A Phonological Sketch of Atorai (Arawak, Guyana)  
Based on Unique Recordings

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1 Introduction

1.1 Arawak Language Family

- The Arawak language family (aka Maipuran) is one of the most widespread in the Americas, ranging from the Caribbean south to Argentina and from Peru to central Brazil (Figure 1)
  
  - Taino was the first Amerindian language that Columbus encountered in 1492

![Figure 1: Distribution of Arawak Languages (Payne 1991:361)](image)

- Italian Jesuit Filippo Gilii (1721-1789) proposed Maipure as a language family in his (1782) *Saggio di storia americana*, four years before William Jones’ address to the Asiatic Society
• Classifications of Arawak are notoriously coarse-grained, with well established low-level sub-groups and numerous proposals for intermediate groupings

1.2 Atorai Language and People

• The Atorai language belongs to a branch of Arawak that includes Wapishana and Mawayana
  – For Wapishana, a grammar in Santos (2006), SIL and native speaker linguist dictionaries
  – For Mawayana, a phonological description in Coretta (2013), basic morphology in Michels (2014)

The Atorai people appear to have first been contacted in 1719 (Bos 1985)

They belong to the Wapisiana-Parauana family, however they are now nearly extinct. I found in 1843 only seven adults of the pure Atorais [...] Including those arising from an intermarriage between an Atorai female and a Wapishana, and their sister-tribe the Taurais or Dauris, there might be about 100 individuals, comprising adults and children. (Schomburgk 1848:54)
At present they do not exist as a separate tribe and no longer speak their own language. They have been absorbed by the Wapisianas, whose language is in common use. Very few can speak Ataroi [sic] and the language will disappear with this generation.

(Farabee 1918:131)

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1.3 Reel-to-reel Recordings

- The Atorai data under consideration here is drawn from portions of 13 reel tapes created by G. Kingsley Noble, Jr. (1923-1994) in the Rupununi river basin (Guyana) in 1965
  - Noble received his PhD in anthropology from Columbia in 1962 with a dissertation titled *Proto-Arawakan and its Descendants*
  - Professor at San Jose State University from 1963 to 1982
- In 1972 he applied for but was denied a visa to return for fieldwork during his 1973 sabbatical
- At this time Noble gave the reel tapes to Prof. Vida Kenk (SJSU)
• Around 2005 Kenk gave them to Prof. Manjari Ohala (SJSU), who deposited them with the Survey of California and Other Indian Languages

• There are approximately 2.5 hours of recorded lexical elicitation in Atorai (resulting in over 1,000 tokens of words and short phrases), and one, possibly two, short texts-

2 Phonological Description

• This section describes the basic segmental inventories, phonotactics, phonological processes, and prosodic patterns of Atorai

2.1 Segmental Inventories

• There are 16 phonemic consonants (Table 1), some sparsely attested

<table>
<thead>
<tr>
<th>Table 1: Atorai Consonant Inventory</th>
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<tbody>
<tr>
<td>Plain Stop</td>
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<td>Implosive</td>
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<td>Affricate</td>
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<td>Fricative</td>
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<td>Nasal</td>
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<td>Glide</td>
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<td>Flap</td>
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</table>

• Contrasts and distributions of consonants within a word are shown below

/pišawa/ ‘field’ /kupaži ‘fish’ /bišai ‘back’ /kišai ‘stone’
/mitšu ‘mosquito’ /tamaši ‘bat’ /wišu ‘tail’ /awari ‘wind’
/tašaři ‘jaguar’ /kuwiži ‘lizard’ /diwi ‘salt’ /kuđaři ‘tapir’
/tsušaři ‘pot’ /akuši ‘needle’ /suši ‘tortoise’
/naši ‘1SG’ /mašiři ‘rainbow’ /-tʃama ‘vulva’ /kaʃaři ‘medicine’ /ʃiwi ‘flower’ /kaʃiři ‘armadillo’
/ʒumni ‘spider monkey’ /kuwiši ‘basket’ /jawaňi ‘man’ /waʃuken ‘sky’
/kuʃaři ‘child’ /-daku ‘mouth’
/haʃaři ‘partridge’ /baʃi ‘manioc bread’

• There are 8 phonemic vowels in Atorai (Figure 5), of 4 qualities contrasting in length

i i i i: u u:
 a a:

Figure 5: Atorai Vowel Inventory
• Contrasts between vowels are shown below
  /kamui/ ‘sun’  /kišau/ ‘frog’
  /kuwajaja/ ‘snake’  /kanijji/ ‘bitter manioc’

• Long vowels are generally attested in all positions within a word
  /dini/ ‘dog’  /karijji/ ‘lake’
  /pi:ni:kii/ 2SG  /kutijja/ ‘bird’  /kuaraitji/ ‘child’
  /bu:rai/ ‘capybara’  /kiju:/ ‘testicle’
  /ra:pun/ ‘loincloth’  /tama:jiu/ ‘bat’  /baidapa:/ ‘one’

• Diphthongs of falling sonority are attested, i.e., ai, aï, au

2.2 Phonotactics
• No monomoraic words are attested, but bimoraic monosyllabic words are, e.g., di: ‘pepper’
• Attested syllable shapes are V, CV, CVN, CVV, and CVVN

2.3 Phonological Processes
• Word-final vowels are frequently and significantly devoiced
  – The resulting word-final consonants are also devoiced
• At least b, t, j, and k palatalize in the environment i_V
  – [i'bi:atfu] ‘shrimp’
  – [i't:i:] ‘his testicle’
  – [wi:jai] ‘village’
  – [i:k'ai:di:fi(V)] ‘three’
• t additionally palatalizes following u, e.g., [kuri:tu] ‘fishing net’
• k labializes following in the environment u_V

2.4 Stress
• There is a stress system consisting of trochaic feet
  – [mitju] ‘mosquito’
  – [i'bi:atfu] ‘shrimp’
  – [maka'fij(V)] ‘sweet manioc’
• Alignment of feet with a word edge is not discernible from present data
• Syllables containing nasal codas, diphthongs, and/or long vowels attract stress

1A ‘V’ in parentheses in this document indexes the presence of an indiscernible final vowel.
3  Previously Published Word Lists

- Karl von Martius (1794-1868) was a German botanist and explorer
- Between 1817 and 1820 he traveled throughout Brazil with Johann Baptist von Spix (1781-1826) on an expedition sponsored by the King of Bavaria, Maximilian I Joseph
- This resulted in dozens of vocabularies that are often the sole documentation Brazilian indigenous languages that went extinct in the 19th century (von Martius 1867)
- Von Martius recorded 18 Atorai words (Figure 6)

![Figure 6: Vocabulary Comparison](von Martius 1867:313)

- He noted differences between Wapishana and Atorai, e.g., Wap. <kamo> (kamu) vs. Ator. <kamoi> (kamui) ‘sun’; or Wap. <weri> (wizi) vs. Ator. <watsieirhe> (patfai(V)) ‘star’

- Jacob Adrien van Heuvel (1787-1874) was the son of Jan Cornelius van den Heuvel, the governor of the Dutch colony at Demerara until 1790
- The family resettled in New York City, van Heuvel graduated Yale in 1804, and was admitted to the bar in 1808

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2Van Heuvel’s obituary is available here: http://mssa.library.yale.edu/obituary.ecord/1859;924/1874-75.pdf. The Van den Heuvel family’s time in New York City is described here: http://daytoninmanhattan.blogspot.com/2013/10/the-lost-van-den-heuvel-mansion.html.
• Between 1819 and 1820 he returned to Guiana to research Sir Walter Raleigh’s time there in the 16th century and his claims as to the presence of El Dorado.

  On, or near the Rippumuni [sic] are Macoussies, Wapisanas, and some Charibees, with a few scattering Indians – the remains of tribes who have been reduced by the Charibees, and the greater portion driven away – all of whom, except this nation, live either on the tops of the mountains, or close to their foot; where the soil is strong and productive. On the Siperouni, are Macoussies and Ackoways, and two or three other tribes. On the east, or main branch of the Essequibo, the two principal nations are the Atorays, or Atorees, and the Turamas [sic], a numerous and warlike nation, besides a number of others. Three of these nations, the Ackoways, Atorays, and Macoussies, were mentioned a century ago, by Nicholas Hortsman, according to Humboldt, as residing in this locality. I obtained vocabularies of their languages, which are, I believe, unknown in Europe; – the two first, taken down by myself [...] (van Heuvel 1844:47)

• Van Heuvel recorded 34 Atorai words (some as in Figure 7)

![Vocaularies of the Languages of Five Indian Nations in Guyana](https://baselbern.swissbib.ch/Record/HAN000003785)

Figure 7: Comparison of Guyanese Languages (van Heuvel 1844:164)

• **Johann Natterer (1787-1843)** was an Austrian naturalist and explorer

• He accompanied von Martius and von Spix in 1817, remaining in Brazil until 1835

• Natterer recorded 192 Atorai words (the largest collection for over 80 years) in July 1832 on the Rio Branco, west of where van Heuvel had located Atorai speakers over a decade earlier

• There are some lexical differences between Natterer’s list and 20th-century forms, e.g., <papai> ‘Vater’ vs. uhwari ‘father’

• Other systematic correspondences are present that suggest sound changes, e.g., <jauhanei> ‘Mann’ vs. yawanai ‘man’ & <Maitschei> ‘Teufel’ vs. mailfa ‘spirit’

3Natterer’s manuscript word lists are available online through the University of Basel, here: https://baselbern.swissbib.ch/Record/HAN000003785.
• In general, however, there are not substantial inconsistencies with 20th-century forms

<vua danáři> ‘Campo’ – vadanáři ‘savanna’
<kupááu> ‘Fisch’ – kupái ‘fish’
<kodói> ‘Anta’ – kodúí ‘tapir’
<kapááa> ‘Tatú’ – kapái ‘armadillo’
<bitscha> ‘Porco d’Matto’ [sic] – bitfbitfái ‘pig’

• Robert Hermann Schomburgk (1804-1865) was a German botanist and ethnographer who worked on behalf of the British crown

• He was employed by William IV for an expedition to Guyana from 1835 to 1839, and again by Queen Victoria from 1840 to 1844
Concerned with the boundaries of the young British territory, Schomburgk made some of the most precise descriptions of the distributions of indigenous groups at the time.

The Wapityans, or Wapisianas, are rather a powerful horde, and inhabit the Savannahs of the White Waters, namely, between the Parima, Takutu, Rupununi, and Guíralu. A number are likewise located on the isolated mountain groups of Canucu or Conocon, Tuarutu, and Kaiírite. They are bordered on the north by the Macusis, on the south by the Atorais, and to the west by the Parauanas. The two last are sister tribes. The country between the second and third parallel of north latitude, and the eastern bank of the Essequibo and the western of the Parima (Rio Branco) defines the abodes of the Wapisianas, the whole number of which may amount to about 800, and of those about 400 reside in the British territory. [...] 

If I except the allied tribes mentioned hereafter, the language of the Wapisiana stands isolated among the Guianians, and as far as my knowledge goes, there is no other among the languages of that province which in structure comes closer to the central families of North America.

The Wapisianas are considered usurpers of the ground which they now inhabit, having pressed the Macusis northward.

The language of the Wapisianas is very peculiar, and its intonations are strong. It has several sounds which it would not be possible to represent by our alphabets. This refers chiefly to some syllables of which I could only give an indication by designating them as resembling nghw, ghkt, rrh, &c., as in nghwanna, untagh’k’tef (ph), kei’irrh. They are aspirate and liquid sounds which possess only a similarity in the Celtic languages.

He was also intimately familiar with the role of disease spanning his multiple expeditions.

[May 24, 1843] Six years have scarcely passed away since I wandered to this spot on visiting the sources of the Essequibo. We left the settlement Eischalli Tuna, and passed on our route to the Taruma Indians, three villages of Atorais or Atoarayas, and one of Taurais, the latter containing the remnant of that sister tribe of the Atorai nation. The villages have vanished, death has all but extirpated the former inhabitants, and I am informed that of the true Atorais only seven individuals are alive. From the accounts I received in 1837, I estimated the number of Atorais and Taurais at 200, including the descendants of mixed marriages, and of that number about 60 are now left.

The measles, so fatal to the Indians, has twice decimated the Atorais; and at the commencement of the present year, the small-pox, brought from the colony to Pirara, ravaged from thence southward so far as these poor people. [...] 

The language of the Amaripas differed only in dialect from that of the Atorai. They inhabited the regions about the Tuarutu Mountains, near the river Wampuna; and as Miaha well recollected when the late Dr. Hancock was at the Upper Rupununi in 1811, I had a fixed point from which to date my inquiries as to whether the extinction of the Amaripas had been slow or rapid. She told me that at that time their number was not quite so many as two men had fingers and toes (I concluded she meant about 35 individuals), and of that number Miaha alone remained in 1843. (Schomburgk 1845:26-28) 

Schomburgk recorded 18 Atorai words, some of which are shown in Figure 8.
Everard Ferdinand im Thurn (1852-1932) was a British botanist, explorer & administrator

- He was Curator of the British Guiana Museum (Georgetown) from 1877 to 1882

Everard recorded 6 Atorai words

William Curtis Farabee (1865-1925) was an American geneticist, receiving a PhD in physical anthropology from Harvard in 1903

He undertook three expeditions to South America, 1906-1908, 1913-1916, and 1921-1923

- The medial trip, which led to the publication of *The Central Arawaks* in 1918, was sponsored by the University Museum of the University of Pennsylvania

Farabee collected historical, ethnographic, and linguistic information on indigenous groups of the region, including a list of 122 Atorai words
### Examples of the Chief Indian Languages of Guiana.

<table>
<thead>
<tr>
<th>English</th>
<th>Branch; Warra</th>
<th>Branch; Arawak</th>
<th>Branch; Wapiana</th>
<th>Tribe; True Arawak</th>
<th>Tribe; True Wapiana</th>
<th>Tribe; True Carib</th>
<th>Tribe; Ackawd</th>
<th>Tribe; Macual</th>
<th>Tribe; Aracuna</th>
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<tbody>
<tr>
<td>Wood</td>
<td>dow</td>
<td>ada</td>
<td>atomboth</td>
<td>?</td>
<td>wey-weh</td>
<td>ye-hi</td>
<td>yh</td>
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<td>Arrow</td>
<td>a-ta-bu</td>
<td>simara</td>
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<td>purbwah</td>
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<td>Fire</td>
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<td>apo</td>
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<tr>
<td>Moon</td>
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<td>kachi</td>
<td>kai-er</td>
<td>kaihr</td>
<td>noo-nah</td>
<td>kapoo-i</td>
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<td>Medicine-man</td>
<td>wasidai-a</td>
<td>semtchehi</td>
<td>marinow</td>
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<td>puyal</td>
<td>peartsan</td>
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<td>Jaguar</td>
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<td>One</td>
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<td>abaro</td>
<td>ba-dap</td>
<td>baidepah</td>
<td>ohwin</td>
<td>tewin</td>
<td>tewen</td>
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Unfortunately I have no Arecuna vocabulary at my disposal; but the language differs merely by very slight varieties of pronunciation from the Macual. Robert Schomburgk says the same of it. *(See Retam in British Guiana, vol. ii. p. 688.)*

### References


Schomburgk, Robert. 1848. Remarks to Accompany a Comparative Vocabulary of Eighteen Languages and Dialects of Indian Tribes Inhabiting Guiana. Simmond’s Colonial Magazine and Foreign Miscellany XV:46–64.


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