A Grammar of Ayeri

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Documenting a Fictional Language

by Carsten Becker

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Glossing Abbreviations

1	First person		NEG	Negative
2	Second person		NMLZ	Nominalizer
3	Third person		NN	Noun
A	Agent		NOM	Nominative
ACC	Accusative		NPST	Near past
AGTZ	Agentizer		P	Patient
AN	Animate		PL	Plural
AT	Agent topic		PST	Past
FUT	Future		PT	Patient topic
GEN	Genitive		PTCP	Participle
HAB	Habitative		REL	Relative
IMP	Imperative		RPST	Remote past
INAN	Inanimate		SBJ	Subject
INDF	Indefinite		SG	Singular
LOC	Locative		TOP	Topic
M	Masculine		VB	Verb
N	Neuter			

Preface

This is my latest attempt to write a grammar of Ayeri, a fictional language which I have been developing since December 2003. Getting to work on grammar writing again was triggered by a growing dissatisfaction with not having a central place of documentation, when the first thing people look for on my website is often the grammar, incomplete as well as partially inaccurate and outdated as it may be. In addition to that, there was a seminar on fictional languages at the University of Tübingen, Germany, in the summer semester of 2016 (Buch 2016). Ayeri was one of the languages that was chosen for students to explore and evaluate.

The student group who worked on Ayeri came to the conclusion that its documentation is severely lacking in the description of basic elements and assumptions, since whole chapters of the grammar had been missing to date (Boga et al. 2016: 12).[1] This is to say that previous attempts of writing a full-fledged grammar of Ayeri have been incomplete due to creeping neglect.

Although the *Ayeri Grammar* has so far been lying dormant for five years, I have written a whole number of blog articles detailing various grammatical issues (Becker 2016: Blog). These articles have been taken into consideration here. This grammar writing attempt is thus not only a transferral to a different typesetting system, but constitutes an extension to previous formal documentation as well.

I hope that by transferring my previous grammar writing from LibreOffice to LATEX, combined with using GitHub as a version control system, maintaining and editing will become faster, more transparent, and more elegant, since LATEX operates on plain text files, and version control helps in keeping track of changes over time.

Carsten Becker
Marburg, July 4, 2016

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[1] ꤺꤲꤩꤣꤢꤸ *Kutānas-ikan* 'thanks a lot' to Bella Boga, Madita Breuninger, Thora Daneyko, and Martina Stama-Kirr for their hard work on making sense of my published materials in spite of information being scattered all over the place, as well as their providing me with the presentation concluding their group work.

0   Introduction

In December 2003, the idea for a new fictional language was born, an idea that turned out to stick with me for over 10 years now.[1] At that time, my seventeen years old self was still fairly new to this whole making-up languages business, read things about linguistics here and there, and was not shy to ask questions about terminology (and, looking at old mails, a little impertinently teenager-like so), for example on *Conlang-L* and the *Zompist Bulletin Board*. One thing seemed to catch my interest especially: syntactic alignments other than the NOM/ACC of the few languages I was familiar with, that is, German, English, and French. Apparently this curiosity was big enough for me to grow bored with my second fictional language, Daléian (declared 'quite complete' after maybe half a year of work or so), and to start something new from scratch in order to put newly acquired knowledge to test.

I had read about 'trigger languages' on *Conlang-L* and wanted to try my hands on making my own. I cannot remember how long it took me to come up with a first draft of an Ayeri grammar, however, I do remember having been told that a good language cannot be made in a summer. Of course, I still did not really know what I was doing then, even though I thought I had understood things and authoritatively declared "this is how it works" in my first grammar draft when things sometimes really do not work that way. But at least an interest had been whetted.

In order to illustrate the various stages from the beginnings to current Ayeri, I went through some old backups contemporary with the very early days. Here is a sentence from the oldest existing document related to it, titled "Draft of & Ideas for my 3rd Conlang"—the file's last-changed date is December 14, 2003, though I remember having started work on Ayeri in early December. I added glossing for convenience and according to what I could reconstruct from the notes. This uses vocabulary and grammatical markers just made up on the spot and for illustrative purposes; little of it actually managed to make it into actual work on Ayeri:

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[1]   A lot of the text here is taken from the blog article, "Happy 10th Anniversary, Ayeri!" (Becker 2013).

(1) *Ayevhoi   agiaemaesim   coyaielieðamavir   vhaieloyaŋaiye.*
     Ay-evhoi   agia-ema-esim   coyai-el-i-eðam-avir   vhai-el-o-yaŋa-iye
     3SG.AN-SBJ   read-VB-SBJ.AN   book-NN-AN-INDF-P   bed-NN-INAN-on-LOC

     'He reads a book on the bed.'

According to the grammar draft of September 5, 2004, this would have already changed to:

(2) *Ang   layaiyạin   mecoyalei   ling   *pinamea.*
     Ang   laya-iy-a-in   me-coya-lei   ling   *pinam-ea
     A.SBJ read-3SG.AN₁-a₁-SBJ INDF.INAN-book-P.INAN   top.of bed-LOC

     'He reads a book on the bed.'

The word ṉ̃ẓ̃ə̃ *pinam* 'bed' was only (re-)introduced on October 24, 2008. In the current state of Ayeri, I would translate the sentence as follows:

(3) *Ang   layaya   koyaley   ling   pinamya.*
     Ang   laya=ya.Ø   koya-ley   ling   pinam-ya
     AT   read=3SG.M.TOP   book-P.INAN   top.of bed-LOC

     'He reads a book on a/the bed.'

As you can see, quite a bit of morphology got lost already early on, especially the overt part-of-speech marking (!) and animacy marking on nouns. Also, prepositions were just incorporated into a noun complex as suffixes apparently. Gender was originally only divided into animate and inanimate, but I changed that at some point because only being familiar really with European languages, it felt awkward to me not to be able to explicitly distinguish 'he', 'she', and 'it'.

A feature that also got lost is the assignment of thematic vowels in personal pronouns to 3rd-person referents: originally, every 3rd-person referent newly introduced into discourse would be assigned one of /a e i o u/ to disambiguate, and there was even a morpheme to mark that the speaker wanted to dissolve the association. Constituent order was theoretically variable at first, but I preferred SVO/AVP due to familiarity with that. Later on, however, I settled on VSO/VAP. Also, I had no idea about what was called "trigger morphology" on *Conlang-L* for the longest time—essentially, this referred to the Austronesian, or Philippine, alignment. I am not claiming that I know all about it now, just that due to reading up on the topic, I have a slightly more informed understanding now. Orthography changed as well over the years, so ⟨c⟩ in the early examples encodes the /k/ sound, not /tʃ/ as it does today; diphthongs are spelled as ⟨Vi⟩ instead of modern ⟨Vy⟩.
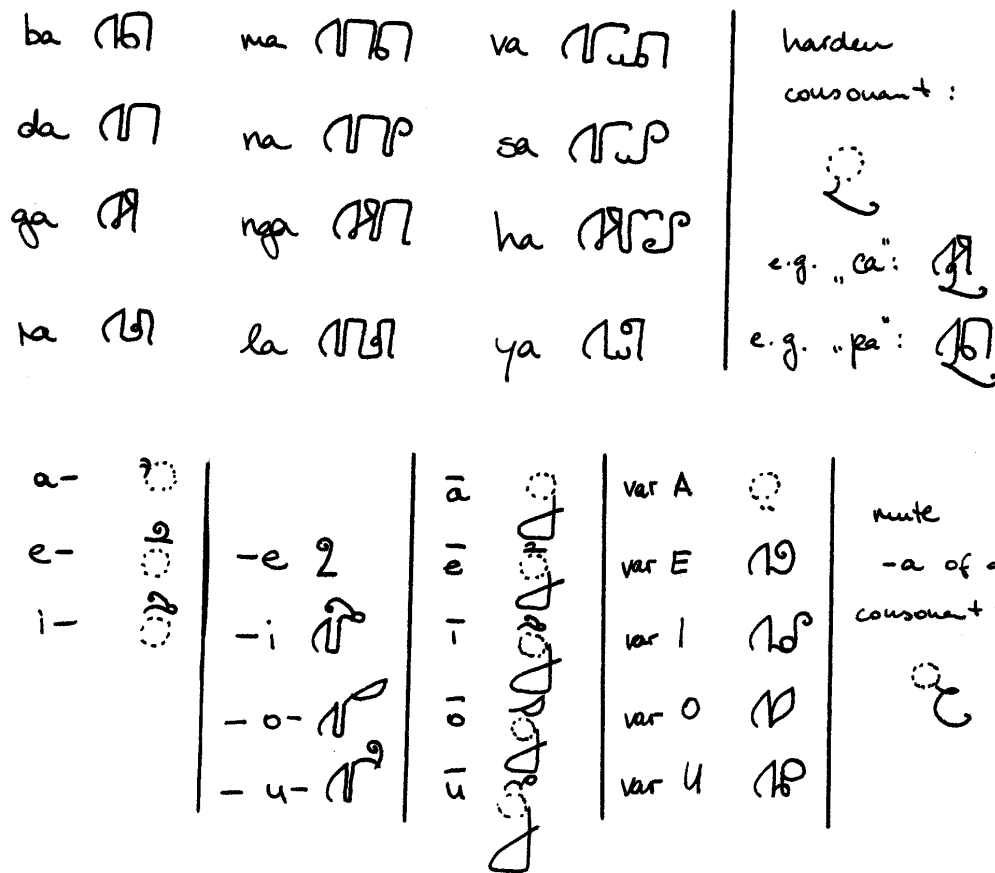
Figure 0.1: First design for an Ayeri script (February 9, 2004)

What was definitely beneficial for the development of Ayeri was the ever increasing amount of linguistics materials available online and my entering university (to study literature) in 2009, where I learned how to do research and also had a lot of interesting books available at the library.

One of the things people regularly compliment me on is Ayeri's script—note, however, that Tahano Hikamu was not the first one I came up with for Ayeri. Apparently, I had already been fascinated with the look of Javanese/Balinese writing early on; Figure 0.1 shows a draft dated February 9, 2004. However, since the letter shapes in this draft looked so confusingly alike that I could never memorize them. About a year later, I came up with the draft in Figure 0.2. What is titled "Another Experimental Script" here is what would later turn into Tahano Hikamu, Ayeri's 'native' script. According to the notes in my fictional language ring binder, the script looked much the same as today about a year from then, but things have only been mostly stable since about 2008.

Figure 0.2: First draft for Tahano Hikamu (March 23, 2005)

Another important date in the history of Ayeri is when I decided to set up an improved website for Ayeri that would include a blog. The idea was that this way, I could more freely write on whatever detail I currently worked on in Ayeri, outside of the constraints of the grammar. Thus, *Benung. The Ayeri Language Resource* launched on March 1, 2011. Being able to write short articles, however, probably also led to neglecting work on the actual formal reference grammar, which had been lying dormant from January 2011 on. This was always on the premise that I would eventually include the information form blog articles in the grammar. However, juggling such a big document had always felt daunting, so I let laziness take the better part of me eventually.[2] This renewed attempt at documentation has been started with the intention to right those wrongs.

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[2]   Let me add to my defense, however, that I also worked on my B.A. thesis in 2013 and my M.A. thesis in 2016, which required several months of preparation each and thus left me largely unable to work much on Ayeri.

1 Phoneme Inventory and Phonotactics

This chapter will present charts depicting the phoneme inventory of Ayeri, give an analysis of the phonotactics of Ayeri's dictionary entries and also describe stress patterns.

1.1 Phoneme Inventory

Consonants

At 17 consonants, Ayeri has a fairly mid-sized inventory. Table 1.1 shows the full chart. The sound /w/ only occurs marginally in ᮬᮬᮬᮬ *huākaya* [ˈwaːkaja] 'frog'. Other instances of it are allophones of /u/ followed by a vowel, for instance in ᮬᮬ *rua-* /rwa/ 'have to, must'. /w/ may also be an allophone of /uj/, as in ᮬᮬ *adauyi* [aˈdawi] 'then', ᮬᮬ *edauyi* [eˈdawi] 'now', or ᮬᮬ *nekuyi* [ˈnekwi] 'eyebrows'. The negative suffix ᮬ *-oy* is also commonly contracted to [w] before a diphthong:

(4)   ᮬᮬᮬ *mingoyay* → *minguay* [mɪŋˈwaɪ] 'I cannot' (can-NEG-1SG)

Moreover, the affricates /tʃ/ and /dʒ/ are usually allophones of /tj kj/ and /dj gj/, respectively. The plural marker ᮬ *-ye* is also commonly contracted to [dʒ] when a case suffix beginning with a vowel follows:

(5)   a.   ᮬᮬᮬ *nyānyeang* → *nyānjang* [ˈnjaːndʒaŋ] 'persons' (person-PL-A)

b.   ᮬᮬᮬ *netuyeas* → *netujas* [neˈtudʒas] 'brothers' (brother-PL-P)

The plural marker also may contract before the locative marker ᮬ *-ya*, basically for dissimilation:[1]

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[1]   ᮬ *-ea* also occurs as an variant morpheme, so that ᮬ *-ye* + ᮬ *-ea* → ᮬ *-yēa*.

	Bilabials	Labiodentals	Alveolars	Palatals	Velars	Glottals
Plosives	p b		t d		k g	
Affricates			tʃ ⟨c⟩ dʒ ⟨j⟩			
Nasals	m		n		ŋ ⟨ng⟩	
Fricatives		v	s			h
Taps/Flaps			r			
Approximants	(w)		l	j ⟨y⟩		

Table 1.1: Consonant inventory (divergent orthography in pointed brackets)

(6) �Ɪ *nivayeya* → *nivajya* [niˈvadʒja] 'at the eyes' (eye-PL-LOC)

Dissimilation of the sequence ᴜᴜ *-yaya* is attested in Becker (2012: 12), where the relative pronoun Ɪ *siyaya* appears transcribed as *sijya*:

> As far as morphophonology is concerned, the relative pronoun complex *sijya* 'in/at/on which.LOC' is interesting in so far as it is a contraction of **siyaya* 'REL-LOC-LOC' that I introduced here [...] Since this feature does not occur in previous texts, let's assume it's an acceptable variant.

It is noted, however, that the contraction happens "only if both parts are grammatical suffixes" (12).

While vowels become long when two identical vowels come into succession, consonants do not geminate but are treated like a single consonant:

(7) a. Ɪ *tavvāng* [taˈvaːŋ] 'you get' (get=2SG.A)

     b. Ɪ *disyyang* [diˈsjaŋ] 'I fasten' (fasten=1SG.A)

Vowels

Ayeri has a very basic five-to-six-vowel system, shown in Table 1.2.

Table 1.2: Vowel inventory (divergent orthography in pointed brackets)

	Front	**Center**	**Back**
High	i, iː ⟨ī⟩		u, uː ⟨ū⟩
Mid	e, eː ⟨ē⟩	(ə ⟨ə, e⟩)	o, oː ⟨ō⟩
Back		a, aː ⟨ā⟩	

The lax vowels [ɪ ɛ ɔ ʊ] occur as allophones of their tense counterparts [i e o u] in closed syllables, for example:

(8) a. Ɪ *ming* [mɪŋ] 'can, be able',

     b. Ɪ *enya* [ˈɛnja] 'everyone',

     c. Ɪ *agon* [ˈagɔn] 'outer, foreign', and

     d. Ɪ *pakur* [ˈpakʊr] 'ill, sick'.

/ə/ is a marginal phoneme and only occurs in the tense prefixes Ɪ *kə-* 'NPST', Ɪ *mə-* 'PST', Ɪ *və-* 'RPST', as well as in the prefix Ɪ *mə-* 'some, whichever'. Otherwise, [ə] occurs as an allophone of /e/ in final unstressed position, e.g. in the word Ɪ *mine* [ˈminə] 'affair, matter, issue'.

Ayeri also possesses a number of diphthongs, these are: /aɪ aːɪ eɪ ɔɪ ʊɪ aʊ/, spelled ⟨ay⟩, ⟨āy⟩, ⟨ey⟩, ⟨oy⟩, ⟨uy⟩, ⟨au⟩. Furthermore, the vowels [i e a o u] may be long: [iː eː aː oː uː]. Long vowels are lexicalized in a few words, for example:

(9) a. ᤞ᤟ᤚ *nīsa* 'wanted', ᤏ᤟ᤚ *pasīsa* 'interesting';

     b. ᤀᤖᤄ *arēn* 'anyway, however', ᤘᤠᤖ *lēra* 'whore';

     c. ᤐᤠ *lā* 'tongue', ᤛᤠᤏ *yāng* 'he' (he.A);

     d. ᤀᤠᤜ *nōn* 'wish'; and

     e. ᤀᤠᤜ *babūan* 'barbarian'.

Otherwise, long vowels result from two same vowels next to each other, for instance:

(10) ᤀᤐ᤺ *aja-* 'play' + ᤂᤄ *-an* 'NMLZ' → ᤀᤐᤄ *ajān* 'game, play'.

Morphophonologically, long vowels also occur in double-marked relative pronouns where the agreement marker for the relative clause's head has been omitted, for instance, ᤛᤠᤄ *sinā* 'of which, about which', as in the following example:

(11) *Le   turayāng   taman   sinā   ang ningay*
      Le   tura-yāng   taman-Ø   si-Ø-na   ang ning=ay.Ø
      PT.INAN   send=3SG.M.A   letter-TOP REL-PT.INAN-GEN   AT   tell=1SG.TOP

       tamala   vās.
       tamala   vās
       yesterday 2SG.P

     'The letter which I told you about yesterday, he sent it.'

This is to disambiguate it from the plain genitive-marked relative pronoun ᤛᤄ *sina* 'which.GEN':[2]

(12) *tamanang   ledanena   nā   sina   koronvāng*
      taman-ang   ledan-ena   nā   si-na   koron-vāng
      letter-A   friend-GEN 1SG.GEN   REL-GEN   know=2SG.A

     'the letter of my friend which you know'

As pointed out in (9c), the word ᤐᤠ *lā* 'tongue' ends in a long vowel, so the question is what happens when a case suffix beginning with a vowel is appended. To avoid a hiat, a glide /j/ may be inserted, so both of these are possible:

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[2]   A variant which combines the allomorphs of the relativizer and the genitive case marker in the
       opposite way also exists: ᤛ *s-* + ᤂᤄ *-ena* → ᤛᤄ *sena*.

(13) a. *Aku*   *lāas!*
      Aka-u   lā-as
      swallow-IMP tongue-P

      'Shut up!'

   b. *Aku lāyas!*
      (idem)

1.2 Phonotactics

For the purpose of this statistical analysis, all of the available translations into Ayeri since 2008 have been used as a text corpus; example sentences from various blog articles have also been added, as well as dictionary entries for all nouns, adjectives, adverbs, pronouns, adpositions, conjunctions, and numerals if they were not prefixes or suffixes.[3] Borrowings have been deleted, if they could not reasonably be words in Ayeri. Altogether, the corpus comprises 5,500 words; words may occur more than once.

Among the dictionary entries, verbs have notably been ignored, since verb stems alone do not constitute independent words—they are always inflected in some way, so that they may end in consonants or consonant clusters that independent words cannot end in. This also has repercussions on syllabification and stress, which depend on the inflection of the verb stem:

Table 1.3: Syllabification of inflected verbs

Suffix	*ca-* 'love'	*gum-* 'work'	*babr-* 'mumble'
-ay (1SG)	cáy	gu.máy	ba.bráy
-va (2SG)	cá.va	gúm.va	ba.brá.va
-yam (PTCP)	cá.yam	gúm.yam	bá.bryam

For the purpose of gathering statistics on phonemes, the words from translation texts were converted to IPA first. Fortunately, this is rather easy as Ayeri's romanization is very straightforward. Syllable breaks have also been inserted semi-automatically.

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[3]   This section updates and extends a previous analysis of the phonological makeup of dictionary entries (Becker 2010). The previous study had its focus on gathering frequency statistics for word generation, however, we want to know about words generally here.

Number of Syllables per Word

First, let us see how many syllables words commonly have (see Table 1.4). The higher the syllable count, the more likely it is for them to be compounds or inflected words.

Table 1.4: Relative frequency of words with different numbers of syllables (n = 5500)

Segment	Count	Percentage
2 syllables	2277	41.40%
3 syllables	1393	25.33%
1 syllable	1201	21.84%
4 syllables	547	9.95%
5 syllables	74	1.35%
6 syllables	8	0.15%

Two-syllable words make up the bulk of the sample, which is not surprising since 1,072 (55.43%) of the dictionary subsample are bisyllabic words. Most of Ayeri's roots are bisyllabic; unsurprisingly, most monosyllabic words are function words like the ones cited below. A few examples for each number of syllables per word:

(14)   a.   ᨏᨩ *yeng* 'she' (she.A),
             ᨶᨅ *le* (PT),
             ᨑᨘ *rua* 'must';

       b.   ᨍᨅ *datau* 'normal',
             ᨋᨏᨩ *mareng* 'it suffices' (suffice=3SG.INAN.A),
             ᨎᨆᨑ *nasay* 'near to';

       c.   ᨕᨑᨣᨩ *avanyāng* 'he sinks' (sink=3SG.M.A),
             ᨎᨑᨘᨎᨐ *narānye* 'words' (word-PL),
             ᨅᨑᨛᨅ *tovaley* 'a cloak' (cloak-P.INAN);

       d.   ᨝ᨑ᨞ᨑᨏ *hinyanveno* (corner.beautiful, a place name),
             ᨋᨩᨊᨋᨩ *mangasatong* 'they used to move' (move-HAB=3PL.N.A),
             ᨋᨑᨀ *mitanena* 'of the palace' (palace-GEN);

       e.   ᨓᨑᨛᨐᨋᨊᨑ *haruyamanas* 'beatings' (beat-PTCP-NMLZ-P),
             ᨔᨑᨛᨍᨐᨀ *sirutayena* 'of the night' (night-GEN),
             ᨔᨘᨊᨁᨚᨑᨀᨆᨓᨊ *sungkorankihas* 'geography' (science.map);

       f.   ᨀᨐᨖᨚᨋᨐᨀᨀ *kaytomayanena* 'of righteousness' (righteous-NMLZ-GEN),
             ᨀᨚᨑᨚᨎᨑᨛᨐᨔᨐᨊ *koronaryasayan* 'they used to forget' (forget-HAB-3PL.M),
             ᨎᨔᨛᨆᨐᨍᨁᨖᨩᨀ *nasimayajang-hen* 'all followers' (follow-AGTZ-PL-A=all).

Table 1.5 shows the frequencies of syllable types by position in a word. It is important to note here that phonemes which consist of more than one segment—affricates, diphthongs, and long vowels—have been counted as only one of C (consonant) or V (vowel), respectively. The following subsections will elaborate on which sounds the Cs and Vs correspond to.

In all positions, CV is the most common syllable type, followed by CVC. With a very big margin, V is the next most common syllable type, which is also most common in initial syllables and least common in monosyllabic words. The cases with only a few attestations are the following:

(15) a. Initial CVCC:

ཨིལྦ་ནང་ *silvnang* /sɪlv.ˈnaŋ/ 'I see' (see=1PL.A);

   b. Final CCCV:

མིགྲྱོ *migryo* /ˈmi.grjo/ 'flourishes' (flourish-3SG.N),

སུབྲྱོ *subryo* /ˈsu.brjo/ 'ceases' (cease-3SG.N);

   c. Single V:

ཨེ *ay* /aɪ/ 'I' (1SG.TOP).

The medial and final VC cases may seem like an oddity, but they are mostly due to the previous syllable ending in /ŋ/, with that syllable also containing a lax vowel, which means that this syllable must be closed. An alternative explanation would be to assume that /ŋ/ is ambisyllabic, or actually /n.g ~ ŋ.g/, but realized as [ŋ]. The high number of single-syllable VC is due to ཨང་ *ang* 'AT', which alone appears 255 times in the sample (4.63% of all words, 21.23% of monosyllabic words, 90.43% of monosyllabic VC words).

Phonemic Makeup of Initial Syllables

The statistics in the following sections have been gathered from the IPA conversions mentioned above. The transcriptions have been divided into plain text files:

- one containing all initial syllables of polysyllabic words,
- one containing all medial syllables of polysyllabic words,
- one containing all final syllables of polysyllabic words, and
- one containing all monosyllabic words.

Onsets, nuclei and codas have been matched by regular expressions; the command line tools `grep`, `sort`, and `uniq` were used to aggregate all occurring variants for each syllable segment as well as their absolute frequencies:[4]

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[4] However, `sort` was unable to handle all IPA characters, so `sed 'y/ɛɪɔʊə:ʃ3ŋ/EIOU@:SZN/'` had to be used to compensate by transcribing everything into X-SAMPA.

Table 1.5: Relative frequency of syllable types per word (n = 5500)

Type	Initial		Medial		Final		Single		Total	
CV	2904	67.55%	1975	72.05%	2108	49.03%	578	48.13%	7565	60.33%
CCV	55	1.28%	24	0.88%	47	1.09%	32	2.66%	158	1.26%
CCCV	—		—		2	0.05%	—		2	0.02%
CVC	754	17.54%	613	22.36%	1903	44.27%	298	24.81%	3568	28.45%
CCVC	29	0.67%	10	0.36%	88	2.05%	9	0.75%	136	1.08%
CVCC	1	0.02%	—		—		—		1	0.01%
V	488	11.35%	95	3.47%	67	1.56%	2	0.17%	652	5.20%
VC	68	1.58%	24	0.88%	84	1.95%	282	23.48%	458	3.65%
Total	4299	100.00%	2741	100.00%	4299	100.00%	1201	100.00%	12540	100.00%

Table 1.6: Relative frequency of onsets in initial syllables (n = 4299)

Phoneme	Frequency	Percentage
Ø	556	12.93%
s	488	11.35%
t	432	10.05%
m	418	9.72%
k	380	8.84%
n	375	8.72%
p	334	7.77%
b	231	5.37%
d	172	4.00%
v	164	3.81%
l	159	3.70%
r	134	3.12%
j	126	2.93%
g	111	2.58%
h	99	2.30%
tʃ	30	0.70%
pr	27	0.63%
nj	27	0.63%
kr	8	0.19%
br	8	0.19%
tr	6	0.14%
dʒ	4	0.09%
gr	3	0.07%
w	2	0.05%
sw	1	0.02%
rw	1	0.02%
pj	1	0.02%
mj	1	0.02%
bw	1	0.02%

```
(16)   C = (ʔ:tʃ|dʒ|[ptkbdgmnŋvshrljw])
       V = (ʔ:[aeɔʊ]:ɪ|[aeɔʊ]ɪ|aʊ|[ieaou]:|[ieaouɪɛɔʊə])
```

As we have seen above (Table 1.5), CCV syllables only make up 1.28% of initial syllables, in so far it is no surprise that consonant clusters all appear at the bottom of Table 1.6. There also seem to be combination patterns in that initial clusters exist for all plosives plus /r/, and almost all bilabials plus /j/, with the exception of /bj/, however, /nj/ is added to the group instead. Combinations with /w/ only occur for /b/, /r/, and /s/, which do not share an obvious connection. Syllables without a consonant filling the onset position are marked with 'Ø'; these numbers correspond to the VC and VCC rows in Table 1.5.

Perhaps most striking about the nuclei of initial syllables presented in Table 1.7 is that it is plain vowels which occur most of the time. As mentioned above, lax vowels are counted here as allophones of tense ones as their distribution is complementary, which is why the plain vowels are presented as grouped. Long vowels and diphthongs find themselves below the 5% threshold, and the words with single occurrences are:

(17)   a.   ꠰ꠛꠞ꠫ *kuysān* 'comparison',

       b.   ꠥꠇ꠫ *nōn* 'will, intention',

       c.   ꠥꠌꠞ *nīsa* 'wanted',[5]

       d.   ꠰ꠇꠥꠛ *sēyraya* 'will overcome' (FUT-overcome-3SG.M),

       e.   ꠌꠛ꠫ *sautan* 'cork'.

As [eːɪ] only occurs due to allophony, it should not be counted as a phoneme for the purposes of this analysis. On the other hand, the same could be said for a lot of cases of [aː] included here—this caveat applies to all nouns derived from verbs ending in *-a* with the very common nominalizing suffix ꠈꠞ꠫ *-an*, as exemplified in (10) above.

As written above, the vowel [ə] is usually only found as an allophone of /e/ at the end of words, however, the 21 cases reported here are mostly from the tense prefixes also mentioned above, for instance, ꠝꠢꠇꠞꠥꠇꠞ *mə-koronay* 'I knew' (PST-know=1SG.TOP).
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Phonemic Makeup of Medial Syllables

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[5]   ꠥꠌꠞ *nīsa* and ꠥꠇ꠫ *nōn* are both related to ꠥꠇ *no-* 'want, plan'.

Table 1.7: Relative frequency of nuclei in initial syllables (n = 4299)

Phoneme		Frequency	Percentage
a		1847	42.96%
i		1011	23.52%
	i	*802*	*18.66%*
	ɪ	*209*	*4.86%*
e		705	16.40%
	e	*523*	*12.17%*
	ɛ	*164*	*3.81%*
	ə	*18*	*0.42%*
u		260	6.05%
	u	*227*	*5.28%*
	ʊ	*33*	*0.77%*
o		227	5.28%
	o	*188*	*4.37%*
	ɔ	*39*	*0.91%*
aː		109	2.54%
aɪ		88	2.05%
eɪ		40	0.93%
eː		4	0.09%
ɔɪ		3	0.07%
ʊɪ		1	0.02%
oː		1	0.02%
iː		1	0.02%
eːɪ		1	0.02%
aʊ		1	0.02%

Table 1.8: Relative frequency of codas in initial syllables (n = 4299)

Phoneme	Frequency	Percentage
Ø	3447	80.18%
n	299	6.96%
ŋ	236	5.49%
r	129	3.00%
l	89	2.07%
m	74	1.72%
s	20	0.47%
h	2	0.05%
t	1	0.02%
lv	1	0.02%
k	1	0.02%

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Phonemic Makeup of Final Syllables

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Phonemic Makeup of Single Syllables

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Table 1.9: Relative frequency of onsets in medial syllables (n = 2741)

Phoneme	Frequency	Percentage
Ø	119	4.34%
r	343	12.51%
n	260	9.49%
j	233	8.50%
t	222	8.10%
d	213	7.77%
k	189	6.90%
s	170	6.20%
m	169	6.17%
l	149	5.44%
v	148	5.40%
h	147	5.36%
p	119	4.34%
g	92	3.36%
b	89	3.25%
tʃ	20	0.73%
dʒ	15	0.55%
tr	11	0.40%
dr	8	0.29%
pr	7	0.26%
w	6	0.22%
ŋ	4	0.15%
sj	2	0.07%
br	2	0.07%
sw	1	0.04%
kw	1	0.04%
kj	1	0.04%
bj	1	0.04%

Table 1.10: Relative frequency of nuclei in medial syllables (n = 2741)

Phoneme		Frequency	Percentage
a		1480	53.99%
i		480	17.51%
	i	*387*	*14.12%*
	ɪ	*93*	*3.39%*
e		254	9.26%
	e	*206*	*7.52%*
	ɛ	*48*	*1.75%*
o		194	7.08%
	o	*119*	*4.34%*
	ɔ	*75*	*2.74%*
u		120	4.38%
	u	*102*	*3.72%*
	ʊ	*18*	*0.66%*
aː		110	4.01%
aɪ		51	1.86%
ɔɪ		33	1.20%
eɪ		5	0.18%
eː		5	0.18%
aʊ		5	0.18%
ʊɪ		2	0.07%
uː		1	0.04%
iː		1	0.04%

Table 1.11: Relative frequency of codas in medial syllables (n = 2741)

Phoneme	Frequency	Percentage
Ø	2094	76.40%
n	313	11.42%
ŋ	193	7.04%
r	48	1.75%
m	39	1.42%
s	32	1.17%
l	21	0.77%
t	1	0.04%

Table 1.12: Relative frequency of onsets in final syllables (n = 4299)

Phoneme	Frequency	Percentage	Phoneme	Frequency	Percentage
Ø	151	3.51%	hj	5	0.12%
j	1101	25.61%	bj	5	0.12%
n	528	12.28%	tw	4	0.09%
r	398	9.26%	sw	4	0.09%
t	266	6.19%	sj	4	0.09%
s	244	5.68%	ŋ	4	0.09%
l	238	5.54%	kw	3	0.07%
k	199	4.63%	kr	3	0.07%
d	184	4.28%	br	3	0.07%
m	154	3.58%	vr	2	0.05%
v	142	3.30%	rw	2	0.05%
h	128	2.98%	nw	2	0.05%
p	115	2.68%	tv	1	0.02%
g	103	2.40%	tʃv	1	0.02%
dʒ	73	1.70%	tʃj	1	0.02%
b	73	1.70%	rj	1	0.02%
tʃ	52	1.21%	nj	1	0.02%
vj	26	0.60%	mw	1	0.02%
pj	22	0.51%	kt	1	0.02%
dʒj	17	0.40%	gt	1	0.02%
tr	10	0.23%	grj	1	0.02%
w	9	0.21%	dv	1	0.02%
pr	7	0.16%	dr	1	0.02%
kj	6	0.14%	brj	1	0.02%

Table 1.13: Relative frequency of nuclei in final syllables (n = 4299)

Phoneme		Frequency	Percentage
a		2408	56.01%
a:		316	7.35%
o		411	9.56%
	o	*298*	*6.93%*
	ɔ	*113*	*2.63%*
i		289	6.42%
	ɪ	*147*	*3.42%*
	i	*142*	*3.30%*
aɪ		254	5.91%
u		207	4.82%
	u	*155*	*3.61%*
	ʊ	*52*	*1.21%*
e		209	4.85%
	ɛ	*127*	*2.95%*
	ə	*81*	*1.88%*
	e	*1*	*0.02%*
eɪ		103	2.40%
ɔɪ		42	0.98%
a:ɪ		23	0.54%
ʊɪ		14	0.33%
aʊ		14	0.33%
e:		5	0.12%
i:		3	0.07%
u:		1	0.02%

Table 1.14: Relative frequency of codas in final syllables (n = 4299)

Phoneme	Frequency	Percentage
Ø	2224	51.73%
n	899	20.91%
ŋ	651	15.14%
s	244	5.68%
m	225	5.23%
l	34	0.79%
r	21	0.49%
k	1	0.02%

Table 1.15: Relative frequency of onsets in single syllables (n = 1201)

Phoneme	Frequency	Percentage
Ø	284	23.65%
n	231	19.23%
s	147	12.24%
j	144	11.99%
k	51	4.25%
v	48	4.00%
m	46	3.83%
l	44	3.66%
t	41	3.41%
d	33	2.75%
r	26	2.16%
h	23	1.92%
mj	16	1.33%
p	13	1.08%
tʃ	9	0.75%
g	9	0.75%
nj	8	0.67%
rw	7	0.58%
b	7	0.58%
pr	5	0.42%
dʒ	3	0.25%
tr	2	0.17%
nw	1	0.08%
ŋ	1	0.08%
kr	1	0.08%
br	1	0.08%

Table 1.16: Relative frequency of nuclei in single syllables (n = 1201)

Phoneme		Frequency	Percentage
a		568	47.29%
aɪ		171	14.24%
aː		140	11.66%
i		113	9.41%
	i	*65*	*5.41%*
	ɪ	*48*	*4.00%*
e		104	8.66%
	ɛ	*65*	*5.41%*
	e	*34*	*2.83%*
	ə	*5*	*0.42%*
o		45	3.75%
	ɔ	*30*	*2.50%*
	o	*15*	*1.25%*
u		20	1.67%
aːɪ		14	1.17%
ɔɪ		10	0.83%
iː		6	0.50%
eɪ		5	0.42%
ʊɪ		3	0.25%
oː		2	0.17%

Table 1.17: Relative frequency of codas in single syllables (n = 1201)

Phoneme	Frequency	Percentage
Ø	612	50.96%
ŋ	377	31.39%
n	105	8.74%
s	58	4.83%
m	36	3.00%
l	6	0.50%
h	4	0.33%
r	3	0.25%

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