Palato-alveolar

V phoneme inventory: /i e ε a ʌ ɔ ʏ o ʊ u ĩ ã ɔ̃ ʊ ã/

N vowel qualities: 10

Diphthongs or vowel sequences: Diphthongs /ao uə/

Contrastive length: None

Contrastive nasalization: Some

Other contrasts: N/A

Notes: Ham (2009) has /ʒ/ instead of /j/. Cunha de Oliveira has /w/ instead of /v/. Because of the allophonic distribution observed, /j/ and /v/ are selected for inclusion in the phoneme inventory above. Burgess & Ham (1968) present a very different consonant inventory, considering prenasalized plosives to be predictable, and do not posit glides. /f/ occurs in loanwords. Discussion of typological unusualness of central vowel contrasts which are also attested in other Jê languages (Cunha de Oliveira2005: 61-2). Diphthongs are not frequent and few instances have been attested.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)(C)V(C) (Cunha de Oliveira2005: 67-71)

Size of maximal onset: 3

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Biconsonantal onsets limited to sequences of plosive or nasal + approximant or flap. In triconsonantal onsets, first consonant is a plosive, and others are limited to nasals, approximants, or flap. Each segment in a tautosyllabic sequence must be produced at a different place of articulation, and with a different manner of articulation.

Abbreviations

Coda restrictions: Limited to voiceless plosives or sonorants. Prenasalized stops and /ŋ/ do not occur.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic), Intensity (impressionistic)

Vowel reduction processes

apn-R1: Vowels of unstressed syllables preceding the nucleus of a stress group are very short (Burgess & Ham 1968 : 12).

apn-R2: Vowels may be realized as devoiced utterance-finally, though nasalized vowels are devoiced less frequently than oral vowels (Ham 2009 : 7).

Consonant allophony processes

apn-C1: Palatal glide /j/ is realized as alveolo-palatal [ʝ] in the simple onset of a stressed syllable (Cunha de Oliveira2005: 58).

apn-C2: /j/ is realized as [ʝ] when occurring as the second consonant in a complex onset and directly preceding a vowel (Cunha de Oliveira2005: 58).

apn-C3: /j/ is realized as [dʒ] in syllable codas at word-final position, immediately followed by a vowel-initial morpheme (Cunha de Oliveira2005: 58-9).

apn-C4: /v/ is realized as [w] in syllable codas and in second position in complex syllable onsets (Cunha de Oliveira2005: 59).

apn-C5: Voiceless velar stop /k/ is palatalized preceding a front vowel (Cunha de Oliveira2005: 50).

apn-C6: Obstruents are optionally voiced in syllable codas (Cunha de Oliveira2005: 44).

apn-C7: Plosives are optionally voiced in the onset of unstressed syllables (Cunha de Oliveira2005: 44).

apn-C8: Voiceless bilabial stop /p/ is prenasalized when occurring word-finally after a nasalized vowel (Cunha de Oliveira2005: 46).

apn-C9: Voiceless alveolar stop /t/ is realized as a flap when occurring between two mid front vowels (Cunha de Oliveira2005: 48).

Morphology

Text: “Sun and Moon” (first 8 pages, Cunha de Oliveira2005: 304-311)

Synthetic index: 1.1 morphemes/word (445 morphemes, 409 words)
[apu] APURINÃ Arawakan, *Southern Maipuran* (Brazil)
References consulted: *Facundes (2000)*
Sound inventory
C phoneme inventory: /p t k ʔ s ʃ h m n ɲ r j ɰ/
N consonant phonemes: 14
Geminates: N/A
Voicing contrasts: None
Places: Bilabial, Alveolar, Palato-alveolar, Palatal, Velar, Glottal
Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant
N elaborations: 1
Elaborations: Palato-alveolar
V phoneme inventory: /i e ɛ a o ɪ ː e ː ɪ a ː ɔ ː ĩ ẽ ɨ ă õ ɨ ː ẽ ː ɨ ː ă ː õ ː/
N vowel qualities: 5
Diphthongs or vowel sequences: Vowel sequences /io ei ai ao oi/
Contrastive length: All
Contrastive nasalization: All
Other contrasts: N/A
Notes: /h/ occurs only word-initially. /o/ varies between [o] and [u].
Syllable structure
Category: Simple
Canonical syllable structure: (C)V (*Facundes 2000* : 87-90)
Size of maximal onset: 1
Size of maximal coda: N/A
Onset obligatory: No
Coda obligatory: N/A
Vocalic nucleus patterns: Short vowels, Long vowels, Vowel sequences
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: N/A
Morphological pattern of syllabic consonants: N/A
Onset restrictions: All consonants occur.
Notes: It is possible to analyze diphthongs as coda glides.
Suprasegmentals
Tone: No
Word stress: Yes
Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Pitch (impressionistic), Intensity (impressionistic)

Vowel reduction processes

apu-R1: Vowels become devoiced in unstressed word-final position, especially in fast speech (Facundes 2000 : 60-1). This process also causes aspiration of a preceding stop.

Consonant allophony processes

apu-C1: The voiceless velar stop is palatalized preceding mid front vowels (Facundes 2000 : 76).

apu-C2: Plosives are voiced following a nasalized vowel (Facundes 2000 : 73).

Morphology

Text: “Apurina text sample” (Facundes 2000 : 625-642)

Synthetic index: 2.1 morphemes/word (714 morphemes, 347 words)

[ayz] MAYBRAT Maybrat-Karon (Indonesia)

References consulted: Dol (2007)

Sound inventory

C phoneme inventory: /p t k f s x m n r w j/

N consonant phonemes: 11

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Labiodental, Alveolar, Velar

Manners: Stop, Fricative, Nasal, Trill, Central approximant

N elaborations: 1

Elaborations: Labiodental

V phoneme inventory: /i e a ə o u/

N vowel qualities: 6

Diphthongs or vowel sequences: Vowel sequences /ii ie ia io ea eo ai ae ao au oi oa oo ua uo uu/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /o/ is described as lower than /e/. /ə/ occurs in some words as ‘optional’ phoneme, e.g. /te~/əte/ ‘below’. It can’t take stress but is counted for syllabification, so I include it here as a phoneme (Dol 2007 : 15-18).

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Dol 2007 : 34-8)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Vowel sequences

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: All consonants except /p w j/ occur.

Notes: Initial consonant sequences are posited in Dol's analysis as a result of morphology, but these are invariably broken up by an epenthetic schwa, such that phonetic onset clusters never occur. On the basis of both perceptual and acoustic evidence, Dol takes *phonetic* structure of syllable to be canonical (2007: 35-7).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic)

Notes: Duration a correlate in monosyllabic words that receive stress in connected speech.

Vowel reduction processes

(none reported)

Consonant allophony processes

ayz-C1: Plosives and /x/ vary with voiced variants freely (Dol 2007 : 21-2).

ayz-C2: Trill varies freely with flap in non-word-initial environments (Dol 2007 : 24).

Morphology

Text: "Siwa and his brother Mafif" (Dol 2007 : 284-291)

Abbreviations

Synthetic index: 1.5 morphemes/word (689 morphemes, 453 words)

[bak] BASHKIR Turkic, *Common Turkic* (Russia)

References consulted: Berkson et al. (2016), Matthew Carter (p.c.), Poppe (1964)

)

Sound inventory

C phoneme inventory: /p b t d k g q θ ð s ʃ χ ʁ h m n ŋ l r w j/

N consonant phonemes: 21

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Palato-Alveolar, Velar, Uvular, Glottal

Manners: Stop, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Voiced fricatives/affricates, Palato-alveolar, Uvular

V phoneme inventory: /i y ɪ ʏ æ ɑ ʊ ɔ u/

N vowel qualities: 9

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /ʔ ʁ̥ ʃ̥ f v z ʒ/ occur only in loans. Vowels are from CarterRobbins2016 acoustic study. /ʊ/ is the ‘canonical’ phoneme but quality is closer to [ʌ]. /e ɔ/ occur only in loanwords from Russian.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)V(C)(C) (Poppe 1964 : 12-18)

Size of maximal onset: 1

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs, Vowel sequences

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants except /θ ɲ/.

Coda restrictions: All consonants except /b d g ɣ h/ may occur as simple codas. Biconsonantal codas apparently have /r l/ as C₁ and a stop as C₂ (patterns inferred from examples).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Intensity (impressionistic)

Vowel reduction processes

bak-R1: High and mid vowels are lowered and centralized in pre-stressed position (CarterRobbins2015).

Consonant allophony processes

bak-C1: Velar fricative /x/ and nasal [ŋ] may be realized as uvulars adjacent to back vowels (Poppe 1964 : 11).

bak-C2: Lateral approximant [l] is velarized adjacent to back vowels (Poppe 1964 : 10).

bak-C3: Voiced bilabial stop [b] may be realized as a fricative in fast speech (Poppe 1964 : 8).

bak-C4: A labiovelar approximant is realized as a vocalic offglide syllable-finally and word-finally (Poppe 1964 : 9).

bak-C5: Labial semivowel /w/ is realized as [u] in syllable- and word-final position (Poppe 1964 : 9)

Morphology

(adequate texts unavailable)

[bbo] SOUTHERN BOBO MADARÉ Mande, *Western Mande* (Burkina Faso)

References consulted: Morse (1976), Sanou (1978)

Sound inventory

C phoneme inventory: /k^h ɡ^h p b t̪ d̪ k g f v s̪ z̪ h m ɲ n ŋ l̪ r w j/

N consonant phonemes: 21

Geminates: N/A

Voicing contrasts: Obstruents

Places: Labial-velar, Bilabial, Labiodental, Dental, Palatal, Velar, Glottal

Manners: Stop, Fricative, Nasal, Flap/Tap, Lateral approximant, Central Approximant

Abbreviations

N elaborations: 2

Elaborations: Voiced fricatives/affricates, Labiodental

V phoneme inventory: /i e ε ə a ɔ o u ĩ ɛ ã ɔ ã/

N vowel qualities: 8

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: Some

Other contrasts: N/A

Notes: Phonetically long vowels analyzed as sequences (Morse 1976 : 100-105). /ə/ is very reduced: in normal conversation, it sounds more like open transition than a vowel, but it does bear tone. Morse analyzes it as phoneme because in most cases it is unclear which vowel might have been reduced to produce this sound (Morse 1976 : 42-5).

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Morse 1976 : 112-114)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Notes: Occasionally CCV syllables occur in loanwords. The only cases of closed syllables are in a few French loans in well-educated speech (Morse 1976 : 113).

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Other (tone)

Phonetic processes conditioned by stress: Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Not described

Vowel reduction processes

bbo-R1: High front vowels /i i~ / are partially devoiced following /s/ (Morse 1976 : 28-9).

Consonant allophony processes

bbo-C1: Bilabial stops are affricated preceding a high front vowel (Morse 1976 : 20).

bbo-C2: A flap [ɾ] is realized with palato-alveolar fricative release [ɾ³] preceding a high front vowel (Morse 1976 : 25).

bbo-C3: Voiced stops /b/ and /g/ are realized as fricatives in intervocalic environments (Morse 1976 : 22).

bbo-C4: Alveolar and velar stops and fricatives, and /n/, are fronted preceding high and/or front vowels (Morse 1976 : 20-23).

bbo-C5: Stops, fricatives, nasals, and laterals are labialized preceding back vowels (Morse 1976 : 20).

Morphology

(adequate texts unavailable)

[bcj] **BARDI** Nyulnyulan, *Western Nyulnyulan* (Australia)

References consulted: Bownern (2012)

Sound inventory

C phoneme inventory: /p t ṭ c g m n ŋ ɲ ɳ l ʎ ʀ ɽ j w/

N consonant phonemes: 17

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Alveolar, Retroflex, Palatal, Velar

Manners: Stop, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 1

Elaborations: Retroflex

V phoneme inventory: /i a ɔ u i: a: u:/

N vowel qualities: 4

Diphthongs or vowel sequences: None

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: /e/ is marginally phonemic.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)V(C)(C) (Bownern 2012 : 94-104)

Size of maximal onset: 1

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Both patterns (Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Apparently none (though word-initially, /r/ and /ʌ/ do not occur).

Coda restrictions: Chart in Bown (2012 : 102) indicates that all consonants except /b/ may occur as a simple coda. Biconsonantal codas consist of /l/, /ɹ/ or /r/ followed by a nasal which is homorganic with the following stop.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: Vowel Length Contrasts (see notes)

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental), Intensity (instrumental)

Notes: Duration is a correlate of stress for short vowels, and is slight. There are cases where post-tonic vowels are not neutralized, and examples where intensity peak does not coincide with the pitch peak. Stress is always word-initial; because some consonant contrasts do not occur word-initially, stressed syllables are associated with fewer consonant contrasts: trill /r/ and palatal lateral /ʎ/ do not occur, while apico-dental and apico-alveolar (retroflex) consonants are neutralized in favor of retroflex series. Long vowels are rarely attested in unstressed positions. I take the consonant pattern to be reflective of general tendencies towards word-initial neutralization in Australian languages, but the vowel length pattern to be truly an effect of stress, since it is explicitly described in those terms.

Vowel reduction processes

bcj-R1: Short vowels are reduced in quality in unstressed syllables (centralized and lowered or raised to [ə] or [ɜ], Bown 2012 : 88).

bcj-R2: For some speakers, the vowel in an open medial syllable of a trisyllabic word is deleted, especially when it is /i/ and the third syllable is heavy (Bower 2012 : 91).

bcj-R3: High front vowels /i u/ are rhoticized and reduced between a stop and a glide (Bower 2012 : 91).

bcj-R4: Word-final vowels are often partially or fully devoiced (Bower 2012 : 92; in some dialects these vowels are omitted entirely).

bcj-R5: A vowel in a syllable following a stressed syllable is characterized by both shortening and centralization, particularly when that syllable is open (Bower 2012 : 111; some sources consistently note this as vowel loss).

Consonant allophony processes

bcj-C1: Glide /j/ may be realized as [ɟ] following a trill and preceding a vowel, while also following a stressed syllable (Bower 2012 : 80-1).

bcj-C2: Stops are voiced intervocalically (Bower 2012 : 76).

bcj-C3: A trill is realized as a flap intervocalically (Bower 2012 : 81).

bcj-C4: Stops are realized with weak closure intervocalically (Bower 2012 : 78).

Morphology

Text: “Goolamana,” “Story about Mirrdiidi people” (Bower 2012 : 704-710)

Synthetic index: 2.0 morphemes/word (307 morphemes, 151 words)

[bcq] BENCH Ta-Ne-Omoti (Ethiopia)

References consulted: Rapold (2006)

Sound inventory

C phoneme inventory: /p b t d k g ʔ p' t' k' ʈʂ ʈʂ' ʈʂ' ʈʂ' ʈʂ' s z ʃ ʒ ɕ ʑ h m n l r j/

N consonant phonemes: 28

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palato-alveolar, Alveolo-palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/tap, Central approximant, Lateral approximant

N elaborations: 3

Elaborations: Voiced fricatives/affricates, Ejective, Palato-alveolar

V phoneme inventory: /i e a o u/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Abbreviations

Other contrasts: N/A

Notes: Rapold notes that diphthongs are a possible analysis of certain glide-vowel patterns (2006: 100-102).

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)CV(C)(C)(C) (Rapold 2006 : 91-112)

Size of maximal onset: 2

Size of maximal coda: 3

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Phonemic

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset), Morphologically Complex (Coda)

Morphological pattern of syllabic consonants: Both (Nasal)

Onset restrictions: All but /l r ʃs tʃ ʧ/ may occur as simple onsets word-initially. For CC onsets, C₁ may be any consonant except for /p' h/, palato-alveolar and alveopalatal fricatives, or ejective affricates. C₂ is /j/.

Coda restrictions: Almost any C may occur as simple coda. In CC codas, first C may be labial stop, fricative, liquid, nasal, or /j/ and second C may be buccal stop, ejective affricate or fricative (but fricatives do not form clusters with affricates or other fricatives). CCC codas highly restricted: /jnt/ or /p m r j/+s/+t/. /pst/ only HC pattern.

Notes: Resyllabification of CCC codas is common in fluent speech when followed by vowel, but these codas do sometimes occur in speech. Note that C/j/ onsets are limited in their distribution, occurring only before /a/. Rapold discusses other possible phonological interpretations of this pattern (2006: 101-3), including palatalized C and C+falling diphthong analyses.

Suprasegmentals

Tone: Yes

Word stress: Not reported

Vowel reduction processes

(none reported)

Consonant allophony processes

bcq-C1: An alveolar sibilant is realized as palato-alveolar following a preceding palato-alveolar sibilant, with intervening phonological material (long distance

sibilant harmony) (Rapold 2006 : 67).

bcq-C2: A homorganic stop is inserted between a nasal and fricative, producing a nasal-affricate sequence (Rapold 2006 : 69).

bcq-C3: A voiceless bilabial stop is optionally realized as a bilabial or labiodental fricative, possibly in all contexts (Rapold 2006 : 73).

bcq-C4: Alveolar stops are realized as palato-alveolar preceding a palatal-alveolar sibilant (Rapold 2006 : 74).

bcq-C5: A syllabic nasal is realized as a nasalized high central vowel following a palato-alveolar or alveolo-palatal consonant (Rapold 2006 : 76).

Morphology

Text: “Böbt-ägà bēt — The skins of the baboons” (Rapold 2006 : 594-599)

Synthetic index: 2.28 morphemes/word (594 morphemes, 261 words)

[bsk] BURUSHASKI isolate (Pakistan)

References consulted: Anderson (1997), Yoshioka (2012)

Sound inventory

C phoneme inventory: /p b t̪ d̪ t̪ d̪ k g q p^h t̪^h t̪^h k^h q^h ts̪ t̪̥ d̪̥ ts̪̥ d̪̥ ts̪̥ t̪̥^h t̪̥^h s̪ z̪
ç ʃ ɣ h m n ŋ r l w ɰ j/

N consonant phonemes: 36

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Retroflex, Alveolo-palatal, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Post-aspiration, Retroflex, Uvular

V phoneme inventory: /i ɛ ʌ o u i: ɛ: ʌ: o: u:/

N vowel qualities: 5

Diphthongs or vowel sequences: Diphthongs /ʌi ʌu/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: /ɰ/ is an advanced velar approximant.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)V(C)(C) (Anderson 1997 : 1024-5; Yoshioka 2012 : 18-24)

Size of maximal onset: 2

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset, Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants may occur as a simple onset, though /ŋ/ and /j/ do not occur word-initially. Biconsonantal onsets occur with /p b p^h t d t^h g/ as C₁ and /r j/ as C₂. Anderson also gives example of /gy/ onset in Standard Burushaski.

Coda restrictions: Any consonant except /w j/ can occur as simple coda, though voiced stops and affricates and some fricatives are not found word-finally. In biconsonantal codas, C₁ is a voiceless fricative and C₂ is /k/, or C₁ is a sonorant and C₂ is /t k ʃ ɕ ʈʂ ʈʂ̚/.

Notes: Yoshioka states that all word-initial Cr onsets are from loan words and onomatopoeia, but Anderson gives examples that appear to be native (e.g. *pra:q* ‘completely’).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: Vowel Quality Contrasts

Phonetic correlates of stress: Pitch (impressionistic)

Notes: Stress is marked by pitch or pitch contour. Long vowels are only found in stressed syllables. Language is described as having pitch accent by Yoshioka. Vowel length is found only in stressed syllables in underived lexical items (Anderson 1997 : 1029).

Vowel reduction processes

bsk-R1: High vowels /i u/ are realized as lax in unstressed syllables (Anderson 1997 : 1029).

bsk-R2: Mid front vowel /e/ fluctuates with [ɛ] in unstressed syllables (Anderson 1997 : 1029).

Notes: In Yasin dialect, unstressed /o/ frequently raises to [u] (Anderson 1997 : 1038).

Consonant allophony processes

bsk-C1: Voiceless velar stop [k] varies freely with uvular [q] preceding /a/ (Anderson 1997 : 1025).

bsk-C2: Voiced velar fricative varies freely with a velar affricate and a voiced uvular stop syllable-initially (Anderson 1997 : 1025).

bsk-C3: Aspirated stops may be realized as affricates or fricatives syllable-initially (Anderson 1997 : 1025).

bsk-C4: Alveolo-palatal [dʒ] varies freely with fricative variant (Anderson 1997 : 1025).

bsk-C5: Velar fricative /x/ may be realized as [h] preceding /u/ (Anderson 1997 : 1025).

Morphology

(adequate texts unavailable)

[cap] CHIPAYA Uru-Chipaya (Bolivia)

References consulted: Cerrón-Palomino2006, Olson (1967)

Sound inventory

C phoneme inventory: /p p^h p' t t^h t' k k^h k' k^w q q^h q' q^w ʈs ʈs^h ʈs' ʈʃ ʈʃ^h ʈʃ' ʂ ʂ^h ʂ' ʂs ʂs^h ʂs' x x^w χ χ^w m n ɲ ŋ l ɭ ɮ r w j/

N consonant phonemes: 40

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Dental, Alveolar, Palato-alveolar, Retroflex, Velar, Uvular

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 6

Elaborations: Post-aspiration, Ejective, Palato-alveolar, Retroflex, Uvular, Labialization

V phoneme inventory: /i e a o u i: e: a: o: u:/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: /ʔ/ occurs in restricted sociolinguistic contexts in one morpheme (Cerrón-Palomino2006: 55).

Syllable structure

Abbreviations

Complexity Category: Complex

Canonical syllable structure: (C)(C)V(C)(C) (Cerrón Palomino2006: 63-66).

Size of maximal onset: 2

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Obstruent (Conflicting reports)

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset), Both patterns (Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: No restrictions on simple onsets. Biconsonantal onsets have /s ʃ ʒ/ as C₁. Only presently attested triconsonantal onset is /xʃt^h/, pronounced [hʃt^h].

Coda restrictions: No restrictions on simple codas. Biconsonantal codas end in /ʃ/.

Notes: Triconsonantal onsets used to be more common, as they are derived from a combination of prefixes and a stem-initial consonant; however, these forms are now completely unproductive and “almost obsolete”. Speakers passively accept /xʃt^h/ in two forms, *xʃt^ha*: ‘give it to me!’ and *xʃt^ha:ʃlaʃa* ‘give it to me, please!’ (Cerrón Palomino2006: 66). Because this is explicitly described as a marginal and rapidly obsolescing pattern, I classify this language as having Complex syllable structure, while noting that it has recently shifted from having Highly Complex syllable structure.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Not described

Vowel reduction processes

cap-R1: Low central vowel /a/ is realized as [ə] in unstressed open syllables (Olson 1967 : 301).

cap-R2: Short vowels /i e a o u/ are devoiced when preceded by an aspirated consonant and followed by a voiceless consonant (usually a non-sibilant fricative) (Cerrón-Palomino2006: 62).

cap-R3: Short vowels are truncated (deleted) before a pause (Cerrón-Palomino2006: 67).

Notes: Vowel devoicing is one of the most salient phonetic properties of the language (Cerrón-Palomino2006: 62). Historical elision of pre-stress vowels is responsible for some of the onset sequences in Chipaya (Cerrón-Palomino2006: 65).

Consonant allophony processes

cap-C1: Voiceless dental fricative is realized as a palato-alveolar when occurring between two high vowels (Cerrón-Palomino2006: 48-9).

cap-C2: Labiovelar approximant [w] may be realized as a fricative intervocalically, especially when the surrounding vowels are /i/ (Cerrón-Palomino2006: 55).

cap-C3: A trill is realized as a flap syllable-finally (Cerrón-Palomino2006: 54).

cap-C4: A palato-alveolar affricate is realized as a fricative word-finally (Cerrón-Palomino2006: 49).

cap-C5: Velar and uvular stops vary freely with fricative variants (Cerrón-Palomino2006: 38).

Morphology

Text: “Tata Sabaya y el Sajama” (Cerrón Palomino2006: 286-291)

Synthetic index: 2.1 morphemes/word (342 morphemes, 161 words)

[car] CARIB Cariban, *Guianan* (Suriname)

References consulted: Courtz (2008), Hoff (1968), Peasgood (1972)

Sound inventory

C phoneme inventory: /p b t d k g ʔ s h m n ŋ ʈ w j/

N consonant phonemes: 15

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Retroflex, Velar, Glottal

Manners: Stop, Fricative, Nasal, Flap/Tap, Velar, Glottal

N elaborations: 1

Elaborations: Retroflex

V phoneme inventory: /i e ɛ a u o/

N vowel qualities: 6

Diphthongs or vowel sequences: Diphthongs /ei ui oi ii ai ou au/

Contrastive length: None

Abbreviations

Contrastive nasalization: None

Other contrasts: N/A

Notes: Hoff shows phonemic length contrast in a very limited set of lexical items in 1968. Peasgood has vowel length distinction. Courtz and Yamada take vowel length to be prosodic.

Syllable structure

Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Courtz 2008 : 22-7)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: Only nasals and plosives occur.

Notes: “Underlying” stop-C onsets are realized with epenthesized [i] or stop isn’t pronounced at all when occurring sentence-initially. Author interprets most word-initial instances of /i/ as “auxiliary vowels” needed to pronounce syllables that have lost their original vowel; e.g. /inta/ (Courtz 2008 : 26).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic)

Vowel reduction processes

car-R1: A word-medial vowel is devoiced preceding syllable-initial /s/ (Peasgood 1972 : 38).

car-R2: An unstressed word-initial high central vowel /i/ is deleted (Courtz 2008 : 40).

car-R3: An unstressed word-initial high front vowel /i/ is deleted unless it precedes /t/. The high and front features of the deleted vowel persevere into the following consonant (Courtz 2008 : 41).

Consonant allophony processes

car-C1: A voiceless alveolar fricative is realized as palato-alveolar adjacent to /i/ (Courtz 2008 : 32).

car-C2: Voiceless stops are realized as voiced following an unstressed CV sequence or following a nasal (Courtz 2008 : 31).

Morphology

Text: “Kurupi’s haircut” (first 10 pages; Courtz 2008 : 150-159)

Synthetic index: 1.8 morphemes/word (619 morphemes, 353 words)

[cav] CAVINEÑA Pano-Tacanan, *Tacanan* (Bolivia)

References consulted: Guillaume (2008)

Sound inventory

C phoneme inventory: /p b t d c ʃ k kʷ fʃ fɕ s ɕ h m n ɲ l ʎ w j/

N consonant phonemes: 20

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Alveolo-palatal, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/tap, Central approximant, Lateral flap, Lateral approximant

N elaborations: 1

Elaborations: Labialization

V phoneme inventory: /i e a ʊ/

N vowel qualities: 4

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Vowel sequences occur as distinct syllables, sometimes with intervening glottal stop insertion. (Guillaume 2008 : 28-9).

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V(C) (Guillaume 2008 : 30-32)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: None.

Coda restrictions: /s/ or /n/

Notes: Codas occur word-medially in only five native words. In four of these cases it is clear that the coda has arisen from an “idiosyncratic process of vowel elision” (Guillaume 2008 : 31). Codas may also occur in interjections and onomatopoeia.

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:

Tonal Contrasts

Phonetic correlates of stress: Pitch (impressionistic)

Vowel reduction processes

cav-R1: Vowels /e ʊ/ occasionally have more open variants [ɛ ɔ] (Guillaume 2008 : 29).

Notes: Historical “idiosyncratic process of vowel elision” has created codas in a small set of words (Guillaume 2008 : 29).

Consonant allophony processes

(none reported)

Morphology

Text: “When the Araonas became angry with each other” (first 6 pages), “The woman who was eaten up by giant mosquitoes” (Guillaume 2008 : 773-8; 796-8)

Synthetic index: 1.73 morphemes/word (535 morphemes, 309 words)

[cho] CHOCTAW Muskogean, *Western Muskogean* (United States)

References consulted: Broadwell (2006)

Sound inventory

C phoneme inventory: /p b t k ʔ tʃ f s ʃ h m n l ɫ w j/

N consonant phonemes: 16

Geminates: N/A
Voicing contrasts: Obstruents
Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Velar, Glottal
Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral fricative, Lateral approximant
N elaborations: 2
Elaborations: Labiodental, Palato-alveolar
V phoneme inventory: /i a u i: a: u: ĩ ã ã/
N vowel qualities: 3
Diphthongs or vowel sequences: None
Contrastive length: Some
Contrastive nasalization: Some
Other contrasts: N/A
Notes: Short vowels also have nasal counterparts.
Syllable structure
Category: Moderately Complex
Canonical syllable structure: (C)V(C) (Broadwell 2006 : 18-21).
Size of maximal onset: 1
Size of maximal coda: 1
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels, Long vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: N/A
Morphological pattern of syllabic consonants: N/A
Onset restrictions: All consonants except /ʔ/ occur.
Coda restrictions: All consonants except /b ɗ w j tʃ/ occur.
Suprasegmentals
Tone: Yes
Word stress: Yes
Stress placement: Morphologically or Lexically Conditioned
Phonetic processes conditioned by stress: Vowel Reduction
Differences in phonological properties of stressed and unstressed syllables:
 (None)
Phonetic correlates of stress: Pitch (impressionistic)

Abbreviations

Notes: Language has a pitch accent system: final syllable of each word has high or rising pitch, while some stems have additional high pitch on penultimate or antepenultimate syllable. (Ulrich) Pitch is very minimally contrastive in the language (Broadwell 2006 : 17).

Vowel reduction processes

cho-R1: A word-initial (and unstressed) high front vowel /i/ may be deleted before a sequence of /s/ or /ʃ/ and another consonant, in casual speech (Broadwell 2006 : 19).

cho-R2: A long high front vowel /i:/ is often lowered to [e:] when occurring word-finally (Broadwell 2006 : 30).

Consonant allophony processes

cho-C1: A voiceless velar stop is voiced intervocalically. (Broadwell 2006 : 15)

cho-C2: A voiceless velar stop may be realized as a voiced fricative intervocalically (Broadwell 2006 : 15)

Morphology

Text: “My first days in school,” “Life at the orphanage” (Broadwell 2006 : 355-360)

Synthetic index: 2.1 morphemes/word (552 morphemes, 263 words)

[coc] COCOPA Cochimi-Yuman, *Yuman* (Mexico, United States)

References consulted: Bendixen (1980), Crawford Jr (1966)

Sound inventory

C phoneme inventory: /p t ʈ k kʷ q qʷ ʔ tʃ s ʈ ʃ ʈ x xʷ m n nʲ l lʲ r w j/

N consonant phonemes: 24

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Alveolar, Palato-alveolar, Retroflex, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral fricative, Lateral approximant

N elaborations: 5

Elaborations: Palato-alveolar, Retroflex, Uvular, Palatalization, Labialization

V phoneme inventory: /i a u i: a: u:/

N vowel qualities: 3

Diphthongs or vowel sequences: Diphthongs /iw uj aj aw i:w u:j a:j a:w/,
Vowel sequences /ia i:a a:a ua u:a/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: /e/ occurs only in loanwords from Spanish, English.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)(C)V(C)(C)(C) (Crawford Jr 1966 : 35-48; Bendixen 1980 : 218-19)

Size of maximal onset: 4

Size of maximal coda: 3

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs, Vowel sequences

Syllabic consonant patterns: Nasal, Liquid, Obstruent

Size of maximal word-marginal sequences with syllabic obstruents: 5 (initial), 3 (final)

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset, Coda)

Morphological pattern of syllabic consonants: Grammatical items (Nasal, Obstruent), Both (Liquid)

Onset restrictions: Biconsonantal onsets include stop-fricative, fricative-fricative clusters. Triconsonantal onsets include /sxʈ psk^w xps/. Four-consonant onsets include /sʈʃxʔ pʃʈʃʔ ʃxlm/. Only glottal stops may be contiguous with other stops.

Coda restrictions: Contiguous stops may not be identical in coda clusters. Biconsonantal codas include sonorant+obstruent, obstruent+obstruent, with no contiguous stops: /ʃk ʃx kp lp n^lx ms/. Triconsonantal codas include sonorant+obstruent+obstruent or three obstruents: /qsk ʃsk rsk/.

Notes: Obstruent-sonorant and sonorant-obstruent onsets reported by Crawford, but Bendixen states these are predictably split by epenthesis (1980: 219-20). Crawford claims there are different combinatory patterns occurring in onsets of stressed and unstressed syllables (1966: 35-37), but the description is confusing and the examples don't clarify. Both stressed and unstressed syllables have, e.g., /psk^w/ onsets. Both Crawford and Bendixen propose that fricatives may occur as syllable nuclei, though Bendixen states this occurs only in fastest rates of speech (1980: 34).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (instrumental), Intensity (instrumental)

Notes: Bendixen instrumentally confirms intensity/amplitude for standard word stress; Crawford reports (without instrumental evidence) duration and pitch as correlates. Bendixen reports these (instrumentally) for emphatic stress. Stress only targets syllables containing vowels (Crawford 28).

Vowel reduction processes

coc-R1: Vowels in unstressed syllables are somewhat less tense than those of stressed syllables (Crawford Jr 1966 : 22).

coc-R2: A stressed vowel is shortened when preceded by /w/ and a morpheme boundary (Bendixen 1980 : 67).

Notes: Short /i/ is relatively rare in unstressed syllables (Crawford Jr 1966 : 32). In formal oration, unstressed syllables are barely audible (Bendixen 1980 : 332-3).

Consonant allophony processes

coc-C1: A voiceless velar stop is fronted preceding /i/. (Crawford Jr 1966 : 15)

coc-C2: Stops may be voiced following a long vowel word-finally when the following word begins with a nasal. (Bendixen 1980 : 99-100)

Morphology

(adequate texts unavailable)

[cod] COCAMA-COCAMILLA Tupian, *Maweti-Guarani* (Peru)

References consulted: Vallejos Yopán 2010, Vallejos Yopán (p.c.)

Sound inventory

C phoneme inventory: /p t k ʈs ʈʃ x m n ɾ w j/

N consonant phonemes: 11

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Alveolar, Palato-alveolar, Velar

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant

N elaborations: 1

Elaborations: Palato-alveolar

V phoneme inventory: /i e i a u/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None
Other contrasts: N/A
Syllable structure
Category: Moderately Complex
Canonical syllable structure: (C)(C)V(C) (Vallejos Yopán2010: 112-15)
Size of maximal onset: 2
Size of maximal coda: 1
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: Morpheme-internal
 (Onset)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: All consonants occur in simple onsets; in complex onsets C₁ is limited to /p t k r n/ and C₂ to glides /w/ and /j/.
Coda restrictions: Only /w j n/ occur.
Notes: (none)
Suprasegmentals
Tone: No
Word stress: Yes
Stress placement: Fixed
Phonetic processes conditioned by stress: Vowel Reduction
Differences in phonological properties of stressed and unstressed syllables:
 (None)
Phonetic correlates of stress: Not described
Vowel reduction processes
cod-R1: The high back vowel /u/ is produced as lax or [o] word-finally (and following stressed syllable) (Vallejos Yopán2010: 109).
cod-R2: The high front vowel /i/ is produced as lax or [e] word-finally (and following a stressed syllable) following an approximant segment (Vallejos Yopán2010: 109).
cod-R3: The mid vowel /e/ is slightly centralized word-medially, especially in fast pronunciation (Vallejos Yopán2010: 110).
cod-R4: In words of more than three syllables, the vowel of the antepenultimate syllable (preceding the stressed syllable) is deleted (Vallejos Yopán2010:

Abbreviations

110-11).

cod-R5: Unstressed high vowels /i u/ are deleted word-initially preceding homorganic approximant /j/ or /w/ when the following syllable is stressed (Vallejos Yopán2010: 111-12).

Consonant allophony processes

cod-C1: Alveolar affricate is realized as palato-alveolar preceding a high front vowel (Vallejos Yopán2010: 101).

cod-C2: A palatal glide may be realized as [z] word-initially and intervocalically (Vallejos Yopán2010: 99).

cod-C3: A labiovelar glide may be realized as a fricative intervocalically (Vallejos Yopán2010: 99).

cod-C4: An alveolar nasal is realized as palatal preceding a palatal glide (Vallejos Yopán2010).

cod-C5: Stops are voiced following a nasal (Vallejos Yopán2010: 98).

cod-C6: An alveolar affricate may be realized as a fricative preceding a non-high vowel (Vallejos Yopán2010: 100).

Morphology

Text: “Bite of snake” (first 10 pages, Vallejos Yopán2010: 883-892)

Synthetic index: 1.5 morphemes/word (489 morphemes, 329 words)

[cub] CUBEO Tucanoan, *Eastern Tucanoan* (Colombia)

References consulted: Chacon (2012), Morse & Maxwell (1999)

Sound inventory

C phoneme inventory: /p b t d k tʃ h r w ʝ j/

N consonant phonemes: 11

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Flap/Tap, Central approximant

N elaborations: 1

Elaborations: Palato-alveolar

V phoneme inventory: /i e i a o u ĩ ẽ i ã õ ã/

N vowel qualities: 6

Diphthongs or vowel sequences: Vowel sequences /ea oa ue ao au ei ui/ and many more

Contrastive length: None

Contrastive nasalization: All

Other contrasts: N/A

Notes: Morse & Maxwell give /x/ instead of /h/, don't have /Ǿ/. Chacon states [Ǿ] often allophone of /j/, but does contrast with /j/ word-initially preceding /a/ in a highly frequent stem ('make'). However, Chacon also gives minimal pairs for /Ǿ/, but the phoneme has very limited distribution. Morse & Maxwell give /ε/ instead of /e/.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: C(V) (Chacon 2012 : 163-7)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Vowel sequences

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Notes: The third vowel in a sequence, if /i/, is acoustically similar to [j] (Chacon 2012 : 52).

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental), Intensity (instrumental)

Notes: Duration is the most consistent correlate of stress, intensity is less clear. "Kubeo tones are best seen as word-level contours, since they impose a particular pitch contour on a large section of an entire word, not only on individual syllables" (Chacon 134). Tones only occur on primary stressed syllables and syllables to the right of that.

Vowel reduction processes

cub-R1: Vowels in unstressed syllables are shorter, or may be deleted entirely (Chacon 2012 : 109, 123; instrumental evidence pp. 155-9). Other segments in unstressed syllables can additionally be deleted.

Notes: In sequences of three vowels analyzed as tautosyllabic by author, third vowel, if /i/, may be realized as [j] (Chacon 2012 : 52).

Consonant allophony processes

cub-C1: A palatal glide may be realized as a palato-alveolar affricate, especially in word-initial stressed syllables, but also word-initially in unstressed syllables (Chacon 2012 : 67).

cub-C2: A labiovelar glide may be realized as a fricative preceding non-front vowels (Chacon 2012 : 63).

cub-C3: A voiced alveolar stop is realized as an alveolar flap intervocalically (Chacon 2012 : 63).

cub-C4: A voiced alveolar stop is realized as a retroflex flap following any vowel and preceding a front vowel (Chacon 2012 : 6).

cub-C5: Voiceless bilabial and velar stops are sometimes realized as a glottal fricative when occurring in a post-stress syllable (Chacon 2012 : 123).

Morphology

(adequate texts unavailable)

[dow] DOYAYO Atlantic-Congo, Volta-Congo (Cameroon)

References consulted: Wiering & Wiering (1994)

Sound inventory

C phoneme inventory: /p t k k̠p b ɓ d d̠ g ɡ̠b f v s z h m n ɲ l r w j/

N consonant phonemes: 22

Geminates: N/A

Voicing contrasts: Obstruents

Places: Labial-velar, Bilabial, Labiodental, Alveolar, Velar, Glottal

Manners: Stop, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 3

Elaborations: Voiced fricatives/affricates, Implosive, Labiodental

V phoneme inventory: /i e ɛ a ɔ o u iː eː ɛː aː ɔː uː ĩ ẽ ẽ̃ ã ɔ̃ õ ù ïː ɛ̃ː ãː ɔ̃ː ûː/

N vowel qualities: 7

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: Some

Other contrasts: N/A

Notes: There is a nasal contrast for all but /e eː o oː/.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)V(C)(C)(C)(C) (Wiering & Wiering 1994 : 21-23, 37-43)

Size of maximal onset: 1

Size of maximal coda: 4

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Varies with CV sequence

Morphological constituency of maximal syllable margin: Morphologically Complex (Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants but /ŋ/ may occur in onset.

Coda restrictions: All consonants but /p b d k̞ ɡ̞ β h/ may occur as simple codas. Biconsonantal coda combinations are quite extensive, include /rk, pt, ts, kt, β/. Triconsonantal codas include /brt/ (phonetically [βt]), /ɡlt/ (phonetically [ɣlt]), and more. Four-consonant codas include /blts/, /ɡldz/, /mnts/, /ŋrdz/, and more. In largest clusters, C₁ is limited to /b ɡ m ŋ/, C₂ to /l r n/, C₃ to /d t/, and C₄ to /s z/. C₃ and C₄ must match in voicing. /b ɡ/ usually realized as fricatives in clusters.

Suprasegmentals

Tone: Yes

Word stress: Not reported

Vowel reduction processes

dow-R1: A long vowel is optionally shortened preceding a coda of two or three consonants (Wiering & Wiering 1994 : 22).

dow-R2: A long vowel is obligatorily shortened preceding a coda of four consonants (Wiering & Wiering 1994 : 22).

dow-R3: Following any stop other than /b/, a sequence of vowel plus alveolar nasal consonant is realized as a syllabic nasal (Wiering & Wiering 1994 : 24).

Consonant allophony processes

dow-C1: Voiced bilabial and velar stops are spirantized initially in a voiced consonant cluster (Wiering & Wiering 1994 : 31-2).

Morphology

(adequate texts unavailable)

Abbreviations

[dru] RUKAI (BUDAI DIALECT) Austronesian (Taiwan)

References consulted: **Chen (2006)**

Sound inventory

C phoneme inventory: /p b t d ɖ k g ʈs v θ ð s m n ŋ r l ʎ w j/

N consonant phonemes: 20

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Alveolar, Retroflex, Velar

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 3

Elaborations: Voiced fricatives/affricates, Labiodental, Retroflex

V phoneme inventory: /i ə a u i: e: a: u:/

N vowel qualities: 4

Diphthongs or vowel sequences: Diphthongs /au ai ia ua/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: Long vowels are contrastive in monosyllabic words and first syllable of disyllabic words, but not in penultimate position.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (**Chen 2006** : 211-18)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Notes: Most Formosan languages have canonical (C)V(C) structure; related language Paiwan also has (C)V(C). In Budai Rukai, a small number of sonorant codas such as nasals and laterals were attested in fast speech, but reconfirmation by author revealed (C)V forms for these (**Chen 2006** : 213).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental)

Notes: Pitch is a strong cue for stress in long and short vowels; duration a stronger cue for long vowels and is somewhat sensitive to word position of stress.

Vowel reduction processes

dru-R1: Long vowels are shortened when occurring in non-main stress position (Chen 2006 : 257).

Consonant allophony processes

dru-C1: Voiceless alveolar fricative and affricate are realized as palato-alveolar preceding a high front vowel (Chen 2006 : 230).

dru-C2: A voiced labiodental fricative may be realized as a stop word-initially preceding schwa (Chen 2006 : 227).

dru-C3: A voiced labiodental fricative may be realized as a glide word-initially preceding a non-schwa vowel (Chen 2006 : 227).

Morphology

(adequate texts unavailable)

[dry] DARAI Indo-European, *Indo-Iranian* (Nepal)

References consulted: Dhakal (2012), KotapishKotapish1978, Paudyal (2003), Netra P. Paudyal (p.c.)

Sound inventory

C phoneme inventory: /p b t̪ d̪ t̪ d̪ k g pʰ bʰ t̪ʰ d̪ʰ t̪ʰ d̪ʰ kʰ gʰ f̪s̪ d̪z̪ f̪s̪ʰ d̪z̪ʰ s̪ h̪ m̪ n̪ ŋ r̪ l̪ β̪ j̪/

N consonant phonemes: 29

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Retroflex, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Breathy voice, Voiced fricatives/affricates, Post-aspiration, Retroflex

V phoneme inventory: /i e ə a o u ɪ ẽ ə ã õ ù/

Abbreviations

N vowel qualities: 6

Diphthongs or vowel sequences: Diphthongs /iu eu au əu ou ei ai ui əi oi/

Contrastive length: None

Contrastive nasalization: All

Other contrasts: N/A

Notes: Kotapish & Kotapish 1973 also report /ʈ/. Paudyal gives /ʌ/ instead of /ə/. All six vowels are marginally contrastive for nasality (Dhakal 2012 : 7).

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)(C)V(C) (Dhakal 2012 : 17-20)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: C₁ may be any consonant except /ŋ/. C₂ is always a glide /β/ or /j/.

Coda restrictions: All consonants except for glides and glottal fricative /h/ are attested.

Nucleus:

Notes: Syllables lacking onsets are attested but very rare (Dhakal 2012 : 19).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
Not described

Phonetic correlates of stress: Not described

Vowel reduction processes

dry-R1: High back vowel /u/ may be deleted preceding a sequence of /wa/ and another consonant (Kotapish & Kotapish 1973 : 49).

Consonant allophony processes

dry-C1: Alveolar affricates and voiceless alveolar fricative are realized as palato-alveolar preceding a front vowel (**KotapishKotapish1978: 26**).

dry-C2: A voiceless aspirated velar fricative is realized as affricate [kx] following a vowel and preceding a schwa (**KotapishKotapish1978: 26**).

dry-C3: An alveolar flap is realized with palato-alveolar fricative release word finally (**KotapishKotapish1978: 24**).

dry-C4: Bilabial stops are realized as palatalized word-initially preceding /e/ (**KotapishKotapish1978: 27**).

dry-C5: A voiced bilabial stop is realized as prenasalized intervocalically (**KotapishKotapish1978: 27**).

dry-C6: A voiceless bilabial stop is spirantized intervocalically or between a vowel and a consonant (**KotapishKotapish1978: 17**).

dry-C7: A voiceless alveolar fricative varies with a glottal fricative preceding alveolar sonorants (**KotapishKotapish1978**).

Morphology

Text: “Jackal and Hen” (**Dhakal 2012** : 180-192)

Synthetic index: 1.6 morphemes/word (734 morphemes, 472 words)

[dyo] JOLA-FONYI Atlantic-Congo, *North-Central Atlantic* (Gambia, Senegal)

References consulted: **Lavergne (1979)**, **Sapir (1965)**

Sound inventory

C phoneme inventory: /p b t d c ʃ k g f s h m n ɲ l ɾ w j/

N consonant phonemes: 19

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Palatal, Velar, Glottal

Manners: Stop, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 1

Elaborations: Labiodental

V phoneme inventory: /i ɪ e ɛ ɐ a ɔ o ʊ u iː ɪː eː ɛː aː ɔː oː ʊː uː/

N vowel qualities: 10

Diphthongs or vowel sequences: Diphthongs /eʊ iu re ɔa eɪ/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: Diphthongs are rare.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)V(C)(C) (Sapir 1965 : 6-9)

Size of maximal onset: 1

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: Morpheme-internal (Coda)

Morphological pattern of syllabic consonants: Grammatical items

Onset restrictions: All consonants occur.

Coda restrictions: For simple codas, all consonants except /d/ may occur. For complex codas, C₁ is a nasal, C₂ a stop.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables:
None

Phonetic correlates of stress: Not described

Vowel reduction processes

dyo-R1: High-mid central vowel /ə/ is lowered to the quality of English [ə] when unstressed (Sapir 1965 : 6).

Consonant allophony processes

dyo-C1: Velar stops are realized as post velar preceding /u/ (Sapir 1965 : 5).

dyo-C2: A voiceless velar stop is realized as palatal preceding a front vowel (some speakers) (Sapir 1965).

Morphology

(adequate texts unavailable)

[**eus**] **BASQUE (CENTRAL DIALECT)** isolate (France, Spain)

References consulted: Hualde (2003), Saltarelli et al. (1988)

Sound inventory

C phoneme inventory: /p b t d c ʃ k g ŋ ts tɕ tʃ f s x m n l ɰ r r/

N consonant phonemes: 23
Geminates: N/A
Voicing contrasts: Obstruents
Places: Bilabial, Labiodental, Dental, Alveolar, Palato-alveolar, Palatal, Velar
Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Trill, Lateral approximant
N elaborations: 2
Elaborations: Labiodental, Palato-alveolar
V phoneme inventory: /i e a o u/
N vowel qualities: 5
Diphthongs or vowel sequences: None
Contrastive length: None
Contrastive nasalization: None
Other contrasts: N/A
Notes: /c ɟ/ are recently phonemic; Saltarelli et al. give these as /tʰ dʰ/. /x/ may be very retracted. Zuberoan dialect also has /y/ and phonemic nasalized vowels.
Syllable structure
Complexity Category: Complex
Canonical syllable structure: (C)(C)V(C)(C) (Saltarelli et al. 1988 : 277-81; Hualde 2003 : 33-7)
Size of maximal onset: 1
Size of maximal coda: 2
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: Morpheme-internal (Onset, Coda)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: All consonants except for /r/ occur as simple onsets. Bi-consonantal onset clusters in language are non-native.
Coda restrictions: All consonants except /b d g p f m x/ occur as simple codas. Complex codas have /x s ʃ/, a liquid, or a nasal as C₁ and a plosive, affricate, or fricative as C₂. Stops or affricates are not allowed in word-internal codas.
Notes: Saltarelli et al. state that complex codas occur utterance-finally only; however, Hualde (2003) gives examples of nasal+fricative and liquid+fricative

Abbreviations

codas occurring word-internally, and a wide range of coda clusters occurring word-finally.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:
None

Phonetic correlates of stress: Pitch (instrumental)

Notes: The Bizcaian dialects have pitch accent system. [Saltarelli et al. \(1988 : 282–283\)](#) describe five different accentual systems for dialects of Basque .

Vowel reduction processes

Notes: There are processes of unstressed vowel reduction and even deletion of post-tonic vowels in the High Navarrese dialects ([HualdeUrbina2003: 56-7](#)).

Consonant allophony processes

eus-C1: A palatal lateral approximant is realized as a palatal fricative by some speakers ([Hualde 2003 : 29](#)).

eus-C2: Fricatives are realized as voiced preceding a voiced consonant ([Hualde 2003 : 24](#)).

eus-C3: A voiced stop may be realized as a fricative or approximant intervocalically ([Hualde 2003 : 19](#)).

Morphology

Text: “Text 4” ([HualdeUrbina2003: 906-912](#))

Synthetic index: 1.6 morphemes/word (462 morphemes, 284 words)

[ewe] EWE Atlantic-Congo, Volta-Congo (Ghana, Togo)

References consulted: [Ameka \(1991 \)](#), [Duthie \(1996 \)](#), [Jalloh \(2005 \)](#), [Stahlke \(1971 \)](#)

Sound inventory

C phoneme inventory: /p t̪ d̪ k g k̪p̪ ɡ̪b̪ t̪s̪ d̪z̪ φ β f v s z x ɦ m n ɲ ŋ r l w/

N consonant phonemes: 24

Geminates: N/A

Voicing contrasts: Obstruents

Places: Labial-velar, Bilabial, Labiodental, Dental, Alveolar, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 1

ewe-C1: Alveolar affricates and fricatives are realized as palato-alveolar preceding /i/ (Jalloh 2005 : 9).

Morphology

(adequate texts unavailable)

[fvr] FUR Furan (Sudan)

References consulted: Jakobi (1990), KutschLojengaWaag2004, Noel (2008)

Sound inventory

C phoneme inventory: /b t̪ d̪ ʃ k g f s m n ɲ l r w j/

N consonant phonemes: 16

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Alveolar, Palatal, Velar

Manners: Stop, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 1

Elaborations: Labiodental

V phoneme inventory: /i ɪ ɛ ə a ɔ ʊ u/

N vowel qualities: 8

Diphthongs or vowel sequences: Vowel sequences /ii ɪɪ ɛɛ aa ɔɔ ʊʊ uu ɪa iɔ iɛ aɪ aɪ ʊa ʊɔ ʊɛ/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /h/ occurs in only two lexical items and is variable in one of them, so I have omitted it here. /f/ is classified by Jakobi as voiceless bilabial stop by phonological criteria, but its actual realization is [f] in most contexts. [j] alternates with [z]. Noel give /ɖʒ/ instead of /ʒ/. Vowel system is from Kutsch LojengaWaag2004; Jakobi and Noel each give 5 vowels, /a ɛ i ɔ u/. Long vowels are analyzed as sequences by Jakobi.

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Jakobi 1990 : 53-8)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A
 Predictability of syllabic consonants: N/A
 Morphological constituency of maximal syllable margin: N/A
 Morphological pattern of syllabic consonants: N/A
 Onset restrictions: All consonants occur. Onset [j] occurs only as allophone of /i/ (as analyzed by author).
 Coda restrictions: All consonants except voiced obstruents /b d ʒ g/ and [z] (allophone of /j/) may occur.
 Suprasegmentals
 Tone: Yes
 Word stress: Not reported
 Vowel reduction processes
 fvr-R1: In 3-syllable words with the structure (C₁)V₁C₂V₂C₃V₃, where C₂ is /l/ or /r/, C₃ is /l/, /r/, or nasal /m n ɲ ŋ/, and V₁ and V₂ are identical, V₂ may optionally be deleted (Jakobi 1990 : 60-61).
 Consonant allophony processes
 fvr-C1: A palatal glide is realized as [z] word-initially (Jakobi 1990 : 19).
 Morphology
 Text: “A Fur text” (Jakobi 1990 : 125-127)
 Synthetic index: 1.2 morphemes/word (234 morphemes, 202 words)
 [grj] SOUTHERN GREBO Atlantic-Congo, *Volta-Congo* (Liberia)
 References consulted: Innes (1966, 1981), Newman (1986)
 Sound inventory
 C phoneme inventory: /p b t d c ʃ k g k͡p ɡ͡b f s h m̥ m̩ n̥ n̩ ŋ̩ m̩ l̩ w̩ j/
 N consonant phonemes: 25
 Geminaes: N/A
 Voicing contrasts: Obstruent, Sonorants
 Places: Labial-velar, Bilabial, Dental/Alveolar, Palatal, Velar, Glottal
 Manners: Stop, Fricative, Nasal, Lateral approximant, Central approximant
 N elaborations: 2
 Elaborations: Devoiced sonorants, Labiodental
 V phoneme inventory: /i ɪ e ɛ a ɔ o ʊ ĩ ẽ ɛ̃ ă ɔ̃ ã ũ/
 N vowel qualities: 9
 Diphthongs or vowel sequences: None
 Contrastive length: None
 Contrastive nasalization: Some
 Other contrasts: N/A

Abbreviations

Notes: Voiced nasal stops may be better analyzed as allophones of voiced stops (Newman 1986 : 176).

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Innes 1981 : 130, 1966: 15-16)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Notes: CCV shapes occur in loans; C₂ is always [l] or [w] (Innes 1981 : 130, 1966: 15-16). Innes reports that some words of the form CVCV contract to CCV in rapid speech; this is when the medial consonant is /d/ or /n/, and it results in C+[l] clusters (e.g., *pone* > *plē* ‘rat’, 1981: 130). Newman reports that there are many such words for which **only** CIV forms occur and there are no corresponding CVCV forms, but he gives examples which Innes lists alternating forms for. Because Innes provides evidence, I adopt his analysis. Newman also reports that C₂ in such clusters is generally pronounced as an ‘r-like tap’ rather than a lateral (1986: 177).

Suprasegmentals

Tone: Yes

Word stress: Disagreement (Innes reports stress; Newman 1986 reports he could not verify this)

Vowel reduction processes

grj-R1: In words of the form CVCV in rapid speech, V₁ is deleted if C₁ is a non-alveolar stop or /f, m, ɱ, ŋ/ and C₂ is /d/ or /n/; C₂ is realized phonetically as [l] when this process occurs (Innes 1981 : 130, 1966: 15-16).

Consonant allophony processes

(none reported)

Morphology

(adequate texts unavailable)

[hts] HADZA isolate (Tanzania)

References consulted: Kirk Miller (p.c.), Sands (2013), SandsEtAl2012, Bonny Sands (p.c.)

Sound inventory

C phoneme inventory: /p^h p b t^h t d k^h k g k^{hw} k^w ʔ p' k' k'^w k| k! k|| m n ɲ ŋ^w ŋ|' ŋ! ŋ!|' ŋ||' ŋ|| m^ph m^b n^th n^d ŋ^kh ŋ^g n^{ts} n^{dʒ} ɲ^{dʒ} ts dz tʃ tʃ̥ dʒ ts' tʃ' tʃ̥' f s ɬ ʃ l j w h/

N consonant phonemes: 55

Geminates: N/A

Voicing contrasts: Obstruents, Sonorants

Places: Bilabial, Labiodental, Dental, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral affricate, Lateral fricative, Lateral approximant

N elaborations: 10

Elaborations: Voiced fricatives/affricates, Devoiced sonorants, Prenasalization, Post-aspiration, Lateral release, Ejective, Click, Labiodental, Palato-alveolar, Labialization

V phoneme inventory: /i e a o u ɪ ũ/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: Some

Other contrasts: N/A

Notes: All voiced obstruents borrowed except for /b/, medial prenasalized plosives, and nasals apart from /m/ and /n/; however, sources unknown (Kirk Miller, p.c.). If we take this analysis to be accurate, then language has 49 consonant phonemes instead of 55. Vowel nasalization is marginally contrastive (Sands 2013 : 38).

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (TuckerEtAl1977: 309; Sands et al. 1996 ; Sands 2013)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: Yes

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Notes: Sands (2013) analyzes syllable structure as CV, where C includes pre-nasalized obstruents and V may be a nasal vowel. Kirk Miller (p.c.) analyzes syllable structure as CV(N), without nasal vowels. Miller also notes that onsets are obligatory, with predictable /h/ occurring in otherwise vowel-initial syllables.

Suprasegmentals

Tone: Yes

Word stress: No

Notes: Prominence may shift syllables according to context. Thus this may be a pitch accent language, but there is not enough information to characterize the stress pattern.

Vowel reduction processes

hts-R1: Final vowels frequently become voiceless, especially when preceded by /ʔ/ or other voiceless stops. This devoicing can extend to penultimate vowels, such that the final two syllables of a word in utterance-final position can become whispered. (Sands et al. 1996 : 177; Tucker et al. 1977: 309)

Consonant allophony processes

hts-C1: An ejective velar stop is realized as an affricate [kx'] by some speakers (Sands 2013 : 41).

hts-C2: An alveolar lateral approximant is realized as a flap intervocalically (Sands 2013 : 41).

Morphology

(adequate texts unavailable)

[huu] MURUI HUITOTO Huitotoan, *Nuclear Witotoan* (Colombia, Peru)

References consulted: Wojtylak (2017), Katarzyna Wojtylak (p.c.)

Sound inventory

C phoneme inventory: /p b t d k g ɸ ɖ ɸ β θ h m n ɲ r/

N consonant phonemes: 16

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Palato-alveolar, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/tap

N elaborations: 2

Elaborations: Voiced fricatives/affricates, Palato-alveolar

V phoneme inventory: /i ɛ a o u i: ɛ: a: o: u:/

N vowel qualities: 6

Diphthongs or vowel sequences: Diphthongs /ai ei ui auw ouw/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: /p/ occurs only marginally. Wojtylak labels /f v/ as labiodental but gives their typical realizations as [ɸ β]. Approximants [w j ɥ] occur but are not contrastive, occurring as allophones of vowels (2017: 75). /s/ occurs in speech of younger people bilingual in Spanish. Vowel sequences also occur, and may be realized as phonetic diphthongs, but they are transcribed as belonging to separate syllables and are described as being realized as such in slow/normal speech (2017: 90-93).

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Wojtylak 2017 : 93-95)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: None.

Coda restrictions: N/A

Notes: /ʔ/ may occur as a coda in restricted contexts.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress:

Differences in phonological properties of stressed and unstressed syllables:

Vowel Length Contrasts

Phonetic correlates of stress: Pitch (impressionistic)

Vowel reduction processes

(none reported)

Size of maximal word-marginal sequences with syllabic obstruents: N/A
 Predictability of syllabic consonants: Varies with CV sequence
 Morphological constituency of maximal syllable margin: N/A
 Morphological pattern of syllabic consonants: N/A
 Onset restrictions: All consonants occur.
 Suprasegmentals
 Tone: Yes
 Word stress: Not reported
 Vowel reduction processes
 iii-R1: When nasals and lateral approximants co-occur with central vowel /i/, these sequences are in free variation with syllabic consonants (Gerner 2013 : 31).
 Consonant allophony processes
 (none reported)
 Morphology
 Text: “Why do men have their livestock stay close to home?” (Gerner 2013 : 525-530)
 Synthetic index: 1.0 morphemes/word (465 morphemes, 455 words)
 [itl] ITELMEN Chukotko-Kamchatkan (Russia)
 References consulted: Bobaljik (2006), Jonathan Bobaljik (p.c.), Georg & Volodin (1999), Volodin (1976), Volodin & Zhukova (1968)
 Sound inventory
 C phoneme inventory: /p t k q ʔ p' t' k' q' tʃ tʃ' ɸ β s z ɬ x χ m n ŋ l j/
 N consonant phonemes: 23
 Geminates: N/A
 Voicing contrasts: Obstruents
 Places: Bilabial, Alveolar, Palato-alveolar, Velar, Uvular, Glottal
 Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral fricative, Lateral approximant
 N elaborations: 4
 Elaborations: Voiced fricatives/affricates, Ejective, Palato-alveolar, Uvular
 V phoneme inventory: /i e ə a o u/
 N vowel qualities: 6
 Diphthongs or vowel sequences: None
 Contrastive length: None
 Contrastive nasalization: None
 Other contrasts: N/A
 Notes: /r ɲ ʌ/ occur in Russian, Koryak loans. Some sources have /ʔ/ as a suprasegmental phenomenon, but Georg & Volodin consider it a segment.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)(C)(C)(C)V(C)(C)(C)(C) (Georg & Volodin 1999 : 38-44)

Size of maximal onset: 7

Size of maximal coda: 5

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: Nasal, Liquid

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset, Coda)

Morphological pattern of syllabic consonants: Lexical items (Liquid), Both (Nasal)

Onset restrictions: Apparently all consonants may occur as simple onsets. It seems almost any biconsonantal onset may occur. In triconsonantal onsets, generally any consonant may be added to a permissible biconsonantal onset, so long as one of the consonants is a voiceless stop or sonorant, but consecutive sequences of three voiceless stops, fricatives, or sonants are not allowed within lexical morphemes. There are many examples of 4-consonant onsets, which are combinations of two permissible biconsonantal onsets. Examples include /txn, ksxw, ktxl/. Five-consonant onsets include /kpłkn, kskqz/. Six-consonant onsets include /tksxqz/. The one example of a seven-consonant onset given is /kstk'łkn/.

Coda restrictions: There seem to be restrictions on simple codas; examples not given for /p' t' z j/ in this environment. Biconsonantal codas include /mx łq sx/. Triconsonantal codas include /płh młx/. Four-consonant codas include /nłfpx mpłx łtxłf/. Five-consonant codas include /nxłtxłf mstxłf/.

Notes: Combinability of consonants within clusters is subject to few constraints. “Das häufige Auftreten komplexer Konsonantengruppen gehört zu den auffälligsten Zügen der itelmenischen Phonologie.” (“The frequent occurrence of complex consonant clusters is one of the most notable traits of Itelmen phonology.” Georg & Volodin 1999 :38)

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed
Phonetic processes conditioned by stress: (None)
Differences in phonological properties of stressed and unstressed syllables:
 Not described
Phonetic correlates of stress: Intensity (impressionistic)
Vowel reduction processes
itl-R1: Vowels occurring in closed syllables ‘cluttered with consonants’ (${}_nCVC_n$) are less clear and reduced in quality (Volodin 1976 : 73).
itl-R2: Mid central vowel /ə/ may be realized as a high back unrounded vowel [u] or drop entirely in some contexts where the consonantal environment has no effect (Georg & Volodin 1999 : 13).
Consonant allophony processes
itl-C1: Some stops and affricates are labialized preceding a rounded vowel (Georg & Volodin 1999 : 16).
itl-C2: A voiceless bilabial stop is spirantized intervocalically (Georg & Volodin 1999 : 14-15).
itl-C3: A voiceless bilabial fricative is realized as an approximant preceding a consonant (Georg & Volodin 1999).
Morphology
Text: “Süddialekt” (Georg & Volodin 1999 : 250-262)
Synthetic index: 2.0 morphemes/word (876 morphemes, 438 words)
[kal] KALAALLISUT Eskimo-Aleut, *Eskimo* (Greenland)
References consulted: Fortescue (1984), Hagerup (2011), Jacobsen (2000)
Sound inventory
C phoneme inventory: /p t k q f: v s t̥ j x: ʏ χ ʁ m n ŋ ɳ l/
N consonant phonemes: 18
Geminates: /N:/, many others in morphophonological contexts
Voicing contrasts: None
Places: Bilabial, Labiodental, Alveolar, Palatal, Velar, Uvular
Manners: Stop, Fricative, Nasal, Lateral approximant, Lateral fricative
N elaborations: 3
Elaborations: Voiced fricative/affricates, Labiodental, Uvular
V phoneme inventory: /i a u i: a: u:/
N vowel qualities: 3
Diphthongs or vowel sequences: Diphthong /ai/
Contrastive length: All
Contrastive nasalization: None
Other contrasts: N/A

Notes: Geminate versions of /v ʏ ʁ/ are also voiceless, so are treated as separate phonemes here. Similarly, geminate version of /l/ — /ɭ:/ — differs in both voicing and manner of articulation, so it is included in the phoneme inventory here. /N/ usually occurs as a geminate except for in some morphophonological contexts; Jacobsen states that the geminate is only marginally contrastive. /s/ found only in central dialect region and is described as rapidly receding and merging with /ʃ/, with merger complete in younger speakers. /f h/ occur in loanwords. /a:/ much more common than other long vowels. Other historical diphthongs have merged into long vowels.

Syllable structure

Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Fortescue 1984 : 338-9)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: All(?) consonants occur.

Notes: Final geminates occur in syncopated exclamations.

Suprasegmentals

Tone: No

Word stress: No

Vowel reduction processes

kal-R1: Short high vowels /i u/ are produced as lax word-finally (Hagerup 2011 : 56-63).

kal-R2: Short high vowels /i u/ tend to be devoiced between voiceless consonants in open syllables (Fortescue 1984 : 335).

kal-R3: Long vowels are realized as shorter when preceding long consonants than they are preceding singleton consonants (Jacobsen 2000 : 65).

Consonant allophony processes

kal-C1: A voiceless alveolar stop is affricated preceding a high front vowel (Fortescue 1984 : 333).

kal-C2: Some stops and fricatives are realized with secondary palatalization adjacent to a high front vowel (Fortescue 1984 : 333).

kal-C3: A voiceless alveolar fricative is somewhat voiced intervocalically (Fortescue 1984 : 334).

kal-C4: A uvular stop may be realized as a fricative intervocalically (Fortescue 1984 : 333).

kal-C5: A voiced velar fricative is realized as a glide intervocalically (Fortescue 1984 : 334).

kal-C6: A velar nasal may be realized as a nasalized vowel intervocalically (Fortescue 1984 : 334).

Morphology

(adequate texts unavailable)

[kat] **GEORGIAN** Kartvelian, *Georgian-Zan* (Georgia)

References **consulted:** Aronson (1990, 1991), Chitoran (1998), Hewitt (1995), Jun et al. (2006), Shosted & Chikovani (2006), Skopeteas & Féry (2010), Vicenik (2010), Vogt (1958)

Sound inventory

C phoneme inventory: /b p^h ɸ t^h g k^h p' t' k' q' dʒ tʃ^h dʒ tʃ^h ʃ^h β z s ʒ ʃ ɣ χ h m n r l/

N consonant phonemes: 28

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Palato-alveolar, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Lateral approximant

N elaborations: 5

Elaborations: Voiced fricatives/affricates, Post-aspiration, Ejective, Palato-alveolar, Uvular

V phoneme inventory: /i e a o u/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: [β] alternates with [β]. Vicenik gives instrumental evidence that /b d g/ are voiced. Shosted & Chikovani have /v/ for the glide, as well as velars instead of /ɣ χ/. Robins & Waterson have a velarized lateral instead of a plain lateral approximant.

Syllable structure

Abbreviations

Category: Highly Complex

Canonical syllable structure: (C)(C)(C)(C)(C)(C)(C)(C)V(C)(C)(C)(C) (Hewitt 1995 : 19-20; Vogt 1958 ; Butskhrikidze 2002 : 197-205)

Size of maximal onset: 8

Size of maximal coda: 5

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset, Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur as simple onsets. Biconsonantal onsets include stop+stop, stop+affricate, stop+fricative, stop+sonorant, affricate+stop, affricate+fricative, affricate+sonorant, fricative+stop, and so on. Triconsonantal onsets include stop+stop+stop, stop+stop+sonorant, stop+affricate+stop, stop+sonorant+stop, fricative+stop+sonorant etc. stem-initially, and more when prefixes are involved. All larger onsets include sonorants such that there are no obstruent strings of more than three; e.g. /pʰrʰsʰkʰβ, ʰsʰqʰrt, brʰsʰqʰ/. Seven-consonant onsets include /gβʰsʰβtn/. Eight-consonant onsets include /gβʰprʰsʰkβn/.

Coda restrictions: All(?) consonants but /h/ occur in simple codas. Biconsonantal codas include /rt bs nd ds ls bt mt pt/. Triconsonantal codas include /gns χls/. Five-member codas include /nʰʃxls, rʰsʰqʰβs, rtʰkʰls/.

Notes: Vogt lists 740 onset clusters (of up to six members) and 244 stem-final clusters (of up to four members); however, he does not include morphologically complex clusters. True word-final clusters seem to be much more restricted than stem-final clusters, which are always followed by a vowel, which resyllabifies the cluster. However it does seem to be the case that sonorants are required in all onsets of more than three consonants and all codas of three consonant or more. A subset of clusters are known as ‘harmonic’ and consist of a non-velar stop or affricate followed by a homogeneous velar or uvular consonant. These have been analyzed as single segment, but Chitoran (1998) shows through instrumental analysis that they have phonetic and timing characteristics of sequences.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed
Phonetic processes conditioned by stress: (None)
Differences in phonological properties of stressed and unstressed syllables:
 (None)
Phonetic correlates of stress: Not described
Vowel reduction processes
 (none reported)
Consonant allophony processes
kat-C1: The uvular ejective stop may vary with an ejective uvular affricate variant (Aronson 1991).
kat-C2: A uvular ejective stop may vary with an ejective uvular fricative (Shosted & Chikovani 2006).
Morphology
Text: “The destiny of Kartli” (Hewitt 1995 : 655-663)
Synthetic index: 2.4 morphemes/word (594 morphemes, 246 words)
[kbc] KADIWÉU Guaicuruan (Brazil)
References consulted: Braggio (1981), Sandalo (1997)
Sound inventory
C phoneme inventory: /p b t d k g q tʃ dʒ ɸ m n l w j/
N consonant phonemes: 15
Geminates: /b: d: g: m: n: l: w: j:/ (Some)
Voicing contrasts: Obstruents
Places: Bilabial, Dental, Palato-Alveolar, Velar, Uvular
Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant
N elaborations: 3
Elaborations: Voiced fricatives/affricates, Palato-alveolar, Uvular
V phoneme inventory: /i e a o i: e: a: o:/
N vowel qualities: 4
Diphthongs or vowel sequences: None
Contrastive length: All
Contrastive nasalization: None
Other contrasts: N/A
Notes: Sandalo gives geminate counterparts of /m n l w j/ in the phoneme inventory. Sandalo analyzes /ɸ/ as a uvular stop phonologically, but since it is realized as a fricative in most positions, I use this symbol.
Syllable structure
Complexity Category: Complex

Canonical syllable structure: (C)(C)V (*Sandalo 1997* : 17-18)

Size of maximal onset: 2

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants may occur in simple onsets. In biconsonantal onsets, C₂ is always /ʁ/, C₁ may be stop or nasal (perhaps others too).

Notes: Sandalo's analysis has /ʁ d d:/ occurring as codas in clitics, but apparently these never surface as such phonetically, being deleted preceding consonants and resyllabified as onsets preceding vowels (1997: 16).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Intensity (impressionistic)

Vowel reduction processes

kbc-R1: Long vowels are optionally reduced to short vowels preceding a voiceless stop onset of a following syllable. Example given shows that following stop is lengthened (*Sandalo 1997* : 17).

Consonant allophony processes

kbc-C1: A voiced uvular fricative may be realized as a stop word-initially (*Sandalo 1997* : 16).

kbc-C2: A voiced alveolar stop is realized as a flap intervocalically (*Sandalo 1997* : 16).

kbc-C3: A voiced palato-alveolar affricate is realized as a fricative by some speakers (*Sandalo 1997* : 15-16).

Morphology

(adequate texts unavailable)

[kbd] **KABARDIAN** Abkhaz-Adyge, *Circassian* (Russia, Turkey)

References consulted: Applebaum (2013), Colarusso (2006), Gordon & Applebaum (2010), Kuipers (1960), Matasović (??)

Sound inventory

C phoneme inventory: /p b t d k^w g^w q q^w ʔ ʔ^w p' t' k'^w q' q'^w ʈʂ ɖʒ ʧ ʤ ʦ' ʢ' f
v s z ɬ ɮ ʒ ʒ x x^w ʁ ʁ^w ɸ ɸ^w ɸ^w h h f' ɬ' ɸ' m n r w j/

N consonant phonemes: 48

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Alveolar, Palato-alveolar, Alveolo-palatal, Velar, Uvular, Pharyngeal, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral fricative, Ejective

N elaborations: 7

Elaborations: Voiced fricatives/affricates, Ejective, Labiodental, Palato-alveolar, Uvular, Pharyngeal, Labialization

V phoneme inventory: /ə a a:/

N vowel qualities: 2

Diphthongs or vowel sequences: Diphthongs /aw jə/

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: /h/ is marginal; exists in the speech of older generations, mostly in Arabic loans (Matasović 10). Colarusso has /c ɟ/ or /t̪ d̪/ for /ʧ ʤ/. Colarusso doesn't have /y/. Other accounts posit two short vowels (ə a) and five long vowels (a: e: i: o: u:). There is a length contrast for /a/: /a:/ is back open, /a/ is central open.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)V(C)(C) (Colarusso 2006 : 4-20; Matasović 2010: 13; Applebaum 2013)

Size of maximal onset: 3

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasal, Liquid, Obstruent

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context (Nasal, Liquid), Varies with VC sequence (Nasal, Liquid, Obstruent)

Morphological constituency of maximal syllable margin: Morpheme-internal (Coda), Both patterns (Onset)

Morphological pattern of syllabic consonants: Unclear

Onset restrictions: All consonants occur as simple onsets. Biconsonantal onsets consist mostly of stop+fricative, e.g. /th bɤ^w pɤ/, but also rarely include two stops, e.g. /pq/. These clusters tend to be regressive, and clusters with labial first element are especially frequent. Examples of triconsonantal onsets include /bzw zby pɤt/.

Coda restrictions: Unclear whether there are restrictions on simple codas. Biconsonantal codas include /bz wf pɤ rt/.

Notes: Colarusso analyzes initial sequence in *zbyác* ‘I covered/thatched it’ as *z.byác*, but gives no articulatory/perceptual evidence for this (2006: 17). This analysis seems to be influenced by formal models of syllable structure. Matasović describes such sequences as onset clusters (2010: 13). [Applebaum \(2013\)](#) gives examples of complex codas.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental), Intensity (instrumental)

Notes: Duration and intensity are correlates of stress for most speakers.

Vowel reduction processes

kbd-R1: Low vowel /a/ is realized as higher [ɐ] when unstressed ([Applebaum 2013](#) : 98-9).

kbd-R2: Frequently a sequence of a short high vowel and a consonant is replaced by a syllabic consonant (results in syllabic nasals, liquids, and obstruents; [Kuipers 1960](#) : 24, 42-3).

kbd-R3: Word-final /ə/ is deleted after a stressed syllable ([Kuipers 1960](#) : 34, 42).

kbd-R4: Unstressed /ə/ preceding a stressed syllable is often deleted, so long as it does not produce an initial consonant cluster ([Gordon & Applebaum 2010](#) : 42).

Consonant allophony processes

kbd-C1: Voiceless plosives may have affricated release preceding a vowel (Kuipers 1960 : 17).

kbd-C2: Labiovelar and palatal glides are realized with slight glottal friction word-initially (Kuipers 1960 : 22).

kbd-C3: Stops are voiced preceding a voiced stop or fricative (Matasović 2010: 11).

kbd-C4: Voiceless ejective palato-alveolar affricate and fricative are realized as voiced word-medially (Kuipers 1960 : 19).

Morphology

Text: “Nart story” (Applebaum 2013 : 223-231)

Synthetic index: 2.5 morphemes/word (571 morphemes, 229 words)

[kbh] CAMSÁ isolate (Colombia)

References consulted: Juajibioy Chindoy 1962; Monguí Sánchez 1981; Fabre (2002); Howard (1967 ; 1972)

Sound inventory

C phoneme inventory: /p b t d k g ʈs ʈʂ ʈʃ ɸ s ʂ x m n ɲ l ɾ ʎ w j/

N consonant phonemes: 22

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palato-alveolar, Retroflex, Velar

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Palato-alveolar, Retroflex

V phoneme inventory: /i e ɨ a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: Diphthongs /ai oi ui ia io ie ua ue/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Monguí Sánchez give a very different consonant phoneme inventory than the others. Juajibioy Chindoy concurs with Howard and the others, but additionally lists affricate /pf/. Howard lists <ë> for what others list as /ɨ/; Monguí Sánchez gives /ə/ for this vowel.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)(C)V (Howard 1967 : 81-5, Howard 1972 : 84-9)

Size of maximal onset: 4

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Biconsonantal onsets are most commonly two voiceless consonants at different places of articulation, e.g. /xt st fʃt, tk tm ʃl nj/. Many combinations occur, but liquids and glides are restricted to C₂ position. In triconsonantal onsets, C₁ is /b t s ʃ n/ and apparently /ɸ/, C₂ is /d t k tʃ ʃs x ʃ ʒ m j/, and C₃ is /b k j m n r/. Examples include /stx ndm ɸxn stʃb sʃʃs/. 4-consonant onsets include /ɸstx/.

Notes: “Consonant clusters are very common in Camsá” (Howard 1967 : 81). Howard (1967) gives canonical syllable structure as (C)(C)(C)V, but updates it to (C)(C)(C)(C)V in Howard (1972), saying onsets may consist of four consonants when subject is 1st person plural (/ɸ-/). Some biconsonantal onsets (stop+stop, C+nasal sequences at different places of articulation) appear with brief transitional vocoid [ʔ] between consonants; similarly there are effects on length of fricatives in first versus second position of biconsonantal onsets, and sometimes an associated vocoid or offglide with those (1967: 82).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic)

Vowel reduction processes

kbh-R1: Word-final vowels occurring after a penultimate stress are optionally devoiced or deleted. This may occur in isolation but generally occurs in the mid-

dle of a clause (Howard 1967 : 86).

kbh-R2: Word-medial vowels are ‘practically eliminated,’ with syllables between the first syllable and the stressed syllable being ‘squeezed together’ (Howard 1967 : 86-7).

Notes: “Words are pronounced rapidly with vowels practically eliminated word medially. A degree of emphasis is placed on the vowel of the first syllable with the following syllables squeezed together before the stressed syllable.” (Howard 1967 : 86-7).

Consonant allophony processes

kbh-C1: A palatal glide is realized as a voiced palato-alveolar affricate following an alveolar nasal (Howard 1967).

kbh-C2: An alveolar flap is realized as [ɾ] word-initially (Howard 1967 : 78).

kbh-C3: A voiceless alveolar fricative is realized as voiced adjacent to a voiced alveolar stop (Howard 1967 : 78).

kbh-C4: A voiced bilabial stop may be spirantized in all environments (Howard 1967 : 77).

Morphology

(adequate texts unavailable)

[kbk] **GRASS KOIARI** Koiarian, *Koiaric* (Papua New Guinea)

References consulted: Dutton (1996)

Sound inventory

C phoneme inventory: /b t d k g ɸ β s h m n l j/

N consonant phonemes: 13

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Velar, Glottal

Manners: Stop, Fricative, Nasal, Lateral approximant, Central approximant

N elaborations: 1

Elaborations: Voiced fricatives/affricates

V phoneme inventory: /i e a o u/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: [β] alternates with [w], with [w] occurring before back vowels; perhaps it would be better analyzed as /w/.

Syllable structure

Abbreviations

Complexity Category: Simple

Canonical syllable structure: (C)V (Dutton 1996 : 7)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Consonant Allophony in Stressed

Syllables

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic)

Vowel reduction processes

(none reported)

Consonant allophony processes

kbk-C1: A voiced bilabial fricative is realized as a glide preceding non-front vowels (Dutton 1996).

kbk-C2: A voiceless bilabial fricative may be realized as [p] word-initially preceding a back vowel (Dutton 1996).

kbk-C3: An alveolar lateral approximant is realized as a flap preceding front vowels (Dutton 1996).

Morphology

Text: “Maruba” (Dutton 1996 : 72-76)

Synthetic index: 1.5 morphemes/word (488 morphemes, 318 words)

[kca] EASTERN KHANTY Uralic, *Khantyic* (Russia)

References consulted: Filchenko (2007), Andrey Filchenko (p.c.)

Sound inventory

C phoneme inventory: /p t c k q ʈ s ɣ m n ɳ ɲ r l ʎ ʟ w j/
N consonant phonemes: 19
Geminates: N/A
Voicing contrasts: None
Places: Bilabial, Alveolar, Palato-alveolar, Palatal, Velar, Uvular
Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant
N elaborations: 4
Elaborations: Voiced fricatives/affricates, Palato-alveolar, Uvular
V phoneme inventory: /i y e ø œ æ ɪ ə ʊ a ɔ o u/
N vowel qualities: 13
Diphthongs or vowel sequences: None
Contrastive length: None
Contrastive nasalization: None
Other contrasts: N/A
Notes: /r/ is described as an ‘alveolar-palatal trill’. /k q ɣ ɲ/ are described as ‘cacuminal’ (retroflex?). /ʈ/ occurs in Upper Yugan dialect only. /ə ə ø ɔ/ are ‘reduced’ vowels, produced as lax, weak, and short, commonly occurring in unstressed syllables.
Syllable structure
Complexity Category: Moderately Complex
Canonical syllable structure: (C)V(C)(C) (Filchenko 2007 : 53-7)
Size of maximal onset: 1
Size of maximal coda: 2
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: Morphologically Complex (Coda)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: C₁ may be any consonant except /ɲ/. C₂ is always a glide /β/ or /j/.
Coda restrictions: All consonants except for glides and glottal fricative /h/ are attested.

Notes: Canonical syllable structure includes coda clusters. These come about through derivation or inflection, and vowel epenthesis is employed “robustly and productively” such that most are not realized as coda clusters. However, derived coda clusters with a sonorant preceding a homorganic stop are more likely to be retained (e.g. *lol-t* ‘crack, dent’-PL). Description suggests that occurrence of clusters is a matter of probability, and there is an “extremely low probability of consonant clusters at the morphemic edges, word-initial, and word-final position” (Filchenko 2007 : 55). I therefore analyze this language as having Moderately Complex syllable structure.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Vowel Reduction

Phonetic correlates of stress: Not described

Differences in phonological properties of stressed and unstressed syllables:
Vowel Quality Contrasts (see notes)

Notes: /ə ə ø ɔ/ commonly occur in unstressed syllables, and their occurrence in a word may complicate typical patterns of stress assignment (if initial syllable in bisyllabic word has reduced vowel, stress shifts to next syllable).

Vowel reduction processes

kca-R1: Word-final vowels, particularly /ə/ and /ø/, are under-articulated, reduced, devoiced, or deleted (Filchenko 2007 : 56).

Consonant allophony processes

kca-C1: Voiceless velar stop and voiced velar fricative are realized as uvulars adjacent to back vowels (Filchenko 2007 : 41).

kca-C2: A labiovelar approximant may be realized as a bilabial stop following /m/ (Filchenko 2007 : 44-45).

kca-C3: A voiced velar fricative may be realized as a velar stop adjacent to /t k q tʃ/ (Filchenko 2007 : 45).

kca-C4: A voiced velar fricative may be realized as a velar stop intervocalically (Filchenko 2007 : 45).

kca-C5: Labial and dorsal consonants are palatalized preceding front vowels (Filchenko 2007 : 37).

kca-C6: A voiced velar fricative is realized as a labiovelar approximant following /u/ (Filchenko 2007 : 45-6).

Morphology

Text: “A bear in the river” (Filchenko 2007 : 582-588)

Synthetic index: 1.9 morphemes/word (649 morphemes, 342 words)
[ket] KET Yeniseian, *Northern Yeniseian* (Russia)
References consulted: Georg (2007), Vajda (2000)
Sound inventory
C phoneme inventory: /b t d k q s h m n ŋ l j/
N consonant phonemes: 12
Geminates: N/A
Voicing contrasts: Obstruents
Places: Bilabial, Alveolar, Velar, Uvular, Glottal
Manners: Stop, Fricative, Nasal, Central approximant, Lateral approximant
N elaborations: 1
Elaborations: Uvular
V phoneme inventory: /i e i ə a o u/
N vowel qualities: 7
Diphthongs or vowel sequences: None
Contrastive length: None
Contrastive nasalization: None
Other contrasts: N/A
Syllable structure
Complexity Category: Complex
Canonical syllable structure: (C)(C)V(C)(C)(C) (Georg 2007 : 80-4)
Size of maximal onset: 2
Size of maximal coda: 3
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels
Syllabic consonant patterns: Nasal
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: Predictable from word/consonantal context
Morphological constituency of maximal syllable margin: Morphologically Complex (Onset), or Both patterns (Coda)
Morphological pattern of syllabic consonants: Grammatical items
Onset restrictions: Apparently all consonants occur in simple onsets. Onset clusters have /b k d/ as C₁ and apparently any (?) consonant as C₂.
Coda restrictions: All consonants except /h/ occur as simple codas. Biconsonantal codas seem fairly unrestricted, though most end in /s/ (nominalizing suffix), /n/, or /ŋ/ (plural suffixes). Other biconsonantal codas such as /tl/, /ŋl/, /nt/,

Abbreviations

/kt/, and /qt/ may occur within roots. Triconsonantal codas always have a continuant as the second member and /s/ as the third member.

Notes: Canonical syllable structure differs here from Georg's reported patterns, which include two-consonant codas. In discussion on p. 84 he gives example of triconsonantal coda, which may occur when the nominalizer suffix -s is added to a coda ending in a continuant. All examples of biconsonantal onsets have stops as C₂ but it would seem based on patterns reported that any stem-initial C could occur in this position. What is written as /ʔ/ in Georg's transcriptions marks Tone 2 and shouldn't be analyzed as a consonant.

Suprasegmentals

Tone: Yes

Word stress: No

Notes: Falling tones are 'acoustically close to a dynamic stress'.

Vowel reduction processes

ket-R1: An unstressed high front vowel /i/ in the sequence VCiCV is syncope, if no non-permitted consonant cluster results (Georg 2007 : 214; "stress" here refers to tonal contour).

ket-R2: Vowels with second tone lose their tone except in absolute final position in phrase (Vajda 2000 : 15-16).

ket-R3: In post-tonal (non-initial) syllables and the second syllable of a disyllabic pitch contour, there is free variation between vowels and higher counterparts (Vajda 2000 : 11).

Consonant allophony processes

ket-C1: A voiceless alveolar fricative is sometimes realized as a palato-alveolar fricative or affricate preceding front vowels (Georg 2007 : 78).

ket-C2: A voiceless velar stop is realized as a voiced velar fricative intervocalically (Georg 2007 : 75).

ket-C3: A consonant is voiced preceding another consonant (Georg 2007 : 75).

ket-C4: A voiced alveolar stop is realized as a flap intervocalically in some dialects (Georg 2007 : 76).

ket-C5: Voiced bilabial stop, voiceless velar and uvular stops are spirantized intervocalically (Georg 2007 : 75-8).

Morphology

Text: "Two brothers" (Vajda2004)

Synthetic index: 2.3 morphemes/word (602 morphemes, 267 words)

[kew] EAST KEWA Nuclear Trans New Guinea, *Enga-Kewa-Huli* (Papua New Guinea)

References consulted: Franklin 1962; Franklin (1971); Franklin & Franklin (1978)

Sound inventory

C phoneme inventory: /^mb t ⁿd c k φ s x m n ɲ l r w j/

N consonant phonemes: 15

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palatal, Velar

Manners: Stop, Fricative, Nasal, Flap/Tap, Lateral Flap/Tap, Central Approximant

N elaborations: 1

Elaborations: Prenasalization

V phoneme inventory: /i e ə a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Palatal consonants are present in Eastern Kewa only, and do not occur before high vowels (Franklin & Franklin 1978 : 21). /e/ reported in 1971, 1978 references, but not 1962 references. /a/ produced slightly longer, but has no short counterpart.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Franklin 1971 : 11-12)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Suprasegmentals

Tone: Yes

Abbreviations

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:

Vowel Quality Contrasts

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic)

Notes: Pitch as a correlate of stress here indicates that perceptual or auditory height of a tone may be conditioned by stress placement.

Vowel reduction processes

(none reported)

Consonant allophony processes

kew-C1: A voiceless alveolar fricative is realized as palato-alveolar preceding a high vowel (Franklin 1971 : 24).

kew-C2: A voiceless bilabial or velar fricative may be realized as an affricate utterance-initially (Franklin 1971 : 24).

kew-C3: Fricatives may be voiced in fast speech (Franklin 1971 : 24).

Morphology

Text: “East Kewa” (lines 1-13, 32-58, Franklin & Franklin 1978 : 483-487)

Synthetic index: 1.4 morphemes/word (399 morphemes, 278 words)

[khc] TUKANG BESI NORTH Austronesian, *Malayo-Polynesian* (Indonesia)

References consulted: Donohue (1999)

Sound inventory

C phoneme inventory: /p t̪ k ɡ ʔ m̥p m̥b n̥t̪ n̥d̪ ŋk̪ ŋɡ ʃ ɸ β s h n̥s m̥ ŋ r l/

N consonant phonemes: 22

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Velar, Glottal

Manners: Stop, Fricative, Nasal, Trill, Lateral Approximant

N elaborations: 3

Elaborations: Voiced fricatives/affricates, Prenasalization, Implosive

V phoneme inventory: /i ɛ a o u/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: There are also palatal phonemes loaned from Indonesian/Trade Malay. Author presents distributional/reduplication/syllabification evidence for analyzing prenasalized stops as unitary rather than sequences in reduplication processes.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Donohue 1999 : 30-1)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Pitch (impressionistic)

Notes: Donohue speculates that *Tukang Besi* has an incipient pitch accent system that's developing through the regularization of phonetic properties of older non-contrastive stress system (1999: 34).

Vowel reduction processes

khc-R1: In casual speech, any word-final vowel can delete or become voiceless after a voiceless consonant (Donohue 1999 : 23).

Consonant allophony processes

khc-C1: Non-implosive bilabial stops may be realized as affricates preceding /a o/ (Donohue 1999 : 16).

khc-C2: Voiceless glottal fricative is realized as voiceless bilabial fricative preceding /u/ (Donohue 1999 : 19).

Abbreviations

khc-C3: A voiceless velar stop is realized as fronted preceding /i/ (Donohue 1999 : 19).

khc-C4: An alveolar trill may be realized as an alveolar, lateral, or retroflex flap intervocalically in some dialects and in casual speech (Donohue 1999 : 18).

khc-C5: An alveolar lateral approximant may be realized as a lateral or retroflex flap following a non-front vowel in some dialects and in casual speech (Donohue 1999 : 18).

khc-C6: A voiced velar stop is spirantized in lax environments, including between two unstressed vowels (Donohue 1999 : 27).

khc-C7: An implosive bilabial stop is realized as a fricative intervocalically (Donohue 1999 : 16).

khc-C8: Non-implosive bilabial stops may be spirantized preceding non-high back vowels (Donohue 1999 : 16).

Morphology

Text: “The heron and the monkey” (Donohue 1999 : 516-520)

Synthetic index: 1.5 morphemes/word (605 morphemes, 398 words)

[khr] **KHARIA** Austroasiatic, *Mundaic* (India)

References consulted: Peterson (2011)

Sound inventory

C phoneme inventory: /p b t̪ d̪ t̪ d̪ c ɟ k g ʔ bʰ tʰ dʰ tʰ dʰ cʰ ɟʰ kʰ gʰ f s h m n̪ ɲ ŋ ɾ ʈ ʡ w j/

N consonant phonemes: 32

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Retroflex, Palatal, Velar, Glottal

Manners: Stop, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Breathy voice, Post-aspiration, Labiodental, Retroflex

V phoneme inventory: /i ɛ a ɔ u/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Palatal stops often realized as affricates. The retroflex consonants are most often realized as post-alveolars. /ɭ/ is marginally phonemic, but there is a minimal pair distinguishing it from /ɖ/. [ʔ] is also described as extremely marginal,

does not seem to contrast with anything and is predictable in its distribution. /ε ɔ/ raise to /e o/ when lengthened. Status of diphthongs /ae ao ou oi ui/ doubtful to Peterson, as they do not occur before codas in the native vocabulary. Therefore he analyzes these as V+glide. Other authors consider nasalization to be marginally phonemic, but Peterson does not (2011: 27).

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Peterson 2011 : 32-3)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Diphthongs

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: Lexical items

Onset restrictions: C₁ may be any consonant except /t/ and /ŋ/.

Coda restrictions: /s/ and /h/ do not occur in native codas. Voicing, aspiration, and dental/retroflex contrasts neutralized in coda.

Suprasegmentals

Tone: No

Word stress: No

Notes: Word-level rising prosodic pattern defines the phonological word, but any syllable may be more prominent with respect to intensity.

Vowel reduction processes

(none reported)

Consonant allophony processes

khr-C1: A voiced velar stop is realized as a glottal stop syllable-finally (Peterson 2011 : 29).

Morphology

Text: “The nine totems” (first 8 pages, Peterson 2011 : 439-446)

Synthetic index: 1.5 morphemes/word (604 morphemes, 399 words)

[kɲ] KUNJEN (OYKANGAND DIALECT) Pama-Nyungan, *Paman* (Australia)

References consulted: Sommer (1969, 1981)

Sound inventory

Abbreviations

C phoneme inventory: /p t̪ c k p^h t̪^h c^h k^h f ð ɣ m ɲ n ɲ ŋ ɾ l w j/
N consonant phonemes: 23
Geminates: N/A
Voicing contrasts: None
Places: Bilabial, Labiodental, Dental, Alveolar, Palatal, Velar
Manners: Stop, Fricative, Nasal, Trill, Central approximant, Lateral approximant
N elaborations: 4
Elaborations: Voiced fricatives/affricates, Devoiced sonorants, Post-aspiration, Labiodental
V phoneme inventory: /ɪ e a o u/
N vowel qualities: 5
Diphthongs or vowel sequences: None
Contrastive length: None
Contrastive nasalization: None
Other contrasts: N/A
Notes: Prenasalized stops interpreted as a cluster on the basis of occurrence of reverse sequences and separate occurrence of component segments (1969: 34).
Syllable structure
Complexity Category: Highly Complex
Canonical syllable structure: (C)VC(C)(C)(C) (Sommer 1969 : 33-35; Sommer 1981 ; Dixon 1970)
Size of maximal onset: 1
Size of maximal coda: 4
Onset obligatory: No
Coda obligatory: Yes
Vocalic nucleus patterns: Short vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: Morpheme-internal (Coda)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: Unclear.
Coda restrictions: Simple codas unrestricted. Biconsonantal codas include nasal-nasal, lateral-stop, lateral-fricative, stop-nasal, rhotic-stop, rhotic-nasal, rhotic-glide, glide-glide. Triconsonantal codas have liquid as C₁ followed by stop-nasal or nasal-stop sequence, or stop-nasal-stop sequence in which first two members

are homorganic. Four-consonant codas consist of /l ɾ j/ followed by homorganic sequence of stop, nasal, and stop, e.g. /lbmb/.

Notes: This language is typologically unusual in that it is claimed to have no onsets. Sommer (1970, 1981) argues for this analysis using evidence from phonological processes in the language. Consonant-initial syllables are reported to occur in a few lexical items when these are sentence-initial: Sommer (1969: 16, 33) indicates that this is optional and limited to words which occur with high frequency in that environment, but Sommer (1981) suggests that this is an invariant pattern. Dixon (1970) disagrees with Sommer's analysis; in work with Olgolo he observed many invariant word-final vowels in the language. He analyzes the language as having V(C)(C) structure in initial syllables and CV(C)(C) syllables following that, with the limitation that a stem-final syllable can have at most one final consonant (1970: 274). Sommer criticizes Dixon for using data from the more distantly related Olgolo rather than from closely related Olgol to argue against patterns in Oykangand. Dixon also analyzes the language as having a series of pre-stopped nasals; this would affect the canonical syllable structure proposed by Sommer. Sommer argues for his sequential analysis of these structures in (1981: 242 ff)

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: Not described

Phonetic correlates of stress: Vowel duration (instrumental), Intensity (impressionistic)

Vowel reduction processes

kjn-R1: In fast speech, vowels tend toward an indeterminate central position resembling [ə] but maintain their rounding characteristics (Sommer 1969 : 41).

kjn-R2: High front vowel is realized as lax in unstressed, non-word-initial position (Sommer 1969 : 41).

Consonant allophony processes

kjn-C1: Unaspirated voiceless stops are voiced preceding a nasal (Sommer 1969 : 39).

kjn-C2: Unaspirated voiceless stops are sometimes voiced following a liquid (Sommer 1969 : 39).

Abbreviations

Morphology

(adequate texts unavailable)

[kms] KAMASAU Nuclear Torricelli, *Marienberg* (Papua New Guinea)

References consulted: Sanders & Sanders (1980)

Sound inventory

C phoneme inventory: /b t d tʃ dʒ k g ʔ ^mb ⁿd ⁿdʒ ^ŋg φ β s ɣ m n ɲ ɳ r w j/

N consonant phonemes: 23

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant

N elaborations: 3

Elaborations: Voiced fricatives/affricates, Prenasalization, Palato-alveolar

V phoneme inventory: /i e i a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: Vowel sequences /iu ia ie io ui ua ue uo ai au ao ei eu ea eo oi ou/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)(C)V(C) (Sanders & Sanders 1980 : 116-121)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Vowel sequences

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Varies with CV sequence

Morphological constituency of maximal syllable margin: Both patterns (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: C₁ may be a plosive, /^mb/, /s/, /r/, or nasal. C₂ is always /j/, /w/, or /r/.

Coda restrictions: All consonants except /w j/ may occur. CCVVC syllables are always closed by /ʔ/.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Unpredictable/Variable

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Not described

Vowel reduction processes

kms-R1: The vowel in a word-initial syllable preceding a stressed syllable has a tendency to be reduced, being deleted or overlapped with a preceding (nasal) consonant to produce a syllabic consonant (Sanders & Sanders 1980 : 114-115).

kms-R2: A low central vowel /a/ occurs as mid in an unstressed syllable (Sanders & Sanders 1980 : 122).

Consonant allophony processes

(none reported)

Morphology

Text: “Amu2 Text” (Sanders Sanders 1994: 85-94)

Synthetic index: 1.4 morphemes/word (639 morphemes, 455 words)

[knc] KANURI Saharan, *Western Saharan* (Chad, Niger, Nigeria, Sudan)

References consulted: Cyffer (1998), Hutchison (1981)

Sound inventory

C phoneme inventory: /b t d k g ^mb ⁿd ^ɲg tʃ dʒ f s z ʃ h m n r l w j/

N consonant phonemes: 21

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Prenasalization, Labiodental, Palato-alveolar

V phoneme inventory: /i e ə a ʌ o u/

N vowel qualities: 7

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: None

Abbreviations

Notes: Vowel sequences /aa ii uu ai au ia iu oi/ appear to be variable realizations in predictable contexts in which an intervocalic /g/ may be weakened or entirely lost.

Syllable structure

Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Hutchison 1981 : 15-17, Cyffer 1998)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Vowel sequences

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: Lexical items

Onset restrictions: None.

Coda restrictions: only sonorant consonants /l r m n/ occur (Hutchison 1981 : 15)

Notes: Hutchison states that onsetless syllables occur only in borrowings (1981: 15), but both Hutchison and Cyffer 1998 give examples of V-initial nouns, verbs, and demonstratives which seem unlikely to be borrowed (e.g., verb paradigm for ‘come’, demonstratives *ádə* and *ánjì*).

Suprasegmentals

Tone: Yes

Word stress: No

Vowel reduction processes

(none reported)

Consonant allophony processes

knc-C1: A voiceless alveolar fricative is realized as palato-alveolar preceding front vowels (Cyffer 1998 : 20).

knc-C2: A voiceless alveolar fricative is realized as a palatal stop when occurring after a consonant and before a front vowel (Cyffer 1998 : 21).

knc-C3: A voiceless labiodental fricative is realized as labial preceding a back rounded vowel (Cyffer 1998 : 23).

knc-C4: Voiceless consonants are voiced when occurring after a sonorant and preceding a vowel (Cyffer 1998 : 22).

knc-C5: A voiced velar stop is spirantized intervocally (Cyffer 1998 : 22).

knc-C6: A voiced bilabial stop may be realized as a labiovelar glide when occurring after a vowel or liquid (Cyffer 1998 : 22).

knc-C7: A voiceless alveolar fricative may be realized as a palato-alveolar affricate when occurring after a sonorant and preceding a front vowel (Cyffer 1998 : 21).

knc-C8: Velar stops are realized as corresponding glides when adjacent to front and back vowels, respectively (Cyffer 1998 : 22).

Morphology

(adequate texts unavailable)

[kpm] KOHO (SRE DIALECT) Austroasiatic, *Bahnaric* (Vietnam)

References consulted: LadefogedMaddieson1997, Manley (1972), Olsen (2014)

Sound inventory

C phoneme inventory: /p b t d c ʃ k g ʔ p^h t^h c^h k^h ʃ d s h m n ɲ m^h n^h ɲ^h r r^h l l^h w j/

N consonant phonemes: 30

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palatal, Velar, Glottal

Manners: Stop, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 3

Elaborations: Post-aspiration, Implosive

V phoneme inventory: /i e ɛ i̯ a ɔ o ʏ u i̯: e̯: ɛ̯: i̯: a̯: ɔ̯: ʏ̯: o̯: u̯:/

N vowel qualities: 10

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: LadefogedMaddieson1996 suspect the aspirated nasal are actually voiceless. Olsen argues that aspirated trill, lateral approximants are units, using morphological evidence. Manley doesn't list these, but does have /j^h w^h/ instead. Olsen shows VOT for aspirated sonorants is 2-3 times longer than for unaspirated stops, concluding that this indicates aspiration rather than voicelessness. [i̯] varies with [u̯]. /a̯/ occurs in subdialects A & B, but not C. /e̯ o̯ a̯/ almost always occur long. Long vowels are associated with pitch fall or rise; Manley analyzes pitch, not length as the conditioned feature (Manley 1972 : 15).

Syllable structure

Complexity Category: Complex

Canonical syllable structure: C(C)(C)V(C)(C) (Olsen 2014 : 30-40, Manley 1972 : 23-7)

Size of maximal onset: 3

Size of maximal coda: 2

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasals

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Phonemic

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset, Coda)

Morphological pattern of syllabic consonants: Lexical

Onset restrictions: All consonants may occur in simple onsets, though presyllable onsets are limited to unaspirated, unimploded obstruents. Biconsonantal onsets have a liquid or glide as C₂. Triconsonantal onsets are limited to a stop or /s m/ as C₁, /r l/ as C₂, and /w j/ as C₃.

Coda restrictions: In presyllables, simple codas are limited to liquids and /n/. In main syllables, simple coda may be liquid, nasal, glide, or glottal. Biconsonantal codas are glide + /ʔ h/.

Notes: This language has presyllables/main syllable distinction.

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: Vowel Quality Contrasts, Vowel Length Contrasts, Consonant Contrasts, Tonal Contrasts

Phonetic correlates of stress: Intensity (impressionistic)

Notes: Duration and pitch seem to be interdependent correlates of tone. Main syllable vowels have “attendant pitch length” (Olsen 2014 : 32).

Vowel reduction processes

kpm-R1: Long vowels decrease in duration if not occurring word-finally, particularly if unstressed (Olsen 2014 : 33).

kpm-R2: Presyllables tend to weaken or disappear in many environments (Olsen 2014 : 31).

Consonant allophony processes

kpm-C1: An alveolar trill is realized as a flap when occurring as second consonant of onset and preceding a vowel (Olsen 2014 : 24).

Morphology

Text: “Traditional village work” (Olsen 2014 : 106-107)

Synthetic index: 1.0 morphemes/word (90 morphemes, 89 words)

[ktb] KAMBAATA Afro-Asiatic, *Cushitic* (Ethiopia)

References consulted: Treis (2008)

Sound inventory

C phoneme inventory: /b t d k g ʔ p' t' k' tʃ dʒ tʃ' f s z ʃ ʒ: h m n ɲ: r rʔ l lʔ w j/

N consonant phonemes: 27

Geminates: /b: t: d: k: g: ʔ: p': t': k': tʃ: dʒ: tʃ': f: s: z: ʃ: ʒ: h: m: n: ɲ: r: rʔ: l: lʔ: w: j:/ (All, including some that don't have singleton counterparts)

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/tap, Trill, Central approximant, Lateral approximant

N elaborations: 5

Elaborations: Creaky voice, Voiced fricatives/affricates, Ejective, Labiodental, Palato-alveolar

V phoneme inventory: /i e a o u/

N vowel qualities: 5

Diphthongs or vowel sequences: Vowel sequences /ii ee aa oo uu/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: Voicing?

Notes: Singleton/geminate contrasts occur for all consonants intervocalically, except for /ʒ: ɲ:/ which are always geminate. Glottalized liquids /rʔ lʔ/ are rare and have ‘defective’ distribution. Treis analyzes phonetically long vowels as sequences of identical vowels. Phonemic status of voiceless vowels is not fully determined. These seem to be mostly predictable variants of voiced vowels, but there are exceptions to these patterns in a few grammatical contexts. There are no minimal pairs of words with the same stress pattern but with final vowels differing in voicing only (Treis 2008 : 20-22). Nasalized vowels are marginally phonemic, occurring in very few lexical items, most of which are ideophonic. I do not count nasalization as a contrastive feature here.

Abbreviations

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: CV(C) (Treis 2008 : 41)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: None.

Coda restrictions: Word-finally, no restrictions.

Notes: Many words end in ‘hardly audible final [ɪ]’ (p. 48). Phonetic diphthongs occur as a result of morphophonological processes.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Pitch (impressionistic)

Vowel reduction processes

ktb-R1: In some closed syllables, short vowels tend to be slightly centralized (Treis 2008 : 18).

ktb-R2: Unstressed word-final long vowels are at most half-long (Treis 2008 : 19).

ktb-R3: Unstressed word-final short vowels /i e a o u/ are subject to extra shortening (Treis 2008 : 20).

ktb-R4: Unstressed word-final short vowels /i a u/ are subject to devoicing (Treis 2008 : 20).

ktb-R5: Unstressed word-final /i/ may be deleted in rapid speech (Treis 2008 : 20).

Notes: There are two morphemes ending in /a/ which do not undergo the devoicing process in ktb-R4.

Consonant allophony processes

ktb-C1: A voiced bilabial stop is realized as an approximant intervocalically (Treis 2008 : 24).

ktb-C2: A nasal is realized as palato-alveolar preceding a palato-alveolar consonants (Treis 2008 : 34).

ktb-C3: An alveolar trill is realized as a flap intervocalically (Treis 2008 : 35).

Morphology

(adequate texts unavailable)

[kyh] KAROK isolate (United States)

References consulted: Bright (1957), Sandy (2014)

Sound inventory

C phoneme inventory: /p t k ʔ tʃ β f θ s ʃ x h m n ɾ j/

N consonant phonemes: 16

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Labiodental, Dental, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant

N elaborations: 2

Elaborations: Labiodental, Palato-alveolar

V phoneme inventory: /i a o u i: e: a: o: u:/

N vowel qualities: 5

Diphthongs or vowel sequences: Diphthong /ui/, perhaps more

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: /f/ only marginally contrastive with /s/ (Bright 1957 : 17). No length distinction in /e:/.

Syllable structure

Category: Moderately Complex

Canonical syllable structure: CV(C) (Bright 1957 : 11)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: All consonants occur.

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Other (tone and weight)

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables:
Not described

Phonetic correlates of stress: Not described

Notes: Sandy argues that stress placement is predictable and phonologically conditioned by requirements of tone, which in turn is determined by syllable weight/structure. Stress coincides with tone-bearing mora (Sandy 2014 : 40).

Vowel reduction processes

kyh-R1: An unstressed low central vowel /a/ without tone is realized as [ə] (Bright 1957 : 11).

kyh-R2: An unaccented word-initial short vowel preceding two consonants may be lost following a pause (Bright 1957 : 53).

kyh-R3: Long vowels in post-tonic syllables followed by a pause are realized with lower pitch and glottalization (Bright 1957 : 13).

kyh-R4: Syllables with short vowels may be realized with whispered voice in post-tonic position preceding a pause (Bright 1957 : 13).

Consonant allophony processes

kyh-C1: A voiceless velar fricative is realized with uvular trill release when occurring before a front vowel (Bright 1957).

kyh-C2: A voiceless velar fricative is realized as labialized when occurring after a back vowel (Bright 1957 : 8)

Morphology

Text: “How salmon was given to mankind” (AnguloFreeland1971: 202-4)

Synthetic index: 2.4 morphemes/word (614 morphemes, 252 words)

[lao] LAO Tai-Kadai, *Kam-Tai* (Laos, Thailand)

References consulted: Enfield (2004, 2007), Erickson (2001), Morev et al. (1979)

Sound inventory

C phoneme inventory: /p p^h b t t^h d t^w k k^h k^w k^{wh} ʔ ʔ^w t͡ʃ t͡ʃ^w f s s^w h m n ɲ ŋ^w l l^w v j/

N consonant phonemes: 28

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Alveolo-palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 3

Elaborations: Post-aspiration, Labiodental, Labialization

V phoneme inventory: /i e ε ə a ɔ o u i: e: ε: ə: a: ɔ: o: u: u:/

N vowel qualities: 9

Diphthongs or vowel sequences: Diphthongs /ia ua uə/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: /v/ varies between fricative and approximant, but approximant more common. Labialized consonants don't occur before rounded vowels. Because there are no Cj sequences in the language, the CG analysis is rejected for these (Erickson 2001 : 138). Diphthong /au/ occurs in Northern varieties.

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: CV(C) (Enfield 2007 : 33-5; Morev et al. 1979 : 20)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: Limited to /p t k ʔ m n ŋ w j/.

Suprasegmentals

Tone: Yes

Abbreviations

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:

Vowel Quality Contrasts, Vowel Length Contrasts, Consonant Contrasts, Tonal Contrasts

Phonetic correlates of stress: Not described

Vowel reduction processes

(none reported)

Consonant allophony processes

(none reported)

Morphology

Text: “A grammar of Lao” (Enfield 2007 : 488-497)

Synthetic index: 1.1 morphemes/word (381 morphemes, 362 words)

[lep] LEPCHA Sino-Tibetan, *Himalayish* (Bhutan, India, Nepal)

References consulted: Plaisier (2007), Sprigg (1966)

Sound inventory

C phoneme inventory: /p p^h b t t^h d ɬ t^h d c c^h k k^h g ʔ f s f^h v s z ʃ ʒ h m n ɲ ŋ
r l β j/

N consonant phonemes: 32

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Alveolar, Palato-alveolar, Retroflex, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 5

Elaborations: Voiced fricatives/affricates, Post-aspiration, Labiodental, Palato-alveolar, Retroflex

V phoneme inventory: /i e ə a ɔ o u u/

N vowel qualities: 8

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: [e] varies with [ɛ]. /ə/ approaches [ʌ] or [u] in some contexts.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: C(C)(C)V(C) (Plaisier 2007 : 30-32)
Size of maximal onset: 3
Size of maximal coda: 1
Onset obligatory: Yes
Coda obligatory: No
Vocalic nucleus patterns: Short vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: All consonants occur in simple onsets. Biconsonantal onsets have /j r l/ as C₂. Triconsonantal onsets have /k g p b f m l t^h/ as C₁, /r l/ as C₂, and /j/ as C₃.
Coda restrictions: Limited to /p t k m n ŋ r l/.
Suprasegmentals
Tone: Yes
Word stress: Yes
Stress placement: Weight-Sensitive
Phonetic processes conditioned by stress: (None)
Differences in phonological properties of stressed and unstressed syllables: Not described
Phonetic correlates of stress: Vowel duration (impressionistic), Intensity (impressionistic)
Notes: Duration a correlate of stress in open syllables. Pitch seems to be correlate not of stress but weak tonal system.
Vowel reduction processes
 (none reported)
Consonant allophony processes
lep-C1: A voiceless alveolar fricative is realized as palato-alveolar preceding a high front vowel (Plaisier 2007 : 27).
lep-C2: Velar stops are realized as palatalized preceding a front vowel (Plaisier 2007 : 21).
lep-C3: An alveolar trill varies (apparently?) freely with a flap (Plaisier 2007 : 28).
Morphology
Text: “The story of the jackal” (Plaisier 2007 : 165-168)

Abbreviations

Synthetic index: 1.7 morphemes/word (249 morphemes, 144 words)

[lez] LEZGIAN Nakh-Daghestanian, *Daghestanian* (Azerbaijan, Russia)

References consulted: Chitoran & Babaliyeva (2007), Haspelmath (1993), Kodzasov (1990), Yu (2004)

Sound inventory

C phoneme inventory: /p p^h b t t^h d t^w t^{wh} k k^h g k^w k^{wh} g^w q q^h q^w q^{wh} ʔ p' t' t'^w k' k'^w q' q'^w ts ts^h ts^w ts^{wh} tʃ tʃ^h ts' ts'^w tʃ' f s z s^w z^w ʃ ʒ x χ ɸ χ^w ɸ^w h m n l r j w/

N consonant phonemes: 54

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Palato-alveolar, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 7

Elaborations: Voiced fricatives/affricates, Post-aspiration, Ejective, Labiodental, Palato-alveolar, Uvular, Labialization

V phoneme inventory: /i y e æ a u æ: a:/

N vowel qualities: 6

Diphthongs or vowel sequences: None

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: Kodzasov has /β/ instead of /w/. /æ: a:/ are rather marginally contrastive with other vowels. Some dialects have /uɪ/.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)V(C)(C) (Haspelmath 1993 : 40-46)

Size of maximal onset: 3

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset, Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Biconsonantal onsets include sequences of voiceless obstruents or voiceless obstruent+sonorant. Triconsonantal onsets consist of three voiceless obstruents or two voiceless obstruents and an /r/ or /l/, include /krʃʃ, t^{hw}rp, ʃtk, kk'l ʃʃxr kst ktk/.

Coda restrictions: Biconsonantal codas have no restrictions, include /rd, st, mp, xt, lt, rk/.

Notes: Syllable structure has undergone changes recently and used to be canonically (C)V (Haspelmath 1993 : 46).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
Not described

Phonetic correlates of stress: Vowel duration (instrumental)

Vowel reduction processes

lez-R1: High vowels /i y u/ are devoiced and shortened, or deleted when occurring pre-tonically between voiceless obstruents, if both are not fricatives. Process occurs even if there is an intervening /r/ before the second obstruent (Haspelmath 1993 : 36-40; Chitoran & Babaliyeva 2007).

lez-R2: High vowels /i y u/ are optionally devoiced and shortened, or deleted when occurring between an obstruent and a sonorant followed by a stressed vowel (Haspelmath 1993 : 36-40; Chitoran & Babaliyeva 2007).

lez-R3: Mid front vowel /e/ is produced with higher quality in pre-stress syllables, especially when followed by /i/ in the next syllable (Haspelmath 1993 : 32).

Consonant allophony processes

lez-C1: A labiovelar approximant varies freely with a labial fricative variant (Haspelmath 1993 : 35).

lez-C2: An alveolar lateral approximant is velarized syllable-finally following a back vowel (Haspelmath 1993 : 35).

Morphology

Text: “Who is stealing the melons?”, “The magpie and the wolf” (Haspelmath 1993 : 448-456)

Synthetic index: 1.7 morphemes/word (249 morphemes, 144 words)

[lkt] LAKOTA Siouan, *Core Siouan* (United States)

Abbreviations

References consulted: Ingham (2003), LakotaLanguageConsortium2008, Mirzayan (2010), Rood & Taylor (1996)

Sound inventory

C phoneme inventory: /p p^h b t t^h k k^h ʔ p' t' k' tʃ tʃ^h tʃ^ʷ s z ʃ ʒ x ɣ h m n l w j/

N consonant phonemes: 26

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Post-aspiration, Ejective, Palato-alveolar

V phoneme inventory: /i e a o u ĩ ã ü/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: Some

Other contrasts: N/A

Notes: Rood & Taylor call /x ɣ/ velar; Mirzayan call these post-velar. /b/ has limited distribution but is unpredictable in some words. Nasal contrast of /i a u/. Only diphthong, /au/, used solely by men in greeting *hau*.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)V(C) (TaylorRood1996: 446-7, Mirzayan 2010 : 39, Ingham 2003 : 5)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Diphthongs, Vowel sequences

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Apparently any consonant may function as simple onset. Biconsonantal onsets include sequences of two plosives, plosive+fricative, frica-

tive+plosive, obstruent+voiced continuant sequences, and sequences of two voiced continuants.

Coda restrictions: Limited to /s ʃ h l b g/ word-internally, and /n m/ word-finally.

Notes: Syllabification usually follows morpheme boundaries

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (impressionistic), Intensity (impressionistic)

Notes: Duration is a significant correlate in certain segmental contexts. Intensity reported by UllrichEtAl2008 ('greater loudness'), but not instrumentally confirmed.

Vowel reduction processes

lkt-R1: In rapid speech any unstressed word-final vowel may be dropped. This process is very frequent but more common in certain morphosyntactic constructions (Mirzayan 2010 : 155-6, TaylorRood1996: 447).

Consonant allophony processes

lkt-C1: Velar stops are realized as palato-alveolar affricates following a high front vowel (Ingham2005).

lkt-C2: A voiceless glottal fricative is sometimes realized as a palatal glide (Ingham2005).

Morphology

Text: "Hunting eggs in the spring" (Ingham 2003 : 95-96)

Synthetic index: 1.3 morphemes/word (282 morphemes, 215 words)

[lpa] LELEPA Austronesian, *Malayo-Polynesian* (Vanuatu)

References consulted: Lacrampe (2014)

Sound inventory

C phoneme inventory: /k^w p t k f s ŋ^w m n ŋ l r w j/

N consonant phonemes: 14

Geminates: N/A

Voicing contrasts: None

Places: Labial-velar, Bilabial, Labiodental, Alveolar, Velar

Abbreviations

Manners: Stop, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Labiodental, Labialization

V phoneme inventory: /i e a o u a:/

N vowel qualities: 5

Diphthongs or vowel sequences: Diphthongs /ej aj aw ow/

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: Length distinction for /a/ only.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)(C)V(C)(C) (Lacrampe 2014 : 41-8)

Size of maximal onset: 3

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: Nasal, Liquid

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset, Coda)

Morphological pattern of syllabic consonants: Lexical items

Onset restrictions: All consonants may occur in simple onsets. In biconsonantal onsets, C₁ is a plosive, nasal, or fricative and C₂ is usually a liquid but can also be a fricative, stop, or glide. Triconsonantal onsets are /fsr, psr/).

Coda restrictions: Any consonant may occur in simple codas. The specific patterns for biconsonantal codas are unclear, but they include /lf, rk, ɲs nt ɲk lp/ and appear to be limited to sonorant+obstruent.

Notes: Syllable structure is in process of becoming more complex in this language, with rampant vowel reduction producing many codas and clusters, though many clusters are also invariant.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic), Intensity (impressionistic)

Notes: These correlates of stress do not necessarily co-occur; length especially is reduced in rapid speech.

Vowel reduction processes

lpa-R1: Mid front vowel /e/ is optionally reduced to [ə] when occurring in open unstressed syllables (Lacrampe 2014 : 34).

lpa-R2: Low central vowel /a/ is reduced to [ə] in unstressed syllables (Lacrampe 2014 : 34-5).

lpa-R3: After a consonant, word-final high vowels /i u/ and mid back vowel /o/ may be deleted or devoiced (Lacrampe 2014 : 15, 64-5).

lpa-R4: After a consonant, word-final mid front vowel /e/ and low vowel /a/ are reduced in quality, devoiced, or deleted (Lacrampe 2014 : 15, 64-5).

lpa-R5: A vowel filling the nucleus of a syllable preceding the syllable receiving primary stress is reduced in quality, when the word is three syllables or fewer and the stressed syllable has an onset (Lacrampe 2014 : 66; process does not occur if it produces an unattested consonant cluster).

lpa-R6: A vowel filling the nucleus of a syllable preceding the syllable receiving primary stress is deleted, when the word is four or more syllables, the stressed syllable is CV, and the reduced syllable is CV or V (Lacrampe 2014 : 66-7; process does not occur if it produces an unattested consonant cluster).

Notes: Processes R3-R6 are said to be more common in the speech of younger speakers.

Consonant allophony processes

lpa-C1: A voiceless velar stop is realized as uvular following a back vowel or /a/ (Lacrampe 2014 : 19).

lpa-C2: Stops and fricatives are optionally voiced intervocally (Lacrampe 2014 : 17).

lpa-C3: A voiceless velar fricative may be spirantized following a back vowel or /a/ (Lacrampe 2014 : 20).

Morphology

Text: “Text 1” (Lacrampe 2014 : 495-500)

Synthetic index: 1.4 morphemes/word (586 morphemes, 406 words)

Abbreviations

[lun] LUNDA Atlantic-Congo, Volta-Congo (Democratic Republic of Congo, Angola, Zambia)

References consulted: Kawasha (2003)

Sound inventory

C phoneme inventory: /p b t d k g ɸ ɓ f v s z ʃ ʒ h m n ɲ l w j/

N consonant phonemes: 22

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 3

Elaborations: Voiced fricatives/affricates, Labiodental, Palato-alveolar

V phoneme inventory: /i e a o u i: e: a: o: u:/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: Reasoning for not considering nasal+C sequences to be prenasalized stops given (2003: 24). Vowel length contrastive in just a few cases.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)(C)V (Kawasha 2003 : 20-21)

Size of maximal onset: 3

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Simple onsets are apparently unrestricted. In biconsonantal onsets, any non-glide consonant may occur as C₁ if followed by a bilabial glide /w/ as C₂. Nasal + consonant sequences also occur as biconsonantal onsets.

Triconsonantal onsets have a nasal as C₁, any non-nasal, non-glide consonant as C₂, and a glide (bilabial) as C₃.

Notes: Kawasha discusses onset restrictions in terms of glides, of which there are two (/w j/) in the language, but in examples only /w/ occurs in clusters.

Suprasegmentals

Tone: Yes

Word stress: Not reported

Vowel reduction processes

lun-R1: A word-final high vowel /i/ is realized as “voiceless and muted” when following semi-vowels /w j/, glottal consonant /h/, or nasal /m/ in continuous speech. Examples show that this is syncope, not devoicing (Kawasha 2003 : 37-8).

Consonant allophony processes

(none reported)

Morphology

(adequate texts unavailable)

[mcr] **MENYA** Angan, *Nuclear Angan* (Papua New Guinea)

References **consulted:** Whitehead (1992, 2004)

Sound inventory

C phoneme inventory: /p t k q^{mb} n^d ŋ^g ŋ^g ʃⁿ dʒ h m ŋ n ŋ w j/

N consonant phonemes: 17

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Palato-alveolar, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Prenasalization, Palato-alveolar, Uvular

V phoneme inventory: /i e ə a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: Vowel sequences /uə io ue uə ua ai uau/ (perhaps more)

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /q/ most frequent consonant phoneme in this language.

Syllable structure

Complexity Category: Highly Complex

Abbreviations

Canonical syllable structure: (C)(C)(C)V(C) (Whitehead 2004 : 226; SIL OPD)

Size of maximal onset: 3

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Vowel sequences

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: Both

Onset restrictions: No restrictions on simple onsets. Biconsonantal onsets include /tq, pk, pq/, at least, with suggestions of nasals occurring as well (2004: 9). Triconsonantal onsets include /tpq, ptq/ (/q/ typically produced as [ɣ] or [ʁ] after a plosive in clusters).

Coda restrictions: Nasals /m n/ occur.

Notes: Non-homorganic consonants are separated by extremely short vocalic segments which are inconsistently produced and represented, “more and more not being written” (Whitehead 2004 : 226). Quality seems to be conditioned by vowel harmony and/or surrounding consonants. When three plosives come together, there is a greater likelihood of one vowel being written but inconsistency as to which one (2004: 9).

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Not described

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables: Not described

Phonetic correlates of stress: Not described

Notes: Tone and stress described as interdependent in language, with tone being phonemic but having low functional load (Whitehead 2004 : 226).

Vowel reduction processes

(none reported)

Consonant allophony processes

mcr-C1: A voiceless dental stop is in free variation with a flap and a lateral approximant in intervocalic position (Whitehead 2004 : 9).

mcr-C2: A voiceless uvular stop varies with voiced uvular or velar fricatives in intervocalic position (Whitehead 2004 : 9).

Morphology

Text: “Hunting expedition” (first 20 pages, Whitehead 2004 : 238-257)

Synthetic index: 2.5 morphemes/word (745 morphemes, 301 words)

[mdx] DIZIN (CENTRAL DIALECT) Dizoid (Ethiopia)

References consulted: Allan (1976); Beachy (2005); Breeze (1988)

Sound inventory

C phoneme inventory: /p b t d k g p' t' k' t͡s t͡ʃ d͡ʒ t͡s' t͡ʃ' φ s z ʃ ʒ h m n ŋ r l w j/

N consonant phonemes: 27

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 3

Elaborations: Voiced fricatives/affricates, Ejective, Palato-alveolar

V phoneme inventory: /i e ε i̯ a o u i: e: a: o: u:/

N vowel qualities: 7

Diphthongs or vowel sequences: None

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: /ʔ/ is posited to avoid underlying syllabic nasals, otherwise its occurrence is completely predictable. I do not include it. /t͡s t͡ʃ' s z/ occur only in Western Dizin (Beach2005). Allan gives 24 consonant phonemes, lists an inventory that is quite divergent from those posited by Beachy and Breeze.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)V(C)(C)(C) (Beachy 2005 : 38-46)

Size of maximal onset: 1

Size of maximal coda: 3

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Phonemic

Morphological constituency of maximal syllable margin: Morpheme-internal (Coda)

Morphological pattern of syllabic consonants: Both

Onset restrictions: All consonants except /p/ may occur (though /p/ occurs as onset in loanwords).

Coda restrictions: For simple codas, all consonants except /ʔ, k', ɖʒ/ may occur. Biconsonantal coda combinations are fairly free, though not all possible combinations occur and most follow a rising sonority contour according to a standard six-point hierarchy. In tri-consonantal codas, C₁ is /j/, C₂ is /n/, and C₃ is /t, d, s, ʃ/.

Notes: Syllabic nasal nuclei occur only in syllables with predictable obligatory onset of [ʔ] and optional coda of /t/ (Beachy 2005 : 41).

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: Not described

Phonetic correlates of stress: Not described

Vowel reduction processes

mdx-R1: Short high vowels /i u/ are sometimes realized as voiceless when word-final (Beachy 2005 : 35-6).

mdx-R2: The phoneme /ɛ/ is optionally realized as [ə], but no conditioning environment given (Beachy 2005 : 37).

Consonant allophony processes

mdx-C1: A voiceless alveolar fricative is realized as voiced preceding /d/ (Beachy 2005 : 26).

mdx-C2: Voiced bilabial and velar stops are realized as fricatives word-finally (Beachy 2005 : 17).

mdx-C3: A voiceless bilabial stop varies with a bilabial fricative and a labio-dental fricative word-internally and word-finally (Beachy 2005 : 17).

Morphology

Text: “A lion and a fox” (Beachy 2005 : 154-158)

Synthetic index: 1.9 morphemes/word (485 morphemes, 251 words)

[mhi] MA'DI Central Sudanic, *Moru-Madi* (South Sudan, Uganda)

References consulted: Blackings & Fabb (2003)

Sound inventory

C phoneme inventory: /p b t d t^w d^w k g k^w g^w k̠p̠ ḡḡ ʔ ʔ^w m̠b̠ n̠d̠ n̠d^w ɲg̠ ɲg^w ɲ̠m̠ ḡḡ b̠ d̠ f̠ ḡḡ ɬ̠^w ɬ̠ ɬ̠ɬ̠ ɬ̠ɬ̠ f̠ v̠ s̠ z̠ h̠ m̠v̠ m̠ n̠ ɲ̠ ɲ̠m̠ r̠ r^w l̠ l^w j̠ w̠/

N consonant phonemes: 44

Geminates: N/A

Voicing contrasts: Obstruents

Places: Labial-velar, Bilabial, Labiodental, Alveolar, Palato-alveolar, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 6

Elaborations: Voiced fricatives/affricates, Prenasalization, Implosive, Labiodental, Palato-alveolar, Labialization

V phoneme inventory: /i ɪ e ε a ɔ o ʊ u/

N vowel qualities: 9

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes:

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Blackings & Fabb 2003 : 34-35)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: None. CC onsets may occur in loanwords in speech of educated people.

Coda restrictions: N/A

Notes: Codas may occur in ideophones and in educated variants.

Abbreviations

Suprasegmentals

Tone: Yes

Word stress: No

Vowel reduction processes

(none)

Consonant allophony processes

(none)

Morphology

Text: “Hare, Caragule, and the water dance” (Blackings & Fabb 2003 : 671-677)

Synthetic index: 1.09 morphemes/word (440 morphemes, 405 words)

[mio] PINOTEPA MIXTEC Otomanguean, *Eastern Otomanguean* (Mexico)

References consulted: Bradley1971; Costello (2014)

Sound inventory

C phoneme inventory: /p t̪ t̪ʰ k kʷ ʔ m̥ b̥ n̥ d̥ d̥ʰ ɲ g ʃ s ʃ m̥ n̥ ɲ l̥ r w j/

N consonant phonemes: 20

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Prenasalization, Palato-alveolar, Palatalization, Labialization

V phoneme inventory: /i e a o u i̯ e̯ ã õ ã̃ i̯ e̯ a̯ o̯ u̯ i̯ e̯ a̯ o̯ u̯/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: All

Other contrasts: Glottalization (All)

Notes: Author calls /ʔ/ a ‘semiconsonant’. /ʃ sʰ/ occur only in Spanish loans.
/x/ occurs in diminutive speech style.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Bradley 1970 : 14)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Notes: Bradley describes glottal stop as a semiconsonant which may attach to a vowel to form a complex nucleus and thus a 'checked' syllable (1970: 14). Costello analyzes syllable template as (C)V(C) with glottal stop as the only acceptable coda (2014: 24-5). Both authors note that checked syllables/glottal codas occur only in stressed/tonic syllables. Since the glottal stop has a very limited distribution and does not behave like a prototypical coda, I consider this language to have Simple syllable structure. The analysis of the glottal stop as a laryngeal feature of the syllable has been proposed for other Mixtecan languages as well (e.g., Juchitán Zapotec, MarlettPickett1987).

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: Not described

Phonetic correlates of stress: Vowel duration (impressionistic), Intensity (impressionistic)

Vowel reduction processes

mio-R1: A final unstressed vowel decays at the end of a terminal contour, following a pause (Bradley 1970 : 13).

Consonant allophony processes

mio-C1: Prenasalized dental stop may be realized as palato-alveolar in a post-tonic syllable immediately following the tonic syllable (Bradley 1970 : 6).

mio-C2: Labiovelar and palatal glides are fricated in tonic syllables (Bradley 1970 : 8).

mio-C3: /tʃ k kʷ/ may be realized as voiced in post-tonic syllables (Bradley 1970 : 5).

mio-C4: /kʷ/ is occasionally voiced in pretonic syllables (Bradley 1970 : 5).

Morphology

(adequate texts unavailable)

Abbreviations

[mjg] Tu Mongolic, *Southern Periphery Mongolic* (China)

References consulted: Slater (2003)

Sound inventory

C phoneme inventory: /p^h p t^h t k^h k q^h q t͡ʂ^h t͡ʂ t͡ʂ^h t͡ʂ t͡ʂ^h t͡ʂ^h f s ɕ ʃ χ m n ŋ l ɭ w j/

N consonant phonemes: 26

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Labiodental, Alveolar, Retroflex, Alveolo-palatal, Velar, Uvular

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Post-aspiration, Labiodental, Retroflex, Uvular

V phoneme inventory: /i e a o u/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /t͡ʂ^h t͡ʂ ɕ/ are described as being post-alveolar most often, but symbols indicate alveolo-palatal. Absence of contrastive vowel length is unusual for a Mongolic language.

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)(C)V(C) (Slater 2003 : 54-72)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: Liquid

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Phonemic

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: Lexical items

Onset restrictions: C₁ may be any consonant except /ŋ/, but may not be identical to C₂. C₂ must be glide /j/ or /w/.

Coda restrictions: Restricted to /ɭ ŋ n j w/.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Pitch (impressionistic), Intensity (impressionistic)

Notes: Different outcomes for /i/ and /e/. /i/ generally realized as somewhat central, but may move towards quality [i], especially in stressed syllables. /e/ is [ɛ]~[ə] in most contexts, but [ə] generally appears in stressed syllables without onset clusters or codas. I'm not coding this as vowel reduction because it seems there is free variation even within stressed syllables.

Vowel reduction processes

mjg-R1: High vowels /i u/ are realized as lax in unstressed syllables (Slater 2003 : 35).

mjg-R2: High vowels /i u/ and mid front vowel /e/ are often devoiced following a voiceless consonant. This typically occurs in medial unstressed syllables and is most regular following a voiceless fricative (Slater 2003 : 36).

Consonant allophony processes

mjg-C1: A palatal glide is realized as a fricative in the onset of a stressed syllable (Slater 2003 : 31-2).

mjg-C2: A retroflex approximant is realized as fricative [ʐ] in the onset of a stressed syllable (Slater 2003 : 30).

mjg-C3: A retroflex approximant is realized as an alveolar flap intervocalically before an unstressed vowel (Slater 2003 : 31).

Morphology

Text: "Rabbit's trick" (Slater 2003 : 343-350)

Synthetic index: 1.5 morphemes/word (547 morphemes, 377 words)

[mji] KIM MUN (VIETNAM DIALECT) Hmong-Mien, *Mienic* (Vietnam)

References consulted: Clark (2008)

Sound inventory

C phoneme inventory: /p b t d c ʃ k g f v θ s h m n ɲ ŋ l ʎ w j/

N consonant phonemes: 21

Geminates: N/A

Abbreviations

Voicing contrasts: Obstruents
Places: Bilabial, Labiodental, Dental, Alveolar, Palatal, Velar, Glottal
Manners: Stop, Fricative, Nasal, Central approximant, Lateral approximant
N elaborations: 2
Elaborations: Voiced fricatives/affricates, Labiodental
V phoneme inventory: /i e ε v a ɔ o u a:/
N vowel qualities: 8
Diphthongs or vowel sequences: None
Contrastive length: Some
Contrastive nasalization: None
Other contrasts: N/A
Notes: Length contrastive for /a/ only.
Syllable structure
Complexity Category: Moderately Complex
Canonical syllable structure: (C)(C)V(C) (Clark 2008 : 123-7)
Size of maximal onset: 2
Size of maximal coda: 1
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels, Long vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: Simple onsets unrestricted. For complex onsets, C₁ must be /p b t k g/, and C₂ must be /l w j/.
Coda restrictions: Restricted to nasals, glides, and /p t/.
Notes: It is possible Vietnam Kim Mun is in the process of losing onset clusters, as vowel epenthesis sometimes occurs in /kl/ sequences (Clark 2008 : 127).
Suprasegmentals
Tone: Yes
Word stress: Not reported
Vowel reduction processes
mji-R1: Long vowels are shortened and produced with level tone in non-word-final syllables (Clark 2008 : 117).
Consonant allophony processes

(none reported)

Morphology

(adequate texts unavailable)

[moh] MOHAWK Iroquoian, *Northern Iroquoian* (Canada, United States)

References consulted: Bonvillain (1973), Michelson (1981, 1988)

Sound inventory

C phoneme inventory: /t k ʔ dʒ s h n l j w/

N consonant phonemes: 10

Geminates: N/A

Voicing contrasts: None

Places: Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Voiced fricatives/affricates, Palato-alveolar

V phoneme inventory: /i ɪ e ʌ a o u~ /

N vowel qualities: 7

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: None

Notes: /ʌ u/ are nasalized. Peripheral phonemic vowel /ɪ/ occurs in two basic words (Bonvillain 1973 : 43). Bonvillain states vowel length is predictable.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)(C)V(C)(C)(C) (Bonvillain 1973 : 21-23; Michelson 1981, 1988: 12)

Size of maximal onset: 4

Size of maximal coda: 3

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Vowel sequences

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset, Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants may occur in simple onsets. Biconsonantal onsets are /nj tj kj kw ts ks st kt sk tk sh th kh/. Triconsonantal onsets always have /j s w h/ as a member, e.g. /tsj, ksk, kts, shw, shr, khn/. Four-consonant onsets are /shnj khnj/.

Coda restrictions: All consonants except /ḍʒ/ may occur in simple codas. Biconsonantal codas include /ks ʔs ts/. Triconsonantal codas are rare and highly restricted, include /ʔks ʔts kst/.

Notes: Michelson writes that vowel epenthesis predictably breaks up triconsonantal onsets (??), but lists many surface word-initial onsets in 1988 (p. 12).

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Pitch (impressionistic)

Notes: Some co-occurrence of length with stress: all long vowels stressed, but not all stressed vowels long; lengthening is thus dependent on accent.

Vowel reduction processes

moh-R1: The length of a long vowel may be somewhat diminished in keeping with phrasal and sentence contours (Bonvillain 1973 : 46).

Consonant allophony processes

moh-C1: A voiceless alveolar fricative is realized as palato-alveolar preceding /i/, by some speakers (Bonvillain 1973 : 31).

moh-C2: A labiovelar glide is realized as a labiodental fricative preceding /h/ (Bonvillain 1973 : 34).

moh-C3: A voiceless alveolar fricative is realized as voiced intervocalically (Bonvillain 1973).

moh-C4: A voiceless alveolar fricative is realized as voiced word-initially preceding a vowel (Bonvillain 1973).

moh-C5: Voiceless stops /t k/ are realized as voiced preceding a vowel with an optional intervening glide (Bonvillain 1973 : 28).

Morphology

(adequate texts unavailable)

[mpc] MANGARRAYI Mangarrayi-Maran (Australia)

References consulted: Merlan (1989)

Sound inventory

C phoneme inventory: /b d ɖ ʃ g ʔ m n ŋ ɲ l ɭ ɣ w j/
N consonant phonemes: 17
Geminates: N/A
Voicing contrasts: None
Places: Bilabial, Alveolar, Retroflex, Palatal, Velar, Glottal
Manners: Stop, Nasal, Central approximant, Lateral approximant
N elaborations: 1
Elaborations: Retroflex
V phoneme inventory: /i e a o u/
N vowel qualities: 5
Diphthongs or vowel sequences: None
Contrastive length: None
Contrastive nasalization: None
Other contrasts: N/A
Notes: Voiced stop symbols used for single stop series.
Syllable structure
Complexity Category: Complex
Canonical syllable structure: CV(C)(C) (Merlan 1989 : 186-96)
Size of maximal onset: 1
Size of maximal coda: 2
Onset obligatory: Yes
Coda obligatory: No
Vocalic nucleus patterns: Short vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: Both patterns (Coda)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: All consonants except for rhotics /ɻ ɣ/ may occur.
Coda restrictions: Any consonant may occur as simple coda. Biconsonantal codas consist of a non-nasal sonorant /l ɭ ɣ/ followed by a stop or nasal, or nasal followed by glottal stop (e.g. /ɲʔ/, p. 182).
Notes: V syllables result from the reduction of irrealis prefix forms *wa-* and *ja-* to *a-* (p. 196).
Suprasegmentals
Tone: No
Word stress: Yes
Stress placement: Fixed

Abbreviations

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Pitch (impressionistic), Intensity (impressionistic)

Vowel reduction processes

(none reported)

Consonant allophony processes

mpi-C1: Velar stops are realized as palato-alveolar affricates preceding /i/ (Allison 2012).

Morphology

(adequate texts unavailable)

[mpi] MPADE (MAKARI DIALECT) Afro-Asiatic, *Chadic* (Cameroon)

References consulted: Allison (2012), Mahamat (2005)

Sound inventory

C phoneme inventory: /p b t d k g^m bⁿ d^ɲ g ɓ ɗ k' tʃ dʒ ts' tʃ' f s z ʃ h m n ɾ l w j/

N consonant phonemes: 27

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 6

Elaborations: Voiced fricatives/affricates, Prenasalization, Ejective, Implosive, Labiodental, Palato-alveolar

V phoneme inventory: /i e i a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Mahamat (2005) does not give /^mb ⁿd ^ɲg/. Allison gives reasoning for differences (2012: 17-20).

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)(C)V(C) (Allison 2012 : 23-24)

Size of maximal onset: 3

Size of maximal coda: 1
 Onset obligatory: No
 Coda obligatory: No
 Vocalic nucleus patterns: Short vowels
 Syllabic consonant patterns: Nasal
 Size of maximal word-marginal sequences with syllabic obstruents: N/A
 Predictability of syllabic consonants: Predictable from word/consonantal context
 Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)
 Morphological pattern of syllabic consonants: Lexical items
 Onset restrictions: Apparently no restrictions on simple onsets. In biconsonantal onsets, the most common pattern is for C₁ to be a stop or fricative, and C₂ to be /r l w j/. /sk sk' ft/ onsets also occur. The only triconsonantal onset is /skw/.
 Coda restrictions: Only sonorants /m n l r w j/ occur.
 Suprasegmentals
 Tone: Yes
 Word stress: Not reported
 Vowel reduction processes
 (none reported)
 Consonant allophony processes
 (none reported)
 Morphology
 (adequate texts unavailable)
 [mri] MAORI Austronesian, *Malayo-Polynesian* (New Zealand)
 References consulted: Bauer (1999)
 Sound inventory
 C phoneme inventory: /p t k ɸ h m n ŋ r w/
 N consonant phonemes: 10
 Geminates: N/A
 Voicing contrasts: None
 Places: Bilabial, Alveolar, Velar, Glottal
 Manners: Stop, Fricative, Nasal, Flap/tap, Central approximant
 N elaborations: 0
 Elaborations: N/A
 V phoneme inventory: /i ɛ a ɔ u a:/
 N vowel qualities: 5

Abbreviations

Diphthongs or vowel sequences: Vowel sequences /ii ɛɛ ɔɔ uu æ ai əɔ au ɔa æ ɔi ɔɔ ɔu ɛa ɛi ɛɔ ɛu ua uɛ ui uɔ ia iɛ iɔ iu/.

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: /ɸ/ is variable in realization, was likely /f/ in past.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Bauer 1999 : 533-8)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic), Intensity (impressionistic)

Notes: Intensity is optionally a correlate of stress. Pitch here is a pitch fall. Secondary stress marked only by length.

Vowel reduction processes

mri-R1: The final vowel of a word spoken in isolation is frequently devoiced (Bauer 1999 : 546).

Consonant allophony processes

mri-C1: Stops may vary freely with affricates in stressed syllables (Bauer 1999 : 545).

mri-C2: A voiceless alveolar stop may be affricated preceding an unstressed, devoiced vowel; sometimes this process involves palatalization of the stop too (Bauer 1999).

mri-C3: In stressed syllables, /w/ may be produced with closer approximation (Bauer 1999 : 545).

Morphology

(adequate texts unavailable)

[nir] NIMBORAN Nimboranic (Indonesia)

References consulted: Anceaux (1965), May & May (1981), May (1997)

Sound inventory

C phoneme inventory: /p t k b ^mb d ⁿd ŋg s h m n ŋ ʎ w j/

N consonant phonemes: 16

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Retroflex, Velar, Glottal

Manners: Stop, Fricative, Nasal, Central approximant, Lateral flap

N elaborations: 2

Elaborations: Prenasalization, Retroflex

V phoneme inventory: /i e ʌ a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: Vowel sequences /ii ee ʌʌ aa oo uu ai ʌi ei ao ou/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /ʎ/ is used for retroflexed lateral flap. Prenasalized stops given by May with distributional justification. Extrasystematical phonemes /β/ and /x/ occur in one lexical item each (Anceaux 1965 : 9). Anceaux gives /i/ instead of /ʌ/. Long vowels are analyzed as vowel clusters.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)(C)V(C) (Anceaux 1965 : 31-6; May 1997 : 12-19; May & May 1981 : 12)

Size of maximal onset: 3

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Vowel sequences

Syllabic consonant patterns: Obstruent (Conflicting reports)

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants may occur as simple onsets. In biconsonantal onsets, all consonants except for /w j/ may occur as C₁. If C₁ is nasal or stop, then C₂ is /l j w/. Biconsonantal onsets /nt sp sw sk hm hn/ additionally occur. Triconsonantal onset patterns are limited to /skw skl sk^ɰglw blw/.

Coda restrictions: Limited to /m n ŋ p/. For a few speakers, a word-final vowel sequence /ii/ may be realized as [ik].

Notes: May notes that triconsonantal onsets with /w j/ as third member could be alternatively interpreted as biconsonantal onsets followed by a vowel sequence starting with /u/ or /i/; however he adopts the former analysis due to syllable peak patterns observed in the language (May 1997 : 17-18). May & May note that the initial fricative in /skl/ onsets may be syllabic ([ʃ.kl]), based on speaker reaction to syllable division in words with this cluster (1981: 29); however, reconsideration of the data in May 1997 leads to the triconsonantal analysis.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: Not described

Phonetic correlates of stress: Pitch (impressionistic), Intensity (impressionistic)

Notes: Vowel quality correlate for /ʌ/, /a/ may vary in very complex combinations of word, syllable, stress, and vowel contexts.

Vowel reduction processes

nir-R1: High front vowel /i/ is lowered when unaccented and preceding a word-final /ŋ/ (Anceaux 1965 : 10).

nir-R2: The low central vowel /a/ is in free variation with a higher variant if it precedes a consonant and an accented vowel (Anceaux 1965 : 13).

nir-R3: Mid back rounded vowel /o/ is realized as higher and unrounded when occurring word-finally and without accent (Anceaux 1965 : 14).

Consonant allophony processes

nir-C1: Sequences of alveolar stops, fricative, and nasal and /i/ vary with palatalized variants of the consonants when /i/ is unstressed (May & May 1981 : 18).

nir-C2: A voiceless bilabial stop is voiced preceding a voiced consonant (May 1997 : 30).

nir-C3: A voiceless bilabial stop varies with a fricative syllable-initially (May & May 1981 : 16).

nir-C4: A voiceless bilabial stop is spirantized intervocalically (May & May 1981 : 16).

Morphology

Text: “Sample text” (May 1997 : 172-177)

Synthetic index: 1.7 morphemes/word (334 morphemes, 198 words)

[niv] NIVKH (WEST SAKHALIN DIALECT) isolate (Russia)

References consulted: Gruzdeva (1998), Kreinovich (1979), Shiraishi (2006)

Sound inventory

C phoneme inventory: /p p^h t t^h c c^h k k^h q q^h ɸ β s z x ɣ χ ɬ h m n ɲ ŋ l ɾ r w j/

N consonant phonemes: 28

Geminates: N/A

Voicing contrasts: Obstruents, Sonorants

Places: Bilabial, Dental, Palatal, Velar, Uvular, Glottal

Manners: Stop, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Devoiced sonorants, Post-aspiration, Uvular

V phoneme inventory: /i e i̯ a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: The uvular/velar distinction is ‘nearly allophonic’. Gruzdeva posits a 3-way stop contrast between voiced, voiceless, and aspirated stops. I take Shiraishi’s analysis here.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)V(C)(C)(C) (Shiraishi 2006 : 29-30)

Size of maximal onset: 2

Abbreviations

Size of maximal coda: 3

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Both patterns (Onset, Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Apparently no restrictions on simple onsets. Biconsonantal onsets may not have plosive or /j/ as C₂.

Coda restrictions: Simple codas apparently unrestricted. Biconsonantal codas include /sk ʏs wk ɲɸ/. Examples of triconsonantal codas include /ntq/ and /ntχ/.

Notes: Gruzdeva (1998, for Amur and E. Sakhalin dialects) also lists /lms/, /lmr/, and /vdr/ codas.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Pitch (impressionistic)

Vowel reduction processes

(none reported)

Notes: in related Amur dialect, stress shift from 2nd to 1st syllable contributed to loss and reduction of vowels and distinct phonological character of this dialect.

Consonant allophony processes

niv-C1: A voiceless alveolar trill may be produced with palato-alveolar fricative release or vary with a voiceless palato-alveolar fricative (Shiraishi 2006 : 26).

niv-C2: Consonants become palatalized preceding front vowels, especially when stressed (Shiraishi 2006 : 23).

niv-C3: Non-aspirated plosives are realized as voiced following sonorants (Shiraishi 2006 : 25).

Morphology

Text: “A frog and a rat” (Gruzdeva 1998 : 58-61)

Synthetic index: 1.7 morphemes/word (408 morphemes, 240 words)

[nsm] SUMI NAGA Sino-Tibetan, *Kuki-Chin-Naga* (India)

References consulted: Teo (2009), Teo (2012)

Sound inventory

C phoneme inventory: /p p^h b t t^h d k k^h g q q^h tʃ tʃ^h f v ʃ ʒ x ɣ h m m^h n n^h ŋ l^h j/

N consonant phonemes: 28

Geminates: N/A

Voicing contrasts: Obstruents, Sonorants

Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 6

Elaborations: Breathy voice, Voiced fricatives/affricates, Post-aspiration, Labiodental, Palato-alveolar, Uvular

V phoneme inventory: /i e i̯ a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: Vowel sequences /iu ia ua uo oo ai oi/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Sreedhar1980 has [ʃ ʒ] not as contrastive but as allophones of /s z/. /ɪ/, which occurs in some recent loans, is argued by Teo to be nativized but marginal (2009: 36, 2012: 366). The language does not have phonologically contrastive vowel length, but phonetic long vowels and diphthongs result from phonological vowel sequences arising through morphological concatenation (Teo 2009 : 58-9). In at least some of these cases (perhaps all in the case of long vowels?), the long vowel/diphthong is one variant, where another might have an intervening glottal stop. In some cases long vowels may additionally occur through the variable deletion of an intervocalic glide. The list of vowel sequences given by the author does not distinguish the invariant forms from the variable forms, and may not be an exhaustive list for the language.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Teo 2009 : 57-64)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Diphthongs

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: Lexical items.

Onset restrictions: None in main syllables, only /p t k m/ occur in sesquisyllables.

Coda restrictions: N/A.

Notes: CC onsets occur in variation with sesquisyllabic cvC sequences. Simple codas occur in natural speech when a prefix precedes a sesquisyllable; this is likely the result of recent/ongoing vowel deletion (Teo 2009 : 62-4). Diphthongs are often the result of morphological concatenation.

Suprasegmentals

Tone: Yes

Word stress: No

Notes: Some parts of speech (monomorphemic verbs, numerals in isolation, some noun roots) have sesquisyllabic patterns (minor syllable with restricted set of consonants, vowels, and tones followed by a full syllable). However, this pattern is not pervasive throughout the language (other disyllabic verb and noun roots do not show sesquisyllabic patterns). Teo notes that minor syllables in sesquisyllabic structures could be argued to receive less prominence than full syllables, but that stress is “not phonemic” (2012: 371-372).

Vowel reduction processes

nsm-R1: Mid vowels /e o/ have free variants [ɛ ɔ] (Teo 2009 : 45-46, Teo 2012 : 369).

nsm-R2: High central vowel /i/ is sometimes realized as [ə] word-medially (Teo 2009 : 45).

nsm-R3: Word-medial and word-final high vowels /i ɪ u/ are prone to deletion following a fricative or /q^h/ (Teo 2009 : 66).

nsm-R4: Word-final high vowels are prone to deletion following a nasal (Teo 2012 : 369).

nsm-R5: Vowels in minor syllables may be altogether deleted between a stop and a lateral approximant (Teo 2012 : 370).

Consonant allophony processes

nsm-C1: An aspirated voiceless uvular stop /q^h/ often has an affricated release [q^χ] (Teo 2009 : 39).

nsm-C2: Labiodental fricative /v/ is realized as approximant [w] preceding back vowels /u o/ (Teo 2009 : 39).

nsm-C3: Labiodental fricative, alveolar nasals, and lateral approximant /v n n^h l^h/ are realized as palatalized preceding front vowels /i e/ (Teo 2009 : 40, 42).

nsm-C4: The voiced palato-alveolar fricative has a free affricated variant [d͡ʒ] (Teo 2009 : 40).

nsm-C5: Velar obstruents are realized as palatal preceding front vowels /i e/ (Teo 2012 : 368).

Morphology

(adequate texts unavailable)

[nuk] NUU-CHAH-NULTH Wakashan, *Southern Wakashan* (Canada)

References consulted: Carlson et al. (2001), Kim (2003), Rose (1981), Stonham (1999)

Sound inventory

C phoneme inventory: /p t k k^w q q^w ʔ ʔ' p' t' k' k'^w t͡s t͡ʃ t͡ʃ' t͡s' t͡ʃ' s ʃ x x^w χ χ^w h h m n m' n' j w j' w'/

N consonant phonemes: 35

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Alveolar, Palato-alveolar, Velar, Uvular, Pharyngeal, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral affricate, Lateral fricative

N elaborations: 7

Elaborations: Creaky voice, Lateral release, Ejective, Palato-alveolar, Uvular, Pharyngeal, Labialization

V phoneme inventory: /i a u i: a: u:/

N vowel qualities: 3

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: Stonham reports 39 consonants, including /q' q'^w h^w t^w/. Davidson has /q' q'^w/ but Kim shows these have merged with /ʔ/ in present language. /o e/ appear phonemically only in loanwords, vocative constructions, and expressions for speech act.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: CV(C)(C)(C)(C) (Kim 2003 : 161-6; Stonham 1999 : 47-55)

Size of maximal onset: 1

Size of maximal coda: 4

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morphologically Complex (Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants may occur as simple onsets.

Coda restrictions: Glottal(ized) and pharyngeal consonants do not occur as simple codas. Biconsonantal codas include /f̥sk, ks, tq, m̥f̥s/. Triconsonantal codas include /f̥sftq t̥h̥f̥s m̥xs p̥f̥s q̥f̥s/. Four-consonant codas are rare; C₁ must be a nasal, or the sequence /q̥h̥/ must occur: /mtq̥f̥ h̥sq̥h̥ nkq̥h̥ t̥hq̥h̥/. Sonorants do not follow obstruents in coda clusters, but there seem to be few manner/place restrictions on obstruent sequences.

Notes: Kim and Stonham both report canonical CV(C)(C)(C) structure, but Stonham lists a few cases of 4-consonant codas (1999: 48). Sequences of identical consonants occur only across morpheme boundaries.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic), Intensity (impressionistic)

Notes: Pitch may vary independently of the correlates of stress.

Vowel reduction processes

nuk-R1: Word-final short vowels are deleted (Rose 1981 : 25).

nuk-R2: Preceding a word-final coda, the rightmost vowel may be deleted if it is in a third or later syllable, is not obligatorily long, and is not already flanked

by consonant clusters. If the rightmost vowel does not fit these conditions, then the rightmost vowel which is capable of deleting will do so, given that it is in third or later syllable (Rose 1981 : 25).

nuk-R3: A vowel two syllables leftward of a deleted vowel is optionally deleted, if it is not in an inflectional suffix and is in a third or later syllable of the word (Rose 1981 : 25).

nuk-R4: Word-final long vowels are shortened (Rose 1981 : 27).

Notes: Interaction of processes in noo-R1, noo-R2, and noo-R3 may produce long consonant sequences, but only when fricatives are present between any occurring stops (Rose 1981 : 26).

Consonant allophony processes

nuk-C1: A consonant is labialized following /u/ and preceding another vowel (Stonham 1999 : 27).

Morphology

Text: “What mosquitoes are made of” (Stonham 1999 : 133-143)

Synthetic index: 2.6 morphemes/word (545 morphemes, 212 words)

[ood] TOHONO O’ODHAM Uto-Aztecan, *Southern Uto-Aztecan* (Mexico, United States)

References consulted: Dolores & Mathiot (1991), Fitzgerald (1994), Hale (1959), Hill & Zepeda (1992), Saxton (1963, 1982), Albert Alvarez Gonzalez (p.c.)

Sound inventory

C phoneme inventory: /p b t̪ d̪ k g ʔ tʃ dʒ s ʃ h m n ɲ l β j/

N consonant phonemes: 20

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Retroflex, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral flap

N elaborations: 3

Elaborations: Voiced fricatives/affricates, Palato-alveolar, Retroflex

V phoneme inventory: /i i̯ a o u i: i̯: a: o: u: i̯/

N vowel qualities: 5

Diphthongs or vowel sequences: Diphthongs / i̯ i̯u i̯o i̯a i̯i i̯u i̯o i̯a u̯i u̯i u̯o u̯a o̯i o̯i o̯u o̯a a̯i a̯i a̯u o̯a/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: Voicing (Some)

Notes: /l̪/ is a retroflex lateral flap. /o/ is often realized as [ɔ]. ‘Extra-short’ (voiceless) vowels sometimes represented in the orthography with a breve ˘, but

it is unclear whether these are the same vowels predicted by the rules below, or other vowels altogether. **Dolores & Mathiot (1991 : 236)** state that /i/ is phonemic.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: C(C)(C)(C)V(C)(C)(C)(C) (**Saxton 1982 : 100-102, Hale 1959 : 24-30, Hill & Zepeda 1992**)

Size of maximal onset: 4

Size of maximal coda: 4

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Vowel sequences

Syllabic consonant patterns: Obstruents

Size of maximal word-marginal sequences with syllabic obstruents: N/A (grammatical particles are independent, not phonologically bound to adjacent word)

Predictability of syllabic consonants: Unpredictable

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset, Coda)

Morphological pattern of syllabic consonants: Grammatical

Onset restrictions: All consonants may occur as simple onsets. Biconsonantal onsets are varied and governed by several complex patterns, but include all stop+spirant, spirant+unvoiced stop, nasal+homorganic nonnasal sequences, in addition to others, e.g. /ʃk sʃʃ bp mp dt dʒʃʃ kk ng/. Triconsonantal onsets include complex combination of biconsonantal patterns such as /spk/. 4-consonant onsets also include complex combination of biconsonantal patterns, include /ndʒʃʃ/.

Coda restrictions: Biconsonantal codas include /gs dk ms/. Triconsonantal codas include /kpn gʃp tpk bʃʃʃ/. 4-consonant codas include /ʃʃʃkʃʃ ʃʃspk/.

Notes: Saxton gives maximal onset of three consonants; however, Hale gives example of 4-consonant onset. Hale gives specific rules for consonant combinations, but these are difficult to interpret and include medial clusters. Description of phonetic characteristics is for clusters, not vowels that undergo predictable devoicing in certain environments. “Except in the case of a few words that drop an initial /v/ or /h/ [...] there are no words that possess an initial vowel in O’odham” (**Dolores & Mathiot 1991 : 238**).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: Vowel Quality Contrasts, Vowel Length Contrasts

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic), Intensity (impressionistic)

Notes: Dolores & Mathiot (1991) report that there is no stress, but others report it does occur.

Vowel reduction processes

ood-R1: Word-final unstressed short vowels /i i/ are devoiced when occurring between a non-laryngeal consonant and a pause (Saxton 1963 : 31).

ood-R2: Unstressed short vowels /i i/ are devoiced when occurring between a stop and a voiceless stop (Saxton 1963 : 31).

ood-R3: Word-final unstressed short vowels /a o u/ are devoiced following a stressed vowel (Saxton 1963 : 31).

ood-R4: Vowels have a voiceless offglide when preceding voiceless or devoiced consonants (Saxton 1963 : 31).

ood-R5: Vowels optionally have a voiceless offglide preceding a pause (Saxton 1963 : 31).

ood-R6: An unstressed vowel is deleted when flanked by consonants that form a permitted consonant cluster (Saxton 1982 : 103).

ood-R7: Unstressed vowels are reduced to [ə], except for noncentral vowels following consonants that are not /t tʃ/ (Saxton 1982 : 104).

Consonant allophony processes

ood-C1: Labial glide /β/ is realized as a fricative [β] or [ɸ] before /i/ or /a/ (Saxton 1963 : 31).

Morphology

Text: “The coyote and the jackrabbit” (Saxton 1982 : 263-266)

Synthetic index: 1.4 morphemes/word (353 morphemes, 250 words)

[opm] OKSAPMIN Nuclear Trans New Guinea, *Asman-Awyu-Ok* (Papua New Guinea)

References consulted: Loughnane (2009)

Sound inventory

C phoneme inventory: /t k k^w m^b n^d ŋ g ŋ g^w ɸ s x x^w m n l w j/

N consonant phonemes: 16

Geminates: N/A

Voicing contrasts: Obstruent

Places: Bilabial, Alveolar, Velar

Abbreviations

Manners: Stop, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Prenasalization, Labialization

V phoneme inventory: /i e ə a o u/

N vowel qualities: 6

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: The Lawrences also propose /əi ʊ/ for vowel inventory.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)V(C) (Loughnane 2009 : 63-73)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Varies with VC sequence (Nasal)

Morphological constituency of maximal syllable margin: Both patterns (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Any consonant may occur as a simple onset. In biconsonantal onsets, C₁ may be any consonant except for a glide /w j/ or labialized stop or fricative /k^w ŋg^w x^w/, and C₂ may be /j w l x/. /sk/ onsets also occur.

Coda restrictions: All consonants occur except for prenasalized stops.

Notes: The biconsonantal onset patterns described above include what Loughnane considers to be ‘marginal’ clusters: those that are realized for some speakers as clusters and for other speakers with a very short or full schwa vowel between the consonants (Loughnane 2009 : 64-5). Since these are regular patterns for some speakers I include them here.

Suprasegmentals

Tone: No

Word stress: No

Vowel reduction processes

opm-R1: Nasals may become syllabic in the fast speech of some speakers; example given (məmyan > myan) involves either deletion of initial CV or deletion of interconsonantal V and syllabification of nasal (Loughnane 2009 : 64).

Consonant allophony processes

opm-C1: A voiceless bilabial fricative is realized as a bilabial stop preceding a syllable boundary followed by a consonant (Loughnane 2009 : 33).

opm-C2: A voiceless bilabial fricative is realized as a stop word-finally (Loughnane 2009 : 33).

opm-C3: A voiceless velar fricative is realized as voiceless palatal fricative syllable-initially preceding a high front vowel or syllable-finally following a high front vowel (Loughnane 2009 : 42).

opm-C4: A voiceless velar fricative is realized as a voiced palatal fricative following /i/ and preceding another vowel (Loughnane 2009 : 42).

opm-C5: Voiceless fricatives are voiced intervocalically (Loughnane 2009 : 42).

Morphology

Text: “Echidna, laxjan bird, and bat” (Loughnane 2009 : 493-502)

Synthetic index: 1.7 morphemes/word (843 morphemes, 482 words)

[pac] PACOH Austroasiatic, *Katuic* (Vietnam)

References consulted: Alves (2000, 2006)

Sound inventory

C phoneme inventory: /p b t d c ʃ k ʔ p^h t^h k^h m n ɲ ɟ h r l w j w^ʔ j^ʔ/

N consonant phonemes: 23

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palatal, Velar, Glottal

Manners: Stop, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Creaky voice, Post-aspiration

V phoneme inventory: /i e ε æ i ə ʊ a ɒ ɔ u i: e: ε: æ: i: ə: ʊ: a: ɒ: ɔ: u:/

N vowel qualities: 12

Diphthongs or vowel sequences: Diphthongs /iə iə uə iə iə uə/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: Glottalization (some)

Notes: /ç/ ranges from alveolar to palatal fricative. The vowels transcribed as creaky voice differ in [RTR] value ([+RTR]), which manifests as both lower vowel quality and glottalic or ‘slight degree of raspiness’. This distinction is common in

Abbreviations

Mon-Khmer language and generally has phonation effects such as “breathiness, creakiness, or raspiness” (Alves 2006 : 14).

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: C(C)V(C) (Alves 2006 : 17-21)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasal, Liquid

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Phonemic

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: Lexical items

Onset restrictions: Simple onsets unrestricted. For complex onsets, C₁ must be a stop, and C₂ must be /l r/.

Coda restrictions: In main syllables, apparently all consonants occur. In pre-syllables, only sonorants occur.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables: Vowel Quality Contrasts, Vowel Length Contrasts, Consonant Contrasts

Phonetic correlates of stress: Vowel duration (impressionistic), Intensity (impressionistic)

Vowel reduction processes

(none reported)

Notes: Alves (2000) notes that only [ə] occurs as a vocalic nucleus in closed presyllables; however, this does not appear to be a currently productive process. Likewise syllabic nasals and liquids can only occur in presyllables with glottal-stop onsets. “Clearly, some kind of phonetic reduction is resulting in the loss of vowel distinctions in closed presyllables and in the complete loss of vowels in presyllables with nasals as the sonorant peaks ...” (2000: 22)

Consonant allophony processes

pac-C1: A labiovelar approximant is realized as a labiodental fricative word-initially (Alves 2006 : 11).

pac-C2: Velar consonants are labialized following /u/ or /o/ (Alves 2006 : 12).

Morphology

Text: “The Old Days” and “Pacoh Fellows and Girls” (Watson1980: 86-7, 182-4)

Synthetic index: 1.1 morphemes/word (557 morphemes, 520 words)

[pay] PECH Chibchan (Honduras)

References consulted: Holt (1986, 1999)

Sound inventory

C phoneme inventory: /p b t̪ k kʷ ʔ ʂ ʃ h m n r r̥ l̥ j w/

N consonant phonemes: 16

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Palato-alveolar, Velar, Glottal

Manners: Stop, Fricative, Nasal, Flap/Tap, Trill, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Palato-alveolar, Labialization

V phoneme inventory: /i e a o u i: e: a: o: u: ĩ ẽ ã õ ù ỹ: ẽ: ã: õ: ỹ: /

N vowel qualities: 5

Diphthongs or vowel sequences: Diphthongs /aj aw ej/

Contrastive length: All

Contrastive nasalization: All

Other contrasts: N/A

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)V(C)(C) (Holt 1999 : 20-21)

Size of maximal onset: 2

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Coda), Both patterns (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Apparently none for simple onsets. C₂ is /r/ in biconsonantal onsets.

Coda restrictions: In simple codas, all consonants except /p t k^w b ɹ m/ occur. Biconsonantal codas have /r/ as the first member, and only occur medially.

Notes: /pr, tr, kr, br/ onsets appear to be a recent development as a result of syncope of historical or underlying vowels. These vowels “often reappear in extremely slow, careful speech” (Holt 1999 : 20).

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: Not described

Phonetic correlates of stress: Not described

Notes: Pitch only hinted to be a correlate of stress (Holt 1986 : 238). Stress is apparently predictable on the basis of underlying tone (1999: 19). Holt describes tone system as being relatively simple, with tones associated with certain marked syllables and distributed to unmarked syllables through assimilation or prosodic patterns (so patterns somewhat predictable?).

Vowel reduction processes

pay-R1: In closed syllables, long vowels are realized as relatively short (Holt 1999 : 18).

pay-R2: Short vowels are usually open and lax in closed syllables and when unstressed (Holt 1999 : 18).

pay-R3: In rapid speech, unstressed high front vowel /i/ is sometimes realized as [ə] (Holt 1999 : 18).

pay-R4: In rapid speech, vowels in unstressed syllables are sometimes voiceless between voiceless consonants (Holt 1999 : 18).

pay-R5: Unstressed vowels are usually deleted between any consonant and a following /r/ (Holt 1999 : 23).

pay-R6: An unstressed interconsonantal vowel is often lost between two stressed syllables (Holt 1999 : 23).

pay-R7: The length of a long vowel can metathesize with that of a following consonant (usually /f/ or /k/), shortening the vowel and lengthening the following consonant (unclear if following C is in same syllable) (Holt 1999 : 24-5).

Consonant allophony processes

pay-C1: A voiceless palato-alveolar fricative may be realized as an affricate preceding a vowel (Holt 1999 : 16).

pay-C2: Glides may be realized as pre-stopped [d^j ɡw] when occurring word-initially (Holt 1999 : 16).

pay-C3: A voiceless velar stop is realized as voiced following a long vowel (Holt 1999 : 15-16).

pay-C4: A voiced bilabial stop is spirantized intervocalically (Holt 1999 : 16).

Morphology

Text: “Sample text” (Holt 1999 : 79-80)

Synthetic index: 2.8 morphemes/word (196 morphemes, 69 words)

[pib] YINE Arawakan, *Southern Maipuran* (Peru)

References consulted: Hanson (2010), Lin (1997), Matteson (1965), Parker (1989), Urquía SebastiánMarlett2008

Sound inventory

C phoneme inventory: /p t c k ts tʃ s ʃ ç h̥ m n l r w j/

N consonant phonemes: 16

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Alveolar, Palato-alveolar, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 1

Elaborations: Palato-alveolar

V phoneme inventory: /i e i̯ a o/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Urquía Sebastian reports /ç̞/ instead of /c/; Hanson notes these vary freely. /h̥/ has very wide range of variation (Hanson 2010 : 20-23). Matteson gives /u/ for Hanson’s /i/. Urquía Sebastián, Matteson report vowel length distinctions for all vowel qualities but Lin, Hanson report no contrastive vowel length.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: C(C)(C)V (Hanson 2010 : 25; Matteson 1965 : 22-32; Matteson & Pike 1958 ; Lin 1997 : 404-6; Lin1993)

Size of maximal onset: 3

Abbreviations

Size of maximal coda: N/A

Onset obligatory: Yes

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasal (Conflicting), Liquid (Conflicting), Obstruent (Conflicting)

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur as simple onsets. Biconsonantal onsets have no sonority constraints, though most identical clusters do not occur, and combinations of obstruents with similar place/manner rare. Examples of occurring biconsonantal onsets include /pt mw ɕp jw ks tm mt sm ms nn kn tl/. Triconsonantal onsets include /pɕr nkn wʈʃk nʈsp nʈʃk mtn/.

Notes: Hanson notes that word-internal nasals are often (but inconsistently) treated as ambisyllabic, but never treated as only codas (2010: 25). No other explicit examples of 3-obstruent clusters, but all triconsonantal clusters are morphologically complex and have consonantal prefix as first constituent (including pronominal prefixes /n-/ , /t-/ , /p-/ , /ɾ-/ , /w-/). Matteson states that C₁ may not be a fricative or affricate, but that there are no general restrictions on C₂ and C₃ (1965: 29-30). Combinatory restrictions on place/manner would still seem to allow three-obstruent codas. Additionally, Matteson states that the frequency of triconsonantal onsets was lower in 1965 than a count made a decade before. Therefore it could be that syllable structure in the language is simplifying. I classify it as having Highly Complex syllable structure, while acknowledging that such patterns may be marginal in the language.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Pitch (impressionistic)

Vowel reduction processes

pib-R1: A vowel in an (unstressed) utterance-final syllable may be wholly or partly voiceless (Matteson 1965 : 23).

pib-R2: Short low vowel /a/ may be realized as a neutral vowel in an (unstressed) utterance-final syllable (Matteson 1965 : 23).

pib-R3: Unstressed vowels are ‘somewhat more centralized but without any significant reduction’ (Hanson 2010 : 16).

Consonant allophony processes

pib-C1: A voiceless palatal stop varies freely with affricated variant [cç] (Hanson 2010 : 17).

pib-C2: An alveolar lateral approximant may be realized as a stop following a nasal consonant (Hanson 2010 : 24).

pib-C3: Stops are realized as voiced intervocally (Hanson 2010 : 17).

pib-C4: An alveolar lateral approximant is realized as an alveolar flap following a front or high central vowel (Hanson 2010 : 24).

Morphology

Text: “The anteater and the jaguars” (Hanson 2010 : 379-386)

Synthetic index: 2.1 morphemes/word (539 morphemes, 257 words)

[pol] POLISH Indo-European, *Balto-Slavic* (Poland)

References consulted: Gussman2007, Jassem (2003), Newlin-Łokowicz (??), Nowak (2006), Rocławski (??), Zydorowicz (2010)

Sound inventory

C phoneme inventory: /p b p^j b^j t̪ d̪ k g k^j g^j t̪ʃ d̪ʃ t̪ʃ d̪ʃ f v f^j v^j s z ʃ ʒ ɕ ʒ
x m m^j ŋ p r l j w/

N consonant phonemes: 35

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Alveolar, Palato-alveolar, Alveolo-palatal, Velar

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Labiodental, Palato-alveolar, Palatalization

V phoneme inventory: /i ɛ i̯ a ɔ u ɛ ɔ/

N vowel qualities: 6

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: Some

Other contrasts: N/A

Notes: Jassem and Gussman differ quite a bit in their C inventories. Palatalized labials are often realized a sequences of C^jj before vowels that are not /i/. Some of the consonants Gussman listed have been omitted here because they are predictable (/s^j z^j x^j/) or occur only in loanwords (/ʃ ʒ/, etc.). /ɛ ɔ/ have nasalized counterparts, which may be perhaps better analyzed as diphthongs: /ɛ^w ɔ^w/.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)(C)(C)V(C)(C)(C)(C)(C) (Gussman2007: 200-224; Jassem 2003 : 103; Zydorowicz 2010 , Bargiełowna 1950)

Size of maximal onset: 5

Size of maximal coda: 5

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: Nasal, Liquid

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Varies with CV sequence

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset, Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Biconsonantal onsets quite varied, include /kt fʃ tʃ nd jm gɖz pʃ dv dr pl gw sm mn wd/. Triconsonantal onsets include /sxl ʃkw pʃt bʒmⁱ xʃt tkʃ/. Four-consonant onsets include /pstr pʃtʃ fstr drgn fksʃ vʒgl/. Five-consonant onsets like /spstr/ may occur in phonological words.

Coda restrictions: Biconsonantal codas include /ɕfɕ st kt st rf wn nʃs lk wf/. Triconsonantal codas include /nʃt lɕn jsk psk stf rtf xtr/. Four-consonant codas include /pʃtʃ tʃtʃ rstʃ/, have strict limitations on final three consonants.

Notes: The examples presented in Bargiełowna (1950: 21) suggest that 5-C codas may occur in rare cases when phonemic nasalized vowel precedes 4-C cluster, e.g. *przestępstw* [pʃestempʃtʃ].

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental), Intensity (instrumental)

Notes: The pitch correlate here is a pitch slope.

Vowel reduction processes

pol-R1: Non-high vowels /ɛ ɔ a/ are more reduced in F1 and F2 domains in non-stressable positions (Nowak 2006 : 378-9).

pol-R2: In rapid speech, syllabic nasals and liquids may occur as optional variants of vowel-consonant sequences (occurs more often in grammatical elements; Rubach1974).

Consonant allophony processes

pol-C1: An alveolar trill is realized as a flap in rapid speech (Rocławski 1976: 132).

Morphology

(adequate texts unavailable)

[pqm] PASSAMAQUODDY-MALISEET Algic, *Algonquian* (Canada, United States)

References consulted: Leavitt (1996), LeSourd1993

Sound inventory

C phoneme inventory: /p t k k^w tʃ s h m n l w j/

N consonant phonemes: 12

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant

N elaborations: 1

Elaborations: Palato-alveolar

V phoneme inventory: /i ɛ ə a o ɔ:/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: Aspirated stops /p^h t^h k^h/ occur word-initially as a result of some morphophonemic contrasts and contrast with stop+/h/ (Sherwood1986). LeSourd argues that preaspirated stops are clusters (1996: 38-41). /o/ here is intermediate between [o] and [u]. /ə/ is never lengthened under stress, but is contrastive word-initially. According to LeSourd, vowel length is predictable in both dialects, except for /o/ and /o:/ before /w/.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)(C)(C)V(C)(C)(C) (LeSourd1993: 58-61, 121-160)

Size of maximal onset: 3

Size of maximal coda: 3

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset, Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur as simple onsets. Biconsonantal onset combinations are fairly unrestricted and include /pt tp pʃ sk^w hs/. Triconsonantal onsets are usually of the form CsC: /psk psk^w ksp ksk^w/, though /nkh/, /nsp/ occur in some stems.

Coda restrictions: All(?) consonants occur as simple codas (/h/ does not occur word-finally). Biconsonantal codas similar in form to onsets and are fairly unrestricted: /pʃ tk^w ʃk kp sk^w ts st hk^w/. Triconsonantal codas usually of form CsC, include /psk^w ksk^w nsk wsk/.

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic)

Notes: Duration a correlate of stress in open syllables. Language described as having pitch accent: a stressed syllable may bear high or low pitch/contour (LeSourd1993: 62).

Vowel reduction processes

pqm-R1: Unstressed/unstressable /ə/ is omitted more often than not after sequences of /h/C, /ss/, or between non-syllabic sonorants, except in slow or deliberate speech (LeSourd1996: 36).

pqm-R2: Unstressable vowels which are not eliminated by phonological syncope are often subject to phonetic reduction or deletion (LeSourd1996: 104).

Consonant allophony processes

pqm-C1: Voiceless stops may be voiced intervocalically (LeSourd1993: 37).

pqm-C2: Velar stops may be spirantized intervocalically (LeSourd1993: 37).

Morphology

Text: “A sample text” (Leavitt 1996 : 55-58)

Synthetic index: 2.1 morphemes/word (262 morphemes, 125 words)

[pwn] PAIWAN (SAICHIA DIALECT) Austronesian (Taiwan)

References consulted: Chang (2006)

Sound inventory

C phoneme inventory: /p b t d tʰ dʲ ɕ k ɡ ʔ ʔ̚ ʋ s z m n ŋ ɾ r ʌ β j/

N consonant phonemes: 22

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Retroflex, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/tap, Trill, Central approximant,

Lateral approximant

N elaborations: 4

Elaborations: Voiced fricatives/affricates, Labiodental, Retroflex, Palatalization

V phoneme inventory: /i ə a u/

N vowel qualities: 4

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Palatalized alveolars occur only in Saichia dialect. In Santimen, /ɾ r/ have merged. /h/ occurs in loans from Japanese in Saichia dialect.

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Chang 2006 : 31-34)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: Nasal, Obstruent

Size of maximal word-marginal sequences with syllabic obstruents: 2

Abbreviations

Predictability of syllabic consonants: Varies with CV sequence

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: Lexical items

Onset restrictions: None?

Coda restrictions: None?

Notes: Syllabic nasals and [ʂ ʐ ʃʂ] occur as result of variation with Cə sequences.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress:

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Pitch (instrumental), Intensity (instrumental)

Vowel reduction processes

pwn-R1: In rapid speech, /ə/ may be dropped following sibilants /s z ʃʂ/, often resulting in a syllabic consonant (Chang 2006 : 40-41).

pwn-R2: In rapid speech, /ə/ may be dropped following nasals /m n ŋ/ (Chang 2006 : 41).

pwn-R3: In rapid speech, /ə/ may be dropped preceding nasals /m n ŋ/ resulting in a syllabic nasal (occurs with schwa preceding nasal coda produced by pwn-R2; Chang 2006 : 41-42).

Consonant allophony processes

pwn-C1: Velar stops are fronted preceding high front vowel /i/ (Chang 2006 : 22).

pwn-C2: Labiovelar approximant /w/ is realized as a labiodental fricative [v] word-finally preceding a vowel (Chang 2006 : 40).

Morphology

Text: “*tjuvak* — Sea shells” (first 8 pages, Chang 2006 : 431-438)

Synthetic index: 1.26 morphemes/word (544 morphemes, 433 words)

[qvi] IMBABURA HIGHLAND QUICHUA Quechuan, *Quechua II* (Ecuador)

References consulted: Carpenter (1982), Cole (1982)

Sound inventory

C phoneme inventory: /p b t d k g ʃʂ ʈʂ ɸ β s z ʃ ʒ x m n ɲ l r w j/

N consonant phonemes: 22

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palato-alveolar, Palatal, Velar
Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Voiced fricatives/affricates, Palato-alveolar

V phoneme inventory: /i a u/

N vowel qualities: 3

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Carpenter gives series of aspirated stops, but Cole shows these have fricativized in Imbabura Quechua. /b d g β z/ are not indigenous but are now fully integrated/nativized (e.g., occur in suffixes). /r/ contrasts with flap in some dialect areas.

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Cole 1982 : 203-5)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: In native words, restricted to voiceless fricatives, liquids, and semivowels.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
Not described

Phonetic correlates of stress: Pitch (impressionistic), Intensity (impressionistic)

Vowel reduction processes

qvi-R1: Vowels /i a u/ appear in lax form when unstressed (Jake1983: 17; Cole 1982 : 203 reports this for word-final unstressed vowels only).

Consonant allophony processes

qvi-C1: A voiced alveolar flap is realized as retroflex fricative [ʒ] word-initially (Cole 1982 : 202).

qvi-C2: A voiceless velar fricative may be realized as [g] preceding a voiced consonant (Cole 1982 : 201).

qvi-C3: Voiceless stops and affricates are voiced following a nasal (Cole 1982 : 200).

Morphology

Text: “Minkaymanta” (Carpenter 1982 : 442-55) ****Ecuadorian dialect****

Synthetic index: 2.1 morphemes/word (206 morphemes, 97 words)

[roo] ROTOKAS North Bougainville, *Rotokas-Askopan* (Papua New Guinea)

References consulted: Firchow & Firchow (1969), Firchow et al. (1973), Robinson (2006, 2011)

Sound inventory

C phoneme inventory: /p t k g β ɾ/

N consonant phonemes: 6

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Velar

Manners: Stop, Fricative, Flap/Tap

N elaborations: 1

Elaborations: Voiced fricatives/affricates

V phoneme inventory: /i e a o u i: e: a: o: u:/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: Consonant phoneme representations are given as most characteristic allophonic realization. The contrast between voiceless, voiced, and nasal stops appears to have collapsed in Central Rotokas, producing this system, but these contrasts can still be found in Aita Rotokas (Robinson 2006).

Syllable structure

Complexity Category: Simple
Canonical syllable structure: (C)V (Robinson 2011 : 28-9)
Size of maximal onset: 1
Size of maximal coda: N/A
Onset obligatory: No
Coda obligatory: N/A
Vocalic nucleus patterns: Short vowels, Long vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: N/A
Morphological pattern of syllabic consonants: N/A
Onset restrictions: All consonants occur.
Suprasegmentals
Tone: No
Word stress: Yes
Stress placement: Weight-Sensitive
Phonetic processes conditioned by stress: (None)
Differences in phonological properties of stressed and unstressed syllables:
 Not described
Phonetic correlates of stress: Not described
Notes: Firchow and Firchow 1969 hint at interrelationship between length and stress, but do not elaborate.
Vowel reduction processes
 (none reported)
Consonant allophony processes
roo-C1: A voiceless alveolar stop may be realized as an affricate preceding /i/ (Robinson 2011 : 28).
roo-C2: A voiced alveolar flap varies freely with [n], [l], [d] (Firchow & Firchow 1969 : 274).
roo-C3: A voiced bilabial fricative varies freely with a voiced bilabial stop (Firchow & Firchow 1969 : 274).
roo-C4: A voiceless alveolar stop may be realized as a fricative preceding /i/ (Robinson 2011 : 28).
roo-C5: A voiced velar stop may be spirantized medially (Firchow & Firchow 1969 : 274).
Morphology
Text: “Matevu (version 2)” (Robinson 2011 : 293-304)

Abbreviations

Synthetic index: 2.2 morphemes/word (642 morphemes, 293 words)
[scs] NORTH SLAVEY (HARE DIALECT) Athabaskan-Eyak-Tlingit, *Athabaskan-Eyak* (Canada)
References consulted: Rice (1989, 2005)
Sound inventory
C phoneme inventory: /p t t^h k k^h k^w ʔ t' k' ts tʃ ts' tʃ' f s z ɬ ɰ ʒ x ɣ h m n r j w ʔw/
N consonant phonemes: 31
Geminates: N/A
Voicing contrasts: Obstruents
Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Velar, Glottal
Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral affricate, Lateral fricative
N elaborations: 8
Elaborations: Creaky voice, Voiced fricatives/affricates, Post-aspiration, Lateral release, Ejective, Labiodental, Palato-alveolar, Labialization
V phoneme inventory: /i e ε a o u ī ē ō/
N vowel qualities: 6
Diphthongs or vowel sequences: None
Contrastive length: None
Contrastive nasalization: Some
Other contrasts: N/A
Notes: The distinction between /e/ and /ε/ is contrastive in Hare. Nasal vowels are said to be derived by rules in Rice (1989), but Rice (2005) lists them as phonemic.
Syllable structure
Category: Moderately Complex
Canonical syllable structure: (C)V(C) (Rice 1989 : 143-53)
Size of maximal onset: 1
Size of maximal coda: 1
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels, Long vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: N/A
Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: Only [ʔ h j] occur, though others occur ‘underlyingly’.

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (impressionistic), Intensity (impressionistic)

Notes: Predictable stress-like properties occur, falling on V immediately preceding stem of verb or stem vowel of noun. A high tone on a vowel already bearing a high tone for some other reason gives the syllable extra prominence by increasing the pitch (Rice 2005 : 362).

Vowel reduction processes

(none reported)

Consonant allophony processes

scs-C1: Velar fricatives are labialized preceding a rounded vowel (Rice 1989 : 31).

scs-C2: Plain velar stops and the voiceless velar fricative are realized as palatal preceding a front vowel (Rice 1989 : 31).

scs-C3: Ejectives and plain consonants may be voiced intervocally (Rice 1989 : 31).

scs-C4: Voiceless palato-alveolar affricate may vary freely with [ʃ] (Rice 1989 : 35).

scs-C5: A voiceless velar fricative varies freely with a glottal fricative (Rice 1989 : 32).

scs-C6: A voiced velar fricative may be realized as a labiovelar approximant preceding a round vowel (Rice 1989 : 32).

Morphology

(adequate texts unavailable)

[**sea**] SEMAI Austroasiatic, *Aslian* (Malaysia)

References consulted: Dentan (2003), Diffloth (1976a, b), Philips (2007), Sloan (1988), Sylvia Tufvesson (p.c.)

Sound inventory

C phoneme inventory: /p b t d c ʃ k g ʔ m n ɲ ɕ h ɾ l w j/

N consonant phonemes: 19

Abbreviations

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Alveolar, Palatal, Velar, Glottal

Manners: Stop, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 0

Elaborations: N/A

V phoneme inventory: /i ɛ ə ɑ ɔ u iː eː ɛː ɪː ɑː ɔː oː uː ɪ̃ ɛ̃ ə̃ ɑ̃ ɔ̃ ỹ ɛ̃ː ɪ̃ː ɑ̃ː ɔ̃ː/

N vowel qualities: 9

Diphthongs or vowel sequences: None

Contrastive length: Some

Contrastive nasalization: Some

Other contrasts: N/A

Notes: /eː ɪː oː/ occur only long; there is contrastive nasalization for all but these.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: C(C)V(C) (Diffloth 1976, 1976b; Sloan 1988; Philips 2007)

Size of maximal onset: 2

Size of maximal coda: 1

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasal, Liquid, Obstruent

Size of maximal word-marginal sequences with syllabic obstruents: 4 (initial)

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)

Morphological pattern of syllabic consonants: Grammatical items

Onset restrictions: All consonants may occur in simple onsets. Examples of biconsonantal onsets include /dn gh cr/.

Coda restrictions: All consonants except voiced stops may occur.

Notes: Philips (2007) reports CVC maximum for both major and minor syllables, with optional elision of /ə/ in minor syllable. However, both Diffloth and Sloan report that some roots have two initial consonants before the main vowel.

Sloan's data (from Diffloth) includes reduplicated (expressive) forms, in which $C_1(V)C_2VC_3 > C_1C_3C_1C_2VC_3$, e.g. $d\eta\phi h > dh d\eta\phi h$. Sloan takes canonical major syllable to be $C(C)V(V)(C)$, with minor syllables being of the shape C or CC , where obstruents such as $/p/$ or $/c/$, as well as more sonorous consonants, may occur (1988: 320-1). This results in word-initial sequences such as $/sts/$, $/krk/$, $/p-npr/$, and larger strings as in $kckmr\epsilon:c$ 'short, fat arms', syllabified $/kc.km.r.\epsilon:c/$. In the Kampar dialect, long sequences of up to five consonants may occur in intensification constructions formed through reduplication, and some roots have word-initial sequences of three consonants (Sylvia Tufvesson, p.c.). It appears that the longest string of obstruents word-initially is 4: $/gpgh/$. Much like syllables without vowels in Tashlhiyt, Semai minor syllables "are clearly heard and perceived as distinct syllables" (1988: 320). Because the unusual syllable patterns of this language produce strings of 3 obstruents or greater word-initially, I classify this language as Highly Complex.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:

Vowel Quality Contrasts, Vowel Length Contrasts

Phonetic correlates of stress: Not described

Vowel reduction processes

sea-R1: Preceding glottal consonants, some long vowels ($/e: i: o:/$) are produced as short (Philips 2007 : 10-11).

Consonant allophony processes

sea-C1: Palatal stops have affricated release syllable initially (Philips 2007 : 5).

Morphology

(adequate texts unavailable)

[shi] TASHLHIYT Afro-Asiatic, *Berber* (Morocco)

References consulted: Coleman (2001), Dell & Elmedlaoui (2002), Gordon & Nafi (2012), Louali & Puech (1999), Ridouane (2002, 2007, 2008, 2014), Roettger et al. (2015)

Sound inventory

C phoneme inventory: $/b\ t\ d\ t^s\ d^s\ k\ g\ k^w\ g^w\ f\ s\ s^s\ \int\ \chi\ \chi^w\ \text{h}\ h\ z\ z^s\ \text{ʒ}\ \text{ʁ}^w\ \text{ʔ}\ m\ n\ w\ l\ l^s\ r\ r^s\ j/$

N consonant phonemes: 34

Abbreviations

Geminates: /b: t: d: t^ɕ: d^ɕ: k: g: k^w: g^w: q: q^w: f: s: s^ɕ: ʃ: χ χ^w ɬ: h: z: z^ɕ: ʒ: ʒ^ɕ: ʁ: ʁ^w: ʕ:
m: n: w: l: l^ɕ: r: r^ɕ: j:/ (All, including some that don't have singleton counterparts)

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Palato-alveolar, Velar, Uvular, Pharyngeal, Glottal

Manners: Stop, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 7

Elaborations: Voiced fricatives/affricates, Labiodental, Palato-alveolar, Uvular, Pharyngeal, Labialization, Pharyngealization

V phoneme inventory: /i a u/

N vowel qualities: 3

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: All consonants have short/long counterparts except for /q: q^w: ʒ: ʒ^ɕ/, which are analyzed by Ridouane as long. /n^ɕ ʃ^ɕ/ are extremely marginal, according to Ridouane.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: (C)V(C) (DellElmedloui2002, Ridouane 2008)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: Nasal, Liquid, Obstruent

Size of maximal word-marginal sequences with syllabic obstruents: ? (words without vowels)

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: Both

Onset restrictions: None for simple onsets.

Coda restrictions: Unclear.

Notes: Dell & Elmedlaoui propose (C)V(C) structure with consonantal nuclei allowed. Puech & Louali (1999) present experimental acoustic and perceptual

data which suggest biconsonantal onsets, at least; **Ridouane (2008)** argues against this using a variety of phonetic experiments and phonological processes. Regardless of the analysis of syllable structure, the phonetic patterns have long sequences of consonants (including obstruents) word-initially, medially, and finally, and therefore fits our definition of Highly Complex.

Suprasegmentals

Tone: No

Word stress: No

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (instrumental), Intensity (instrumental)

Notes: **Gordon & Nafi (2012)** argue for word-level stress, but **Roettger et al. (2015)** show evidence that it is a phrase-level phenomenon.

Vowel reduction processes

shi-R1: Vowels are shortened preceding a geminate consonant (**DellElmedlouai2002**).

Consonant allophony processes

(none reported)

Morphology

Text: “The north wind and the sun” (**Ridouane 2014** : 219)

Synthetic index: 1.9 morphemes/word (144 morphemes, 76 words)

[spl] SELEPET Nuclear Trans New Guinea, *Finisterre-Huon* (Papua New Guinea)

References consulted: **McElhanon (1970)**

Sound inventory

C phoneme inventory: /p^m b tⁿ d k^ŋ g s h m ŋ l r w j/

N consonant phonemes: 15

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Velar, Glottal

Manners: Stops, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 1

Elaborations: Prenasalization

V phoneme inventory: /i e a ɔ o u/

N vowel qualities: 6

Abbreviations

Diphthongs or vowel sequences: Diphthongs /ii ie ia io iu ei eu ai ae ao au
ɔi ɛe ɔo ɔu oi oe ou ui ue ua ʊo uo uu/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: Prenasalization in voiced stops is weak in initial position, but always prenasalized intervocalically, so I take this variant to be phoneme label. No significant difference in length between simple and complex nuclei.

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)V(C) (McElhanon 1970 : 14-18)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Vowel sequences

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: Only voiceless stops and nasals occur.

Suprasegmentals

Tone: Not reported

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Intensity (impressionistic)

Vowel reduction processes

spl-R1: Unstressed syllables or vowels in postnuclear slope (in phrases) tend to elision nearer the nucleus (McElhanon 1970 : 6).

spl-R2: Length of syllables or vowels decreases nearer the nucleus in the pre-nuclear slope (in phrases) (McElhanon 1970 : 6).

Consonant allophony processes

spl-C1: A palatal glide may be realized as a palatal alveolar fricative [zʲ]~[sʲ] word-initially preceding /i/ (McElhanon 1970).

spl-C2: A palatal glide may be realized as a palatal alveolar fricative [zʲ]~[sʲ] when following a consonant (McElhanon 1970).

Morphology

(adequate texts unavailable)

[svs] SAVOSAVO isolate (Solomon Islands)

References consulted: Wegener (2008)

Sound inventory

C phoneme inventory: /p^m b tⁿ d^ɲ ʃ k^ɲ g m n ɲ s z r l β w/

N consonant phonemes: 17

Geminates: N/A

Voicing contrasts: Obstruent

Places: Bilabials, Alveolar, Palatal, Velar

Manners: Stop, Fricative, Nasal, Trill, Central Approximant, Lateral Approximant

N elaborations: 2

Elaborations: Voiced fricatives/affricates, Prenasalization

V phoneme inventory: /i e a o u/

N vowel qualities: 5

Diphthongs or vowel sequences: Diphthong /ai/

Contrastive length: None

Contrastive nasalization: None

Other contrasts: None

Notes: Prenasalized stops have both plain voiced and prenasalized allophones, but latter much more frequent. /ai/ combination is diphthong in some cases, disyllabic vowel sequence in others (Wegener 2008 : 22).

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Wegener 2008 : 23-4)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Vowel duration (impressionistic), Pitch (instrumental), Intensity (instrumental)

Notes: Only pitch and intensity instrumentally confirmed as correlates of stress, and then only qualitatively in Praat. Pitch only sometimes a correlate of stress (p. 24).

Vowel reduction processes

(none reported)

Consonant allophony processes

svs-C1: An alveolar trill may be realized as a flap in rapid speech (Wegener2010).

Morphology

Text: “Koi polupolu” (lines 1-46, Wegener 2008 : 331-336)

Synthetic index: 1.6 morphemes/word (630 morphemes, 396 words)

[sxr] SAAROA Austronesian, *Tsouic* (Taiwan)

References consulted: Pan (2012)

Sound inventory

C phoneme inventory: /p t k ʔ t͡s v s m n ŋ ɾ r ɻ/

N consonant phonemes: 13

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Labiodental, Alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/tap, Trill, Lateral fricative

N elaborations: 2

Elaborations: Voiced fricatives/affricates, Labiodental

V phoneme inventory: /i i̯ a u i̯ i̯ a u:/

N vowel qualities: 4

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: /b ɸ̚ ɗ̚ g/ occur in Japanese loans, /p^h t^h ʈ^h/ in Mandarin loans, /k^h/ in Southern Min loans, and /h/ in Bunun loans.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V(C) (Pan 2012 : 32-33)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: None

Coda restrictions: /m n/

Notes: There are only two native words which have invariant codas, one word-final and one word-medial (Pan 2012 : 32f).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Pitch (impressionistic), Intensity (impressionistic)

Vowel reduction processes

sxr-R1: Unstressed high vowels /i ɨ u/ are typically deleted in normal and rapid speech word-finally following /ŋ/ (Pan 2012 : 38).

sxr-R2: Unstressed high central vowel /ɨ/ is typically deleted word-finally following /m/ (Pan 2012 : 39).

Consonant allophony processes

sxr-C1: Alveolar fricative and affricate /s ʈs/ are realized as palato-alveolar preceding high front vowel /i/ (Pan 2012 : 28).

Morphology

Text: “Extract from text 1: Introducing myself and my children,” “Extract from test 2: Daily life of the past,” “Extract from text 3: How to make a mat,” “Extract from text 4: How to make sticky rice cakes” (Pan 2012 : 365-372)

Synthetic index: 1.7 morphemes/word (493 morphemes, 288 words)

[tbi] GAAM Eastern Jebel (Sudan)

References consulted: Bender (1983), Crewe (1975), Stirtz (2011)

Sound inventory

C phoneme inventory: /p b t̪ d̪ c ʃ k g f s m n ɲ l r w ɔ̥ j/

N consonant phonemes: 21

Geminates: /f s m n ɲ l r:/ (Some)

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Dental, Alveolar, Palatal, Velar

Manners: Stop, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 1

Elaborations: Labiodental

V phoneme inventory: /i ɛ ə a ɔ̥ u iː ɛː əː aː ɔː uː/

N vowel qualities: 6

Diphthongs or vowel sequences: Vowel sequences /ɛɔ̥ aɛ aɔ̥ ɔɛ ɔa iə iu əi əu ui uə/

Contrastive length: All

Contrastive nasalization: None

Other contrasts: N/A

Notes: Geminate /f s n ɲ l r (trill)/ occur in intervocalic position.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)V(C)(C) (Stirtz 2011 : 36-43)

Size of maximal onset: 1

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Vowel sequences

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Both patterns (Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Apparently none.

Coda restrictions: For simple codas, all consonants except /ʔ, k', ɖʒ/ may occur. Biconsonantal codas occur only word-finally. C₁ is /r, l/, or nasal. C₂ is an obstruent.

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Unpredictable/Variable

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Intensity (impressionistic)

Notes: In connected speech, stress patterns subject to 'largely unpredictable rhythmic variation' (Crews 1975 : 12-13).

Vowel reduction processes

(none reported)

Consonant allophony processes

tbi-C1: Voiced bilabial and palatal stops are realized as approximants intervocalically (Stirtz 2011 : 25).

tbi-C2: Voiced bilabial and palatal stops and glides are realized as the corresponding vowel when occurring word-finally (Stirtz 2011).

Morphology

Text: "The goat and the fox," "The Nyeerma and the fox" (Stirtz 2011 : 319-326)

Synthetic index: 1.5 morphemes/word (503 morphemes, 339 words)

[teh] TEHUELCHÉ Chonan, *Continental Chonan* (Argentina)

References consulted: Fernández Garay 1998, Fernández GarayHernández 2006

Sound inventory

C phoneme inventory: /p b t̪ d̪ k g q ɕ ʔ p' t' k' q' t͡ʃ t͡ʃ' s ʃ x χ m n l r w j/

N consonant phonemes: 25

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Palato-alveolar, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 3

Elaborations: Ejective, Palato-alveolar, Uvular

V phoneme inventory: /e a o e: a: o:/

N vowel qualities: 3

Diphthongs or vowel sequences: None

- Contrastive length:** All
Contrastive nasalization: None
Other contrasts: N/A
Syllable structure
Complexity Category: Highly Complex
Canonical syllable structure: (C)(C)V(C)(C)(C) (Fernández Garay1998: 93-103; Fernández GarayHernández2006: 13-14)
Size of maximal onset: 2
Size of maximal coda: 3
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels, Long vowels
Syllabic consonant patterns: Nasal, Obstruent
Size of maximal word-marginal sequences with syllabic obstruents: 3 (initial), >3 (final)
Predictability of syllabic consonants: Phonemic, Predictable from word/consonantal context, or Varies with CV sequence
Morphological constituency of maximal syllable margin: Both patterns (Onset, Coda)
Morphological pattern of syllabic consonants: Grammatical items
Onset restrictions: Biconsonantal onsets include /pl/, /k, q/+obstruent, and /m/+consonant.
Coda restrictions: There are no apparent restrictions for biconsonantal codas, which include /mʃ pʃ tʃ ʔr lk' rʃʃ rn/. Triconsonantal clusters include at least /ʔʃp mnk rnk ʔnk/.
Notes: Canonical patterns listed above are for the root morpheme and word levels (Fernández Garay & Hernández explicitly state that triconsonantal clusters occur word-finally, but don't include this shape in their list). In addition to clusters, FernándezGaray1998 and FernándezGarayHernández2006 posit syllables of the shape C and CC, which may consist of obstruents (and some other Cs) and correspond to grammatical morphemes. These can be added at word margins to the canonical clusters to form larger sequences of consonants at the "phrase" level, an example being k-tʃaʔʃp-f-kn > /kʃaʔʃpʃk'n/ 'it is being washed' (2006: 13). Examples throughout the description show maxima of three consonants word/phrase-initially and six consonants word/phrase-finally resulting from affixation processes. The authors state that "this accumulation of consonants is made possible by the development of epenthetic vowels." These *supporting vowels* play the role of "lubricator" in sequences of consonants and are

Suprasegmentals
Tone: No
Word stress: Yes
Stress placement: Morphologically or Lexically Conditioned
Phonetic processes conditioned by stress: Vowel Reduction
Differences in phonological properties of stressed and unstressed syllables:
Not described

Abbreviations

Manners: Stop, Affricate, Fricative, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 5

Elaborations: Breathily voice, Voiced fricatives/affricates, Post-aspiration, Labio-dental, Retroflex

V phoneme inventory: /i e a o u i: e: æ: a: o: u:/

N vowel qualities: 6

Diphthongs or vowel sequences: Diphthongs /ai au/

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: Vowel length distinction for all but /æ:/, which is always long. Place distinctions in consonant inventory from Kostić et al. (1977:191).

Syllable structure

Complexity Category: Moderately Complex

Canonical syllable structure: (C)V(C) (Kostić et al. 1977: 199)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: None? Speaker judgment data suggests that word-medial geminate clusters (e.g. *pennu*) are typically syllabified as onset of syllable, while other word-medial CC clusters (e.g. *gampa*) are split across syllables (Sailaja1999).

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Not described

Vowel reduction processes

tel-R1: A short vowel is lost between two consonants which have the same place of articulation, or of which C₁ is an apical and C₂ is an apical or laminal, or between dentals and affricates (Kostić et al. 1977: 9).

tel-R2: Long vowels /i: a: o: u:/ in word-final (and unstressed) position may be reduced to the length of a short vowel (Kostić et al. 1977: 11-52).

tel-R3: [ə] is reported to be an allophone or perhaps free variant of /a, e/ but no further description is given as to its distribution (Kostić et al. 1977).

Consonant allophony processes

tel-C1: A voiceless aspirated stop may be realized as an affricate [kx] in a stressed syllable (Kostić et al. 1977: 105).

tel-C2: Stops are partially fricated in unstressed position (Kostić et al. 1977: 89).

tel-C3: Stops are realized as fricatives intervocalically (Krishnamurti 1998 : 207).

tel-C4: A bilabial stop or nasal varies with a (nasalized) labial glide intervocalically (Krishnamurti 1998 : 207, Bhaskararao & Ray 2017 : 234).

tel-C5: A bilabial stop or nasal is realized as a (nasalized) labial glide word-finally (Krishnamurti 1998 : 207, Bhaskararao & Ray 2017 : 234).

tel-C6: A bilabial stop is realized as a labial glide preceding /w s h/ (Krishnamurti 1998 : 207).

tel-C7: In intervocalic position /r/ and /ŋ/ are realized as taps/flaps (Bhaskararao & Ray 2017 : 235).

Morphology

(adequate texts unavailable)

[thp] THOMPSON Salishan, *Interior Salish* (Canada)

References consulted: Koch (2008) ; Thompson & Thompson (1992 ; 1996)

Sound inventory

C phoneme inventory: /p t̚ k k^w q q^w ʔ p' k' k'^w q' q'^w t̚s t̚j t̚ɬ' t̚s' s ʃ x x^w χ χ^w h ɬ m n m' n' l l' ʈ j ɰ w ɬ' ɬ^w ʈ' j' ɰ' w' ɬ' ɬ'^w/

N consonant phonemes: 42

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Dental, Alveolar, Palato-alveolar, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral affricate, Lateral fricative, Lateral approximant

N elaborations: 7

Elaborations: Creaky voice, Lateral release, Ejective, Palato-alveolar, Uvular, Pharyngeal, Labialization

V phoneme inventory: /i ɪ ɛ ə ʌ a ɔ u/

N vowel qualities: 8

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /ʷ ʷʻ/ are exceedingly rare. /tʰ/ occurs rarely and in apparent loan-words. [ɪ] varies with [ə], but this phoneme is generally very rare.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: C(C)(C)V(C)(C)(C)(C)(C) (Thompson & Thompson 1992 : 25-43; Thompson & Thompson 1996 ; ThompsonEtAl1996)

Size of maximal onset: 3

Size of maximal coda: 6

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: Nasal, Liquid

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Predictable from word/consonantal context

Morphological constituency of maximal syllable margin: Morphologically Complex (Onset, Coda)

Morphological pattern of syllabic consonants: Lexical items (Liquid), Both (Nasal)

Onset restrictions: Apparently all Cs may occur initially. Biconsonantal onsets include /kɭ, q^wn, sx^w, sfɿ, fsk^w/. Triconsonantal onsets include /nsʔ, sɣɔ, spt, sfɿk/.

Coda restrictions: Unclear if all Cs occur in codas. Biconsonantal codas quite varied, include /mx^w ft q^wm ʔt/. Triconsonantal codas include /x^wkt x^wsfɿ pɿfɿ kst fɿms/. Six-consonant codas include obstruent-only sequences such as /ɭqsxtx^w/.

Notes: Canonical syllable patterns not explicitly stated, but based on examples given. Authors state that sequences of six obstruents “not uncommon” (1992: 25). Authors analyze some clusters as having underlying vowels intervening between consonants. As far as I can tell from the description, unstressed underlying vowels do not occur in actual production unless explicitly transcribed in the surface

form. Coda clusters larger than six have been observed, however, example is transcribed with optional intervening schwa (*nik'kstkptʔ(ə)t* 'you people already got your hands cut', 1992:25). "Study of the grammatical system shows that such words [with long obstruent sequences] are made up of strings of meaningful subparts, morphemes, many of which have vowels when they fall under stress. But each word has just a single main stress, and vowels mostly drop out of the unstressed morphemes." (ThompsonEtAl1996: 612)

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: Vowel Quality Contrasts

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental), Intensity (instrumental)

Vowel reduction processes

thp-R1: High vowels /i u/ are nearly always realized as [ə] when preceding the main stress, except for when /u/ occurs between two velar consonants (Thompson & Thompson 1992 : 32).

thp-R2: In allegro speech, unstressed /i ɪ ε a o u/ tend to be realized as [ə] (Thompson & Thompson 1992 : 45).

thp-R3: In allegro speech, unstressed /ə/ is deleted between obstruents (Thompson & Thompson 1992 : 45).

thp-R4: Unstressed /ʌ/ is reduced to [ə] (Thompson & Thompson 1992 : 45).

thp-R5: In allegro speech, stressed /a, o/ and sometimes /ε/ are frequently replaced by [ʌ] (Thompson & Thompson 1992 : 46).

The processes below have quite a few phonological and some morphological complications, and their productivity is unclear. I have not included them as phonetically- or phonologically-conditioned vowel reduction in my analysis, but they should be noted:

thp-R6: Most post-tonic vowels are deleted (Thompson & Thompson 1992 : 23, 33-4).

thp-R7: In successive syllables preceding main stress, /ə/ is deleted (Thompson & Thompson 1992 : 31-2).

thp-R8: In successive syllables preceding main stress, vowels /i ɪ ε a o u/ are deleted when adjacent to a laryngeal, pharyngeal, or homorganic semivowel and

preceding the main stress (Thompson & Thompson 1992 : 31-2).

Consonant allophony processes

thp-C1: Velars are rounded following /u/ in a stressed or closed syllable (Thompson & Thompson 1992 : 36).

Morphology

Text: “The man who went to the moon” (lines 1-65; Thompson & Thompson 1992 : 200-5)

Synthetic index: 1.7 morphemes/word (506 morphemes, 297 words)

[tow] TOWA Kiowa-Tanoan (United States)

References consulted: Bell (1993), Logan Sutton (p.c.), Yumitani (1998)

Sound inventory

C phoneme inventory: /p b t d c k^{ih} g^j k^h g k^w ʔ p' t' kⁱ k' tʃ f v s z ʃ h m n r l j w/

N consonant phonemes: 30

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Palato-Alveolar, Palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central Approximant, Lateral Approximant

N elaborations: 6

Elaborations: Voiced fricative/affricate, Ejective, Labiodental, Palato-alveolar, Palatalization, Labialization

V phoneme inventory: /i e æ i̯ a o i̯: e: æ: i̯: o: a: i̯~ æ i̯ a ð i̯~ : æ: i̯: a: ð:/

N vowel qualities: 6

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: Some

Other contrasts: None

Notes: Yumitani lists voiceless velar stops as aspirated, but it aspiration is not contrastive. Nasalization contrast for all but /e e:/.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V(C) (Yumitani 1998 : 21-22)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: /l/, /f/ in limited environments.

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental)

Notes: The issue of whether Towa has true vowel-initial syllables is still up for debate; a voiced glottal fricative is often heard before the vowel (Yumitani 1998 : 22-23). Though the canonical syllable structure has an optional coda, in speech there is a tendency toward a CV template. Closed syllables do not occur word-internally, and when occurring word-finally are often resyllabified. See discussion in Chapter 3.

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental)

Notes: Pitch is not as strong an indicator as length for stress.

Vowel reduction processes

tow-R1: Long vowels become glottalized (VʔV) word-finally before a pause (Yumitani 1998 : 20; vowels not specified).

tow-R2: Some long vowels have short variants word-finally (Yumitani 1998 : 20; vowels not specified).

tow-R3: Non-initial (unstressed) vowels are more central and harder to identify than corresponding initial (stressed) vowels (Yumitani 1998 : 31, Bell 1993 : 29).

Consonant allophony processes

tow-C1: Palatal stops are realized as palato-alveolar affricates preceding a high front vowel (Yumitani 1998 : 13).

tow-C2: A palato-alveolar fricative is realized as a voiced palato-alveolar affricate preceding a high front vowel (Yumitani 1998 : 13).

tow-C3: A voiceless alveolar fricative is realized as a glottal fricative syllable-initially in a syllable carrying low tone, especially among younger speakers (Yumitani 1998 : 13).

Morphology

Text: “About my childhood” (Yumitani 1998 : 248-250)

Synthetic index: 1.7 morphemes/word (408 morphemes, 244 words)

[tzh] TZELTAL (AGUACATENANGO DIALECT) Mayan, *Core Mayan* (Mexico)

References consulted: Kaufman (1971), Polian (2006), Smith (2007)

Sound inventory

C phoneme inventory: /p b t̪ k ʔ p' t̪' k' t̪s̪ t̪ʃ t̪s̪' t̪ʃ' s ʃ h m n l r w j/

N consonant phonemes: 21

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Dental, Alveolar, Palato-alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant, Lateral approximant

N elaborations: 2

Elaborations: Ejective, Palato-alveolar

V phoneme inventory: /i e a o u e:/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: Yes

Contrastive nasalization: Some

Other contrasts: N/A

Notes: /f r/ occur only in loanwords in speech of ‘acculturated’ speakers (Kaufman 1971 : 13). Kaufman also gives /d g/. Smith calls /j/ a fricative. The few cases of apparent long vowels are often morphologically complex; however, /e:/ is contrastive in one monomorphemic word.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)V(C)(C) (Kaufman 1971 : 9-15)

Size of maximal onset: 2

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Coda), Morphologically Complex (Onset)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: Apparently no restrictions on simple onsets. Biconsonantal onsets consist of /s ʃ h/ plus any (?) consonant.

Coda restrictions: Apparently no restrictions on simple codas. Biconsonantal codas limited to sequence of /h/ + voiceless stop or affricate.

Notes: Initial clusters in Spanish loans may be prefixed with /s ʃ h/, resulting in triconsonantal onset.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (impressionistic)

Notes: Length is a correlate of stress in some dialects (Polian 2006 : 23).

Vowel reduction processes

tzh-R1: Vowels are realized as extra short when unstressed before a consonant following a stressed vowel (Kaufman 1971 : 12).

tzh-R2: Vowels are short when unstressed before a phrasal (? ‘caret’) juncture (Kaufman 1971 : 12).

tzh-R3: In casual speech, reducible vowels (=post-tonic, if also followed by at least one more vowel and not more than two consonants before a juncture intervenes) are replaced by /a/ or /e/ (Kaufman 1971 : 26-7).

Notes: There are also several productive vowel reduction processes taking place in particular speech styles. In Assimilative Speech, used by unmarried children who are living at home or not yet economically dependent, reducible vowels as well as some other vowels are replaced by echo vowels. In Clipped Speech, used by men between the ages of 18 and 40 who are married or economically independent of their parents, reducible vowels are ‘zeroed’ wherever possible, or otherwise replaced by [ə] (Kaufman 1971 : 26-7).

Consonant allophony processes

tzh-C1: Voiced stops are spirantized following a vowel. (Kaufman 1971 : 11)

Morphology

Text: “Le voyage à la finca” (first 5 pages, Polian 2006 : 235-239) ****Central dialect****

Synthetic index: 1.5 morphemes/word (446 morphemes, 299 words)

[ung] NGARINYIN Worrorran (Australia)

References consulted: Coate & Oates (1970), Rumsey (1978)

Sound inventory

C phoneme inventory: /p t ṭ c k m n ŋ ɲ l ʎ ʀ ɹ w j/

N consonant phonemes: 17

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Alveolar, Retroflex, Palatal, Velar

Manners: Stop, Nasal, Trill, Central approximant, Lateral approximant

N elaborations: 1

Elaborations: Retroflex

V phoneme inventory: /ɪ e a o ʊ ɑ:/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: Some

Contrastive nasalization: None

Other contrasts: N/A

Notes: Vowel length generally not phonemic.

Syllable structure

Complexity Category: Complex

Canonical syllable structure: (C)(C)(C)V(C)(C) (Rumsey 1978 : 23-6)

Size of maximal onset: 3

Size of maximal coda: 2

Onset obligatory: No

Coda obligatory: No

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal
(Onset, Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants except for /r ʌ/ may occur in simple onsets. Biconsonantal onsets are /pɹ/, /tɹ/, /mɹ/, /kɹ/, and /pr/. Triconsonantal onset limited to /prɹ/.

Coda restrictions: All consonants except for /p m ʌ ɹ/ may occur as simple codas. Biconsonantal codas have lateral /l/ as C₁ and nasal /ŋ n ɳ m/ as C₂. These codas are always followed by an onset which is /k/ or /p/ in the following syllable.

Notes: Apparently /a/ is the only V syllable.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: see below

Notes: Here it's REDUCED duration that is a correlate of stress, and for /a/ only. When carrying primary stress in polysyllabic words, /a/ is higher and shorter than long low back vowel, by a degree which depends on which consonant follows it.

Vowel reduction processes

ung-R1: Lax high vowels /ɪ ʊ/ are produced as tense in word-final position or before a loose juncture (Rumsey 1978 : 13-16).

ung-R2: Low central vowel /a/ is realized as [ə] when unstressed (Rumsey 1978 : 17-18).

Consonant allophony processes

ung-C1: An alveolar lateral approximant is velarized adjacent to back vowels (Rumsey 1978 : 11).

ung-C2: A voiced bilabial stop is labialized preceding /u/ (Rumsey 1978 : 9-10).

ung-C3: Velars are fronted preceding front vowels (Rumsey 1978 : 11).

ung-C4: Stops are voiced following a nasal and preceding any sound (Rumsey 1978 : 9).

ung-C5: A trill may be realized as a flap intervocalically (Rumsey 1978 : 12).

ung-C6: A trill may be realized as a flap word-finally (Rumsey 1978 : 12).

Morphology

Text: “Ngunbangguwe ‘Mt. Trafalgar’” (Coate & Oates 1970 : 104-110)

Synthetic index: 2.0 morphemes/word (1142 morphemes, 573 words)

[ura] URARINA isolate (Peru)

References consulted: Olawsky (2006)

Sound inventory

C phoneme inventory: /b t d k k^w tɕ f^w s ʃ h h^j m n ɲ l ɾ/

N consonant phonemes: 16

Geminates: N/A

Voicing contrasts: Obstruents

Places: Bilabial, Labiodental, Alveolar, Retroflex, Alveolo-palatal, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/tap, Lateral approximant

N elaborations: 4

Elaborations: Labiodental, Retroflex, Palatalization, Labialization

V phoneme inventory: /i e ɐ a u ĩ ẽ ʌ ã ã̃/

N vowel qualities: 5

Diphthongs or vowel sequences: Diphthongs /ae aj ej au aʊ/

Contrastive length: None

Contrastive nasalization: All

Other contrasts: N/A

Notes: /f^w/ has merged with former /h^w/ for most younger speakers; most common pronunciation of the latter is now [f^w]. Distribution of /h^j/ is mostly restricted to word-initial position preceding /a u ʌ/. Most occurrences of /ɲ/ are predictable, but minimal pairs occur word-initially.. Author considers [dʒ] to be predictable, but there are a few near-minimal pairs with ‘complex conditioning’ (Olawsky 2006 : 30-49). Vowel length distinction exists at grammatical level, but minimal pairs do not exist except for loans and morphologically complex forms; also vowel length in these contexts may be variable (Olawsky 2006 : 56-7). /u/ varies with [o].

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Olawsky 2006 : 75-6)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: N/A

Notes: CCV syllables sometimes occur in Spanish loanwords in the speech of bilinguals, but these are usually split up by epenthesis (Olawsky 2006 : 76).

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Weight-Sensitive

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Intensity (impressionistic)

Vowel reduction processes
(none reported)

Consonant allophony processes

ura-C1: A voiceless alveolar fricative is realized as palato-alveolar following /i/ in some dialects (Olawsky 2006 : 38).

ura-C2: An alveolo-palatal affricate [tʃ] is realized as a palato-alveolar affricate [dʒ] word-initially preceding /a/ or /ʌ/ (Olawsky 2006 : 39).

ura-C3: A sequence of /tʃi/ may vary freely with palatalized retroflex flap [ɾʲ] or palato-alveolar affricate [dʒ] (Olawsky 2006 : 71).

ura-C4: A sequence of /ku/ may vary with [kʷ] (Olawsky 2006 : 37).

ura-C5: Voiceless glottal fricative and alveolar nasal may be realized as palatalized following /i/ (Olawsky 2006 : 47).

Morphology

Text: “Text 8,” “Text 10 (Olawsky 2006 : 902-905)

Synthetic index: 1.6 morphemes/word (270 morphemes, 169 words)

[ute] UTE Uto-Aztecan, *Northern Uto-Aztecan* (United States)

References consulted: Givón (2011), Harms (1966), Oberly (2013)

Sound inventory

C phoneme inventory: /p t k ʔ tʃ β s ɣ m n r w j/

N consonant phonemes: 13

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Dental, Palato-Alveolar, Velar, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Flap/Tap, Central approximant

N elaborations: 2

Elaborations: Voiced fricatives/affricates, Palato-alveolar

Abbreviations

V phoneme inventory: /i œ a u i: œ: a: u: u: ɨ œ ɔ ʊ ʉ/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: All

Contrastive nasalization: None

Other contrasts: Voicing

Notes: Uvulars are allophones (at least historically) of /k/ or /ɣ/ (Givón 2011 : 26). The voiced/voiceless distinction in vowels is a recent development, which does seem to be distinctive in certain grammatical contexts.

Syllable structure

Complexity Category: Simple

Canonical syllable structure: CV(C) (Givón 2011 : 27-28)

Size of maximal onset: 1

Size of maximal coda: 1

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Coda restrictions: Optional coda may be /j/ or result from the recent deletion of a word-final vowel.

Notes: Givón argues that all apparent vowel-initial words are actually glottal stop-initial (2011: 27). See discussion of syllable patterns in Chapter 3.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (instrumental), Pitch (instrumental)

Notes: Duration is a correlate of stress for short vowels only.

Vowel reduction processes

ute-R1: Unstressed and de-stressed vowels are devoiced word-finally (**Givón 2011** : 20-23; environments both phonological and grammatical).

ute-R2: Unstressed and de-stressed vowels are sometimes devoiced word-initially (**Givón 2011** : 20-23; environments both phonological and grammatical).

ute-R3: Vowels may become devoiced in unstressed syllables beginning with a voiceless consonant /k p t s tʃ/, a nasal /n m/, or a glide /w/ (**Givón 2011** : 21).

Consonant allophony processes

ute-C1: Velar stops are labialized following back rounded vowels (**Givón 2011** : 29).

ute-C2: Velar stops are palatalized following high vowels (**Givón 2011** : 29).

ute-C3: A voiceless bilabial stop is realized as a voiced labiodental fricative intervocalically (**Givón 2011** : 24; process rapidly phonemicizing).

ute-C4: A voiceless alveolar stop is realized as a flap intervocalically (**Givón 2011** : 25; process rapidly phonemicizing).

ute-C5: Velar stops are spirantized intervocalically (**Givón 2011** : 26-7).

ute-C6: Velar stop /k/ has variant [q] and velar fricative /ɣ/ has variant [ʁ], between two low vowels and adjacent to mid back vowels.

ute-C7: Velar stop /k/ has variant [χ] between two low vowels and adjacent to mid back vowels.

Morphology

Text: “Porcupine tricks Coyote” (first 5 pages, **Givón2013**: 107-111)

Synthetic index: 2.3 morphemes/word (593 morphemes, 255 words)

[wba] WARAO isolate (Venezuela)

References consulted: **Arinterol (2000)**, **Osborn (1966)**, **Romero-Figeroa1997**

Sound inventory

C phoneme inventory: /p t k k^w s h m n l w j/

N consonant phonemes: 11

Geminates: N/A

Voicing contrasts: None

Places: Bilabial, Alveolar, Velar, Glottal

Manners: Stop, Fricative, Nasal, Central approximant, Lateral flap

N elaborations: 1

Elaborations: Labialization

V phoneme inventory: /i e a o u/

N vowel qualities: 5

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: None

Other contrasts: N/A

Notes: /l/ has [r] and [d] variants. Osborn reports phonemic nasal contrasts for each vowel, but Romero-Figueroa states these are phonologically conditioned (1997: 108).

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Romero-Figueroa1997: 109-112)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Fixed

Phonetic processes conditioned by stress: (None)

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Intensity (impressionistic)

Vowel reduction processes

(none reported)

Consonant allophony processes

wba-C1: Voiced alveolar stop and voiceless alveolar fricative are realized as voiced palato-alveolar affricate, and voiceless palato-alveolar fricative, respectively, following /i/ (Arinterol 2000 : 121).

wba-C2: Labial and palatal glides may vary freely with corresponding fricatives (Arinterol 2000 : 122).

wba-C3: Stops may become voiced preceding a vowel (Arinterol1997).

wba-C4: Voiced alveolar stops are realized as flaps intervocalically (Arinterol1997).

Morphology

Text: (fragments of texts, Romero-Figueroa1997: 118-123)

Synthetic index: 1.6 morphemes/word (182 morphemes, 116 words)
[wmd] MAMAINDÊ Nambiquaran, Nambikwara Complex (Brazil)
References consulted: Eberhard (2009)
Sound inventory
C phoneme inventory: /p t k ʔ p^h t^h k^h s h m n l w j/
N consonant phonemes: 14
Geminates: N/A
Voicing contrasts: None
Places: Bilabial, Alveolar, Velar, Glottal
Manners: Stop, Fricative, Nasal, Central approximant, Lateral approximant
N elaborations: 1
Elaborations: Post-aspiration
V phoneme inventory: /i e a o u ĩ ẽ ã õ ü ĩ̃ ẽ̃ ă ɔ̃ ʊ̃ ĩ̃ ẽ̃ ỹ̃ /
N vowel qualities: 5
Diphthongs or vowel sequences: Diphthongs /iu iũ ei eĩ eu ai aĩ au aũ iũ iũ̃ ẽĩ
ẽũ ãĩ ăĩ ỹ̃ ỹ̃̃ ỹ̃̃̃ /
Contrastive length: None
Contrastive nasalization: Some
Other contrasts: Creaky (Some)
Syllable structure
Complexity Category: Complex
Canonical syllable structure: (C)(C)V(C)(C) (Eberhard 2009 : 124-34)
Size of maximal onset: 2
Size of maximal coda: 2
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels, Diphthongs
Syllabic consonant patterns: Nasal
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: Varies with CV sequence
Morphological constituency of maximal syllable margin: Morpheme-internal
(Onset, Coda)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: Any consonant may occur as simple onset. Biconsonantal
onsets are /k^h t^h k h/+ /w/, or /h ʔ/+ /l n j w s/ or /ʔm/.
Coda restrictions: Simple codas are stops and nasals. Biconsonantal codas con-
sist of stop or nasal + /ʔ/.

Notes: Complex onsets and codas (besides C+w onsets) always involve glottal, so this language doesn't have 'prototypically' Complex syllable structure.

Suprasegmentals

Tone: Yes

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction, Consonant Allophony in Unstressed Syllables, Consonant Allophony in Stressed Syllables

Differences in phonological properties of stressed and unstressed syllables: (None)

Phonetic correlates of stress: Vowel duration (instrumental), Intensity (instrumental)

Vowel reduction processes

wmd-R1: Unstressed syllables may optionally lose their vowel. This can result in syllabic consonants (Eberhard 2009 : 262-3; only illustrated for nasals).

wmd-R2: Non-front vowels /a o u/ are usually weakened in unstressed syllables (Eberhard 2009 : 271; there is one morphological exception).

Consonant allophony processes

wmd-C1: A palatal glide is realized as a voiceless palato-alveolar affricate following a syllable-initial plosive (Eberhard 2009 : 94).

wmd-C2: An alveolar lateral approximant is realized as a voiceless alveolar stop following a syllable-initial oral obstruent (Eberhard 2009 : 92).

wmd-C3: Voiceless stops may become voiced adjacent to voiced sounds, especially word-initially preceding an unstressed vowel (Eberhard 2009).

wmd-C4: Voiceless stops are voiced in a stressed onset (Eberhard 2009 : 55).

wmd-C5: Voiceless alveolar stop is realized as a voiced implosive when occurring preceding a stressed back vowel and occurring word-initially or following a glottal stop (Eberhard 2009 : 58).

wmd-C6: A voiceless alveolar stop is realized as a flap intervocalically preceding an unstressed vowel (Eberhard 2009 : 55).

Morphology

(adequate texts unavailable)

[wut] WUTUNG Sko, *Nuclear Skou-Serra-Piore* (Papua New Guinea)

References consulted: Marmion (2010), Doug Marmion (p.c.)

Sound inventory

C phoneme inventory: /p b t d ʔ tʃ dʒ f s h m n ɲ l w/

N consonant phonemes: 15

Geminates: N/A

Voicing contrasts: Obstruents
Places: Bilabial, Labiodental, Alveolar, Palato-alveolar, Palatal, Glottal
Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant
N elaborations: 3
Elaborations: Voiced fricatives/affricates, Labiodental, Palato-alveolar
V phoneme inventory: /i e ε θ v o ʊ ĩ ē ε θ v õ ʊ/
N vowel qualities: 7
Diphthongs or vowel sequences: None
Contrastive length: None
Contrastive nasalization: Some
Other contrasts: N/A
Notes: /k/ occurs in one (possibly recent) borrowing. Contrastive nasalization for /i e ε θ v o ʊ/.
Syllable structure
Complexity Category: Highly Complex
Canonical syllable structure: (C)(C)(C)(C)V(C) (*Marmion 2010* : 68-76)
Size of maximal onset: 4
Size of maximal coda: 1
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels
Syllabic consonant patterns: N/A
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: N/A
Morphological constituency of maximal syllable margin: Morpheme-internal (Onset)
Morphological pattern of syllabic consonants: N/A
Onset restrictions: All consonants occur as simple onsets. Biconsonantal onsets include /h ʔ/ + voiced consonant, or labial consonant + /l/. Triconsonantal onsets are /h ʔ/ + /b m/ + /l/, also /hpɗʒ/, hmb/. Only known example of four-consonant onset is /hmbɗ/.
Coda restrictions: Codas occur in rare circumstances and are always nasals /m n/.
Suprasegmentals
Tone: Yes
Word stress: Yes
Stress placement: Unpredictable/Variable

Phonetic correlates of stress: Vowel duration (impressionistic), Intensity (impressionistic)

(none reported)

wut-C1: A labiovelar glide may be realized as a bilabial fricative word-initially preceding a vowel (Marmion 2010 : 57-8).

wut-C3: A voiced palato-alveolar affricate may be realized as a glide intervocalically (Marmion 2010 : 55).

Text: “Crow and white cockatoo,” “Womia the mermaid” (Marmion 2010 : 378-382)

[yak] YAKIMA SAHAPTIN Sahaptian, *Sahaptin* (United States)

References consulted: Hargus & Beavert (2002 ; 2005 ; 2006); Jansen (2010), Minthorn (2005), Rigsby & Rude (1996), RudeCTUIR2014; Rude (2009)

C phoneme inventory: /p t k k^w q q^w ʔ p' t' k' k'^w q' q'^w tɬ tɬ' tʃ tʃ' ts ts' tʃ' ɬ s ʃ x x^w ɣ ɣ^w h m n l w j/

Geminates: N/A

Places: Bilabial, Dental, Palato-alveolar, Velar, Uvular, Glottal

Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral affricate, Lateral fricative, Lateral approximant

Elaborations: Lateral release, Ejective, Palato-alveolar, Uvular, Labialization

V phoneme inventory: /i i̥ a u i: a: u:/

N vowel qualities: 4

Diphthongs or vowel sequences: None

Contrastive length: Some

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Other contrasts: N/A

Notes: Vowel length contrast for /i a u/. Note that Jansen, Rigsby & Rude posit diphthongs; **Hargus & Beavert (2006)** argue against this on evidence from phonological processes.

Syllable structure

Complexity Category: Highly Complex

Canonical syllable structure: C(C)(C)(C)V(C)(C)(C)(C) (**Hargus & Beavert 2006**, 2002; **Rigsby & Rude 1996** : 671)

Size of maximal onset: 4

Size of maximal coda: 4

Onset obligatory: Yes

Coda obligatory: No

Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs

Syllabic consonant patterns: N/A

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: N/A

Morphological constituency of maximal syllable margin: Morpheme-internal (Onset), Both patterns (Coda)

Morphological pattern of syllabic consonants: N/A

Onset restrictions: All consonants occur as simple onsets. Biconsonantal onsets may be obstruent+sonorant, obstruent+obstruent, sonorant+sonorant, sonorant+obstruent and include /χn pt qʰ mj tw qn lt tʃtʃ/. Triconsonantal onsets are quite numerous and include sequences of three obstruents, e.g. /pfχ, tk^ws/, as well as combinations with sonorants, e.g. /tmt, tχn/. Onsets of four consonants occurring morpheme-internally include /ftχn, ksks/, with perhaps more when morphologically complex forms are considered (but there are few candidate prefixes).

Coda restrictions: /h ʔ/ do not occur in simple codas. Biconsonantal codas are apparently unrestricted, include /tk t^ʰk q^wʰk ms wn/. Triconsonantal codas include /tks stk pʰʰk/. **Hargus & Beavert (2006)** list /wtk^wf wq^ʰχ jlps/ as four-consonant codas.

Notes: Clusters of glottalized or labialized obstruents do not occur (in reduplication contexts, their plain forms appear), but clusters of identical rearticulated plain consonants, e.g. /pp/, /qq/, do appear and are common. There seem to be place restrictions on initial obstruent sequences: except for identical rearticulated clusters, sequences of homorganic consonants generally don't occur, and dorsal+labial sequences are common but labial+dorsal sequences occur in one item (**Hargus & Beavert 2002** : 237). Meanwhile, there are no coherent place re-

strictions on YS final clusters (2002: 239). Rigsby & Rude (1996) state that initial clusters are maximally three members, but Hargus & Beavert (2006) give evidence from phonological processes that glide is a consonant and not part of previous vowel (diphthong). Minimal words in YS are CCV or CVC (Hargus & Beavert 2006). Hargus & Beavert reject syllabic obstruents for YS but Minthorn (2005) posits syllabic obstruents for related dialect Umatilla based on instrumental evidence and speaker judgments.

Suprasegmentals

Tone: No

Word stress: Yes

Stress placement: Morphologically or Lexically Conditioned

Phonetic processes conditioned by stress: Vowel Reduction

Differences in phonological properties of stressed and unstressed syllables:
(None)

Phonetic correlates of stress: Pitch (instrumental), Intensity (instrumental)

Notes: Hargus & Beavert (2005) describe language as having pitch accent.

Vowel reduction processes

yak-R1: Short vowels may be realized as lax when unstressed (Jansen 2010 : 40).

yak-R2: Short vowels may be realized as lax in rapid speech (Jansen 2010 : 40).

Consonant allophony processes

yak-C1: An ejective dental stop varies with affricate variant [tʰ] in all environments (Rigsby & Rude 1996 : 669).

yak-C2: Voiceless velar stops are fronted preceding high front vowels and palatal glides (Rigsby & Rude 1996 : 667).

Morphology

Text: “Coyote and Prairie Chicken” (first 15 pages, Jansen 2010 : 444-458)

Synthetic index: 1.8 morphemes/word (575 morphemes, 324 words)

[yor] YORUBA Atlantic-Congo, *Volta-Congo* (Benin, Nigeria)

References consulted: Bamgbose (1966), Rowlands (1969), Seidl (2000), Siertsema (1959)

Sound inventory

C phoneme inventory: /b t d ɟ k g k͡p ɡ͡b f s ʃ h m l ɾ j w/

N consonant phonemes: 17

Geminates: N/A

Voicing contrasts: Obstruents

Places: Labial-velar, Bilabial, Labiodental, Alveolar, Palato-Alveolar, Velar, Glottal

Manners: Stop, Fricative, Nasal, Flap/Tap, Lateral approximant, Central approximant

N elaborations: 2

Elaborations: Labiodental, Palato-alveolar

V phoneme inventory: /i e ε a ɔ o u ɪ ɛ ɔ ũ/

N vowel qualities: 7

Diphthongs or vowel sequences: None

Contrastive length: None

Contrastive nasalization: Some

Other contrasts: None

Syllable structure

Complexity Category: Simple

Canonical syllable structure: (C)V (Bamgbose 1966 : 6)

Size of maximal onset: 1

Size of maximal coda: N/A

Onset obligatory: No

Coda obligatory: N/A

Vocalic nucleus patterns: Short vowels

Syllabic consonant patterns: Nasal

Size of maximal word-marginal sequences with syllabic obstruents: N/A

Predictability of syllabic consonants: Phonemic

Morphological constituency of maximal syllable margin: N/A

Morphological pattern of syllabic consonants: Grammatical items

Onset restrictions: All consonants occur.

Suprasegmentals

Tone: Yes

Word stress: No

Vowel reduction processes

(none reported)

Consonant allophony processes

(none reported)

Morphology

(adequate texts unavailable)

[yue] CANTONESE Sino-Tibetan, *Sinitic* (China)

References consulted: Bauer & Benedict (1997), Matthews & Yip (1994)

Sound inventory

N consonant phonemes: /p t k k^w p^h t^h k^h k^{wh} ʈs ʈs^h f s h m n ŋ l j w/

Geminates: N/A

Abbreviations

Voicing contrasts: None
Places: Bilabial, Labiodental, Dental/Alveolar, Velar, Glottal
Manners: Stop, Affricate, Fricative, Nasal, Central approximant, Lateral approximant
N elaborations: 3
Elaborations: Post-aspiration, Labiodental, Labialization
V phoneme inventory: /i y e ø a ɑ ɔ u/
N vowel qualities: 8
Diphthongs or vowel sequences: Diphthongs /ai ai au au ei øi iu ui oi ou/
Contrastive length: None
Contrastive nasalization: None
Other contrasts: N/A
Notes: /ɑ/ longer than /a/ but there is also a quality distinction. **Bauer & Benedict (1997 : 45–48)** disagree with this vowel system and propose a 14-vowel system with length distinctions.
Syllable structure
Complexity Category: Moderately Complex
Canonical syllable structure: (C)V(C) (**Matthews & Yip 1994 : 16-20, Bauer & Benedict 1997**)
Size of maximal onset: 1
Size of maximal coda: 1
Onset obligatory: No
Coda obligatory: No
Vocalic nucleus patterns: Short vowels, Long vowels, Diphthongs
Syllabic consonant patterns: Nasal
Size of maximal word-marginal sequences with syllabic obstruents: N/A
Predictability of syllabic consonants: Phonemic
Morphological constituency of maximal syllable margin: N/A
Morphological pattern of syllabic consonants: Both
Onset restrictions: All consonants occur.
Coda restrictions: Limited to /m n ŋ p t k/ (**Matthews & Yip**) and semi-vowels (**Bauer & Benedict**).
Suprasegmentals
Tone: Yes
Word stress: No
Vowel reduction processes
(none reported)
Consonant allophony processes

yue-C1: A voiceless alveolar fricative is realized as a palatal or palato-alveolar fricative preceding /y/ (also preceding /i:/ in Guangzhou dialect) (Bauer & Benedict 1997 : 28-9).

yue-C2: Alveolar affricates are realized as palato-alveolar preceding front vowels, front and central rounded vowels /i: y: œ: ø/ (Bauer & Benedict 1997 : 29-30).

Morphology

(adequate texts unavailable)

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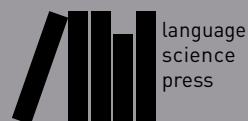
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Highly complex syllable structure

Set blurb on back with \BackBody{my blurb}

