



# Project 1

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## Hypothesis:

If a language does *not* have fricatives, then it is more likely to be spoken in mainland Australia than outside of it.



# Content:

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- Fricatives
- History of Australian languages
- Australian Language families
- Living Languages

## 3. Analyses

- Discussion
- Conclusion

## 2. Data Collection

- Maps
- Languages outside Australia
- Australian languages

# Fricatives

-Consonants

-Force air through small passage

-turbulent airflow is called frication

-the lower lip against the upper teeth [f]

-the back of the tongue against the soft palate [x]

-the side of the tongue against the molars [ʃ]

## Fricatives

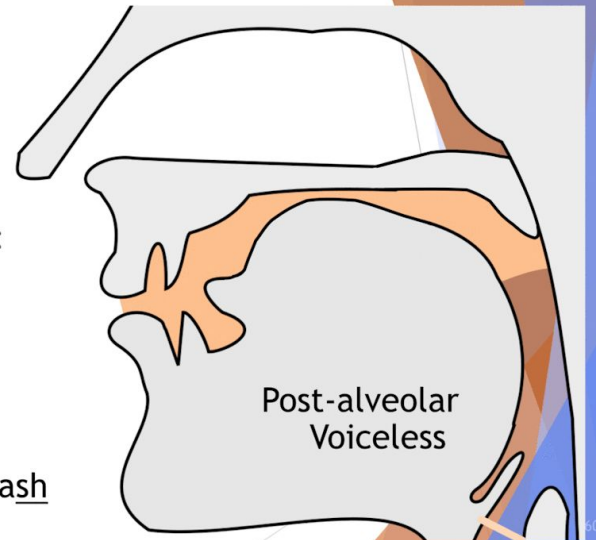
▶ Voiced fricatives:

▶ [v], [ð], [z], [ʒ]

▶ Voiceless fricatives:

▶ [f], [θ], [s], [ʃ]

shiny, smashing, hash



## the international phonetic alphabet (2005)

consonants  
(pulmonic)

	LABIAL		CORONAL				DORSAL				RADICAL		LARYNGEAL
	Bilabial	Labio-dental	Dental	Alveolar	Palato-alveolar	Retroflex	Alveolo-palatal	Palatal	Velar	Uvular	Pharyngeal	Epi-glottal	Glottal
Nasal	m	ɱ	n			ɳ	ɲ		ŋ	ɴ			
Plosive	p b		t d			ʈ ɖ	ç ʝ		k ɡ	q ɢ			
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	ħ ʕ	h ɦ	
Approximant		ʋ	ɹ			ɻ	j		ɰ				
Tap, flap		ɹ̥	ɾ			ɽ							
Trill	ʙ		r							ʀ		ʀ̤	
Lateral fricative			ɬ ɮ			ɮ̠	ɬ̺	ɮ̺					
Lateral approximant			l			ɭ	ʎ	L					
Lateral flap			ɭ			ɭ̟							

Where symbols appear in pairs, the one to the right represents a modally voiced consonant, except for murmured *ɦ*.  
Shaded areas denote articulations judged to be impossible. Light grey letters are unofficial extensions of the IPA.

# History of Australian languages

-late 18th century: 250 aboriginal languages

-Aboriginal Australian languages store songs, bush tucker and traditional medicine

-21st century 150 languages

-Early contact of Europeans : Indigenous Australian languages were of less value than English

-Aboriginal people were discouraged from speaking their ancestral languages and made to feel ashamed of using them in public

-This view was reinforced through government policy

-education and employment practices only in English

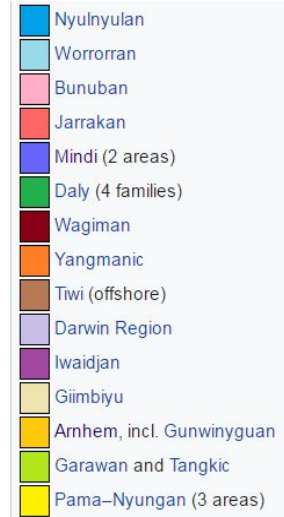
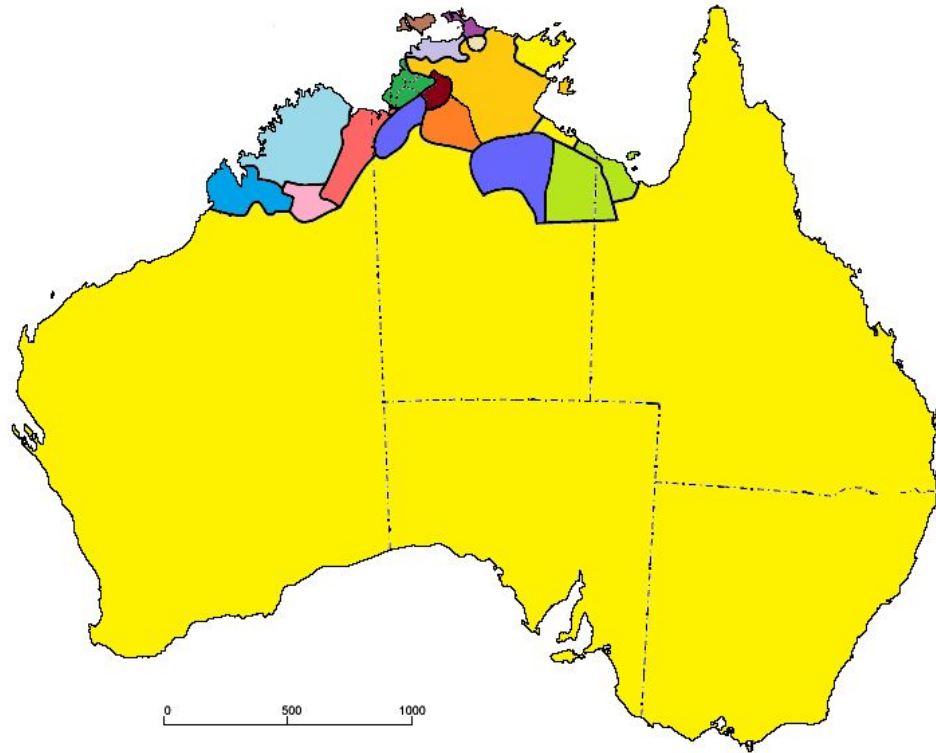


Language and Culture in Aboriginal Australia, Walsh & Yallop, ch. 1  
[http://lryb.aiatsis.gov.au/PDFs/walshyallop\\_ch1.pdf](http://lryb.aiatsis.gov.au/PDFs/walshyallop_ch1.pdf)  
[https://en.wikipedia.org/wiki/Australian\\_Aboriginal\\_languages](https://en.wikipedia.org/wiki/Australian_Aboriginal_languages)  
<https://blog.manitobah.ca/2013/09/11/four-aboriginal-medicines/>  
<http://www.abc.net.au/radionational/programs/rnfirstbite/bush-tucker/4914724>

# History of Australian languages

- link between generations broken, children little or no knowledge about their traditional language
- 13 living languages today, 4 of them without fricatives
- living languages in most isolated areas
- Australian languages form a language area
- Area shares much of their vocabulary and many distinctive phonological features

# Australian language families

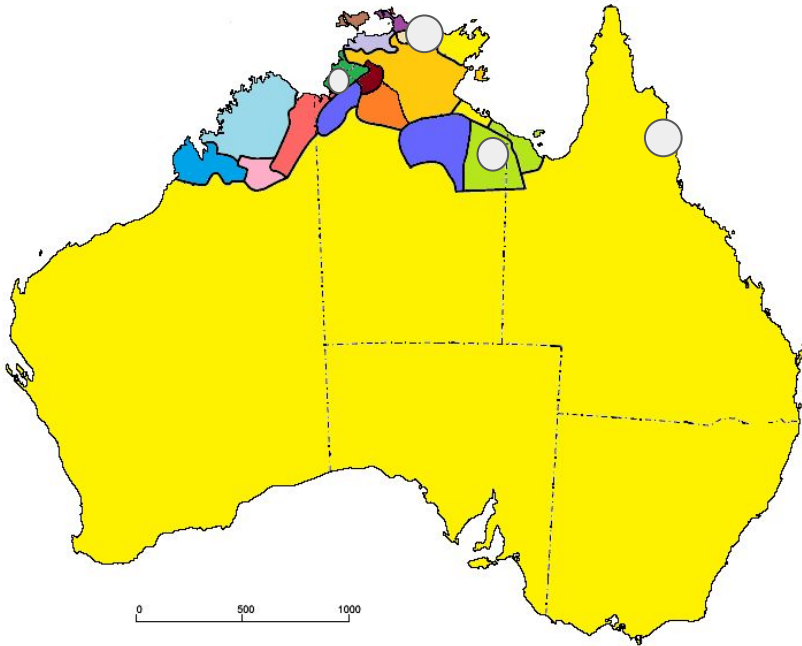


Language families without fricatives:

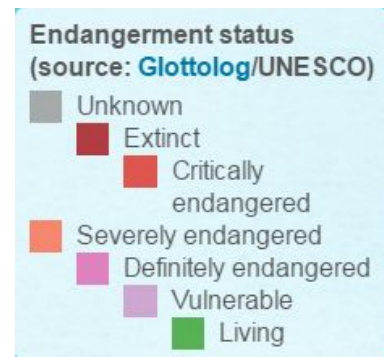
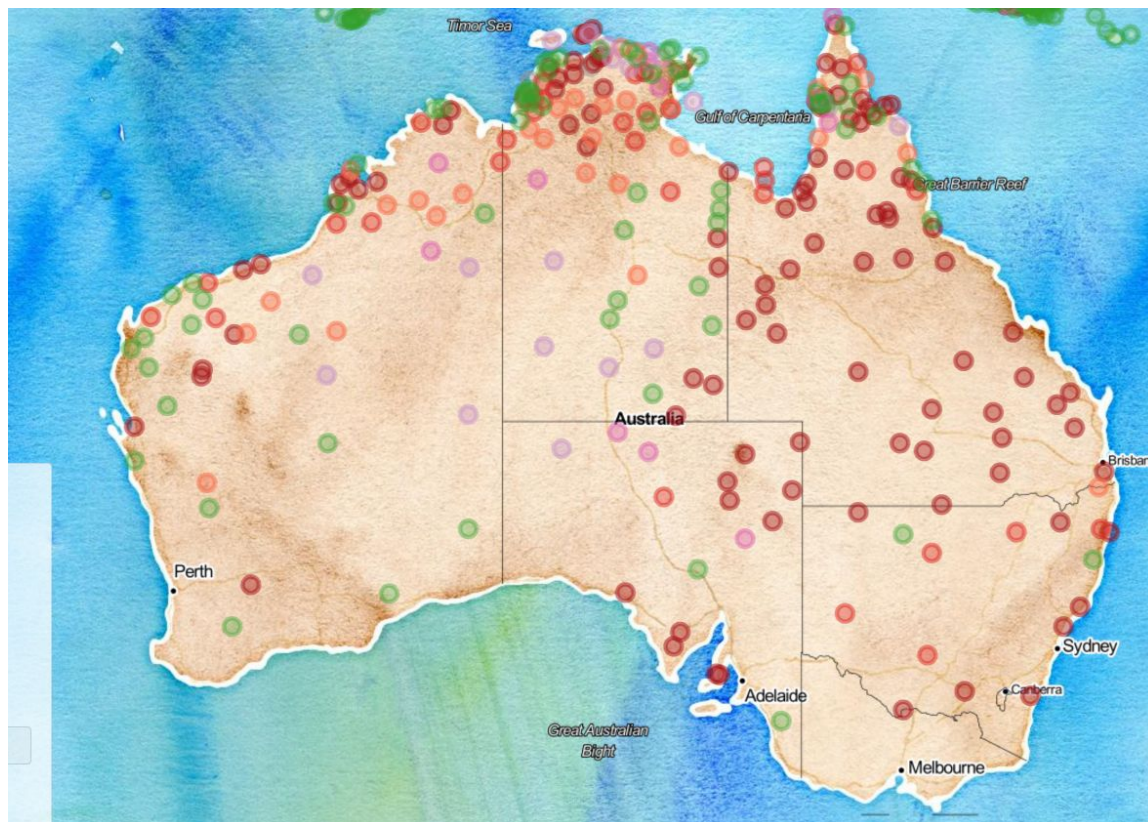
- Pama-Nyungan
- Daly
- Gunwinyguan & Arnhem
- Garawan
- Nyulnyulan



# Living fricativeless languages



Language	Language-Family	Number of Speakers (UPSID)
Yiding / Yidiny	Pama-Nyungan	~150
Burarra	Maningrida	~1070
Garawa	Garawan	~90
Murrinh-Patha	Daly	~1830



This map shows us how many living languages there still are.

The most Languages are extinct or critically endangered.

# Languages without fricatives across the world

According to WALS, there are 48 languages that do not contain fricatives.

The majority are pictured here, with 27 coming from Australia, 56.25%

Source:<http://wals.info/feature/18A#2/21.6/155.7>

UPSID returns 31 languages reported to not contain any fricatives, of which 22 come from Australia, 70.97%.

Source:[http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid\\_sounds.cgi](http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid_sounds.cgi)

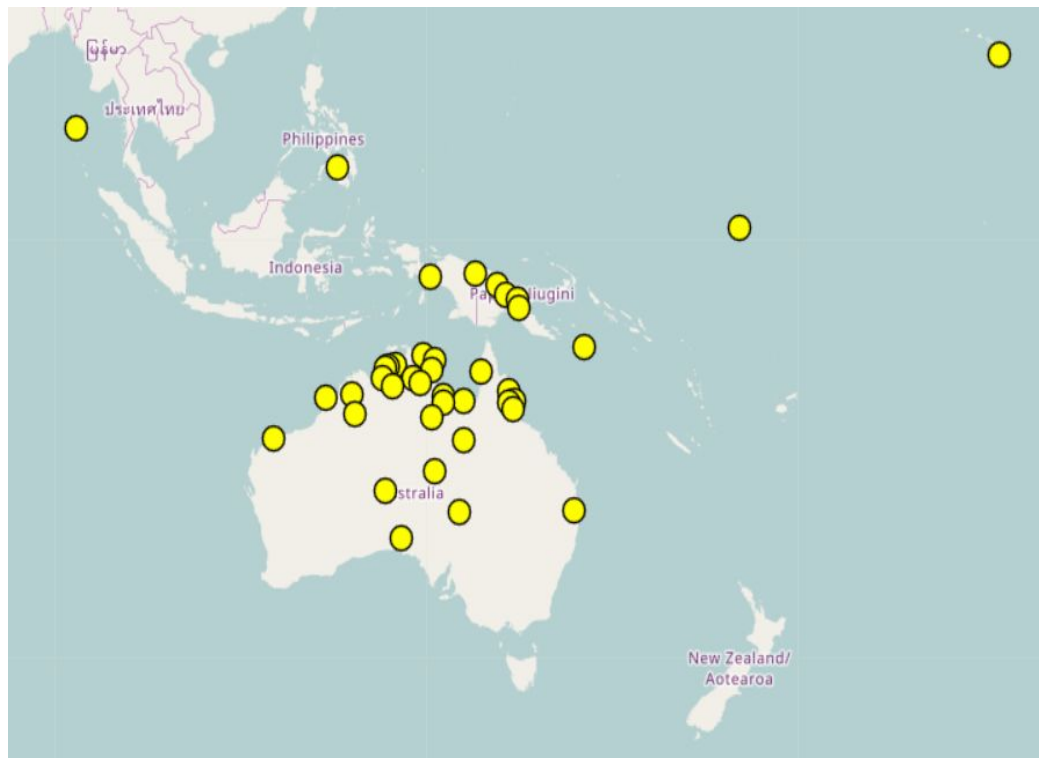
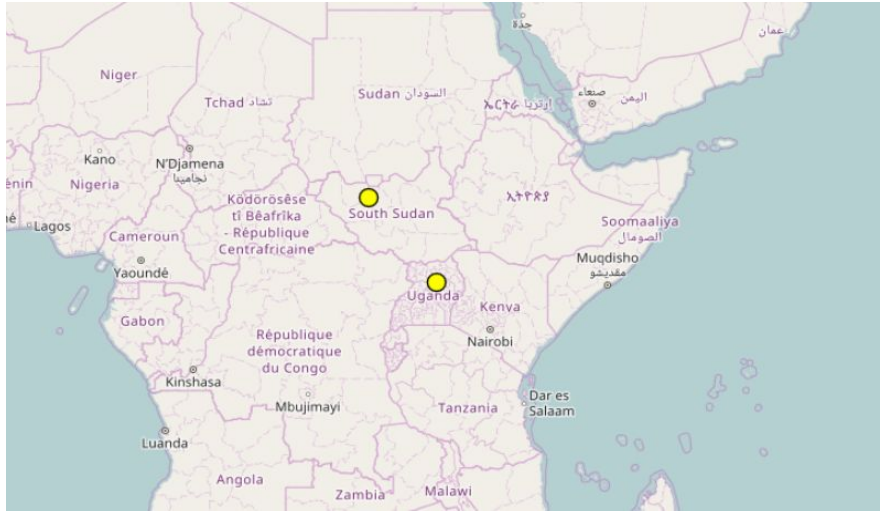


Image:<http://wals.info/feature/18A#3/-14.60/143.44>



African languages make up 4.2% of the non-fricative languages according to WALS. With Dinka in South Sudan and Lango in Uganda

Source:  
<http://wals.info/feature/18A#2/21.6/155.7>

Image: <http://wals.info/feature/18A#4/5.72/38.76>

UPSID gives only Dinka as containing no fricatives, 3.23% of their non-fricative languages.

Source: [http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid\\_sounds.cgi](http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid_sounds.cgi)

There are six languages in South America without fricatives according to WALS, 12.5%.

Source:<http://wals.info/feature/18A#2/21.6/155.7>

There are 3 languages in the UPSID database, 9.68% of their sample.

Source:[http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid\\_sounds.cgi](http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid_sounds.cgi)



Image:<http://wals.info/feature/18A#3/-27.27/299.42>

# Northeastern Dinka

- South Sudan, Africa
- Nilotic language family
- Living: 320,000 speakers
- Comprised of 7 dialects.

Source: <https://cainesap.shinyapps.io/langmap/>  
<http://glottolog.org/resource/languoid/id/nort2815>



Image: Glottolog

# Northeastern Dinka

- UPSID and PHOIBLE attribute 32 segments to Northeastern Dinka.
- 13 vowels and 19 consonants.
- Characterised by breathy or creaky voiced vowels, for instance ɔ̤ or ɔ̰.

Source: <http://phoible.org/inventories/view/307#tipa>

- Taught in Primary School
- Some literacy materials available
- Language used by all ages
- Latin Script

Source: <https://www.ethnologue.com/language/dip>

# Northeastern Dinka

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t̪ d̪	t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ	n̪	n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ		ʀ	ʀ					ʀ		
Tap or Flap		ʋ	ɽ	ɽ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant			ɻ	ɻ		ɻ	ʎ	ʎ			

Image: <http://phoible.org/inventories/view/307#tipa>





# Dinka Sample



Video: [https://www.youtube.com/watch?v=9zARvtWSKGA&list=PLZ09UeGU0\\_AcBGvFOXaJnbtuTlUhCrvZk](https://www.youtube.com/watch?v=9zARvtWSKGA&list=PLZ09UeGU0_AcBGvFOXaJnbtuTlUhCrvZk)

# Bororo

- Brazil, South America
- Bororoan language family
- Definitely Endangered:  
1,390 speakers

Source:<https://cainesap.shinyapps.io/langmap/>



Image: Glottolog

# Bororo

- UPSID and PHOIBLE attribute 20 segments to Bororo.
- 7 vowels and 13 consonants.

Source: <http://phoible.org/inventories/view/258#tipa>

- Spoken by majority of ethnic group
- Portuguese increasingly being spoken alongside Bororo
- Literacy rate of 10-30% in L1 speakers, and 15-25% in L2 speakers.
- Latin script

Source: <https://www.ethnologue.com/language/bor>

# Bororo

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t̪ d̪	t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ	ɲ	n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ		ʀ	r					ʀ		
Tap or Flap		ɸ	ɽ	ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant			ɹ̥	l		ɭ	ʎ	ʟ			

Image: <http://phoible.org/inventories/view/258#tipa>



# Bororo Sample



Video: <https://www.youtube.com/watch?v=IgrfrnIKWWA>

# Angaataha



- Papua New Guinea
- Angan language family
- Living: 2,100 speakers

Source: <https://cainesap.shinyapps.io/langmap/>



# Angaataha

- UPSID and PHOIBLE attribute 21 segments to Angaataha
- 9 vowels and 12 consonants
- Analysed as having 3 tones: high, low and falling
- Developing language, spoken by all ages
- Latin Script

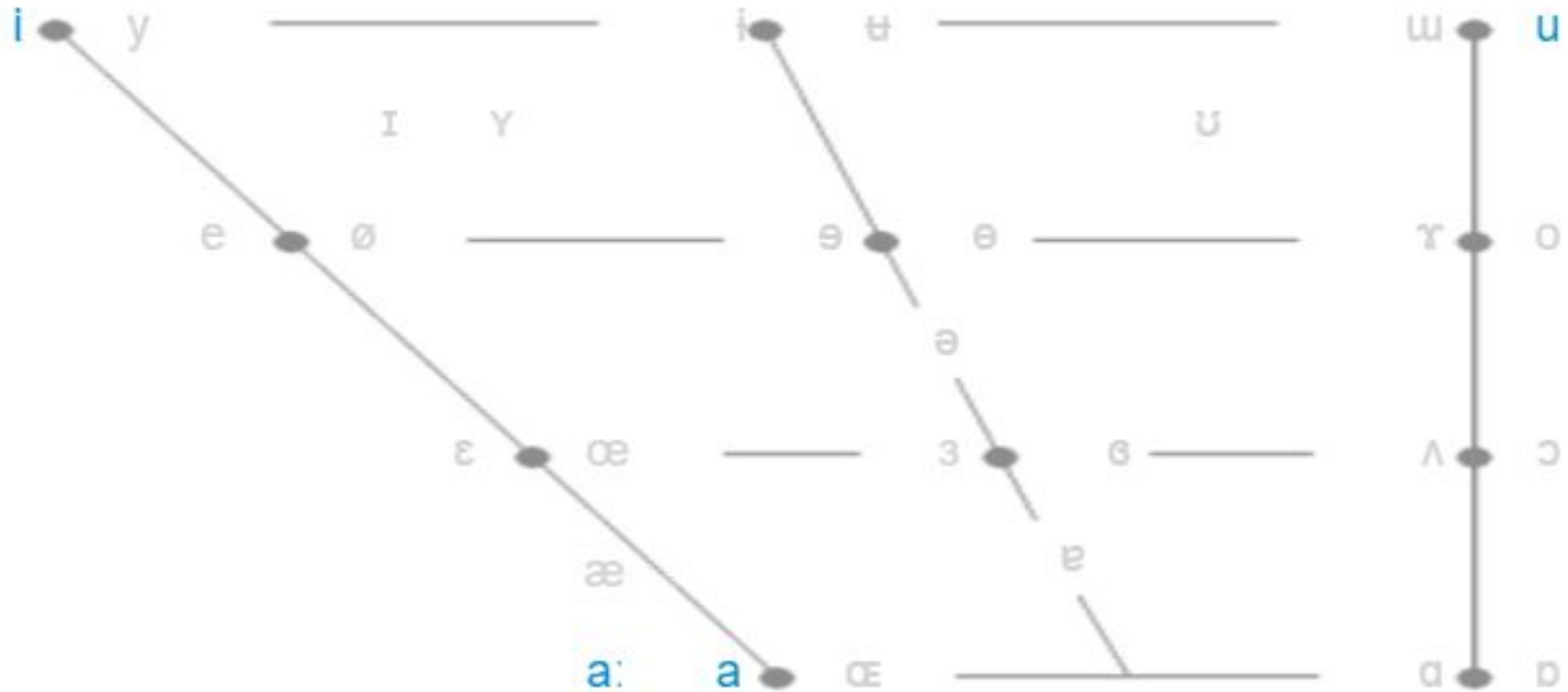
Sources:

<http://phoible.org/inventories/view/203>

<http://menzerath.phonetik.uni-frankfurt.de/L/L8627.html>

<https://www.ethnologue.com/language/agm>

# Angaataha



# Angaataha

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t̪ d̪	t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ	n̪	n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ		ʀ̪	ʀ					ʀ		
Tap or Flap		ⱱ	ɾ̪	ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant			ɻ̪	l		ɭ	ʎ	ʟ			

Image: <http://phoible.org/inventories/view/203#tipa>

# Arrernte

- Northern Territory, Australia (Alice Springs area)
- Language family: Pama-Nyungan, Arandic
- native speakers: 2380 (2006 census)
- UNESCO status: vulnerable



source: <http://glottolog.org/resource/languoid/id/east2379>

# Arrente

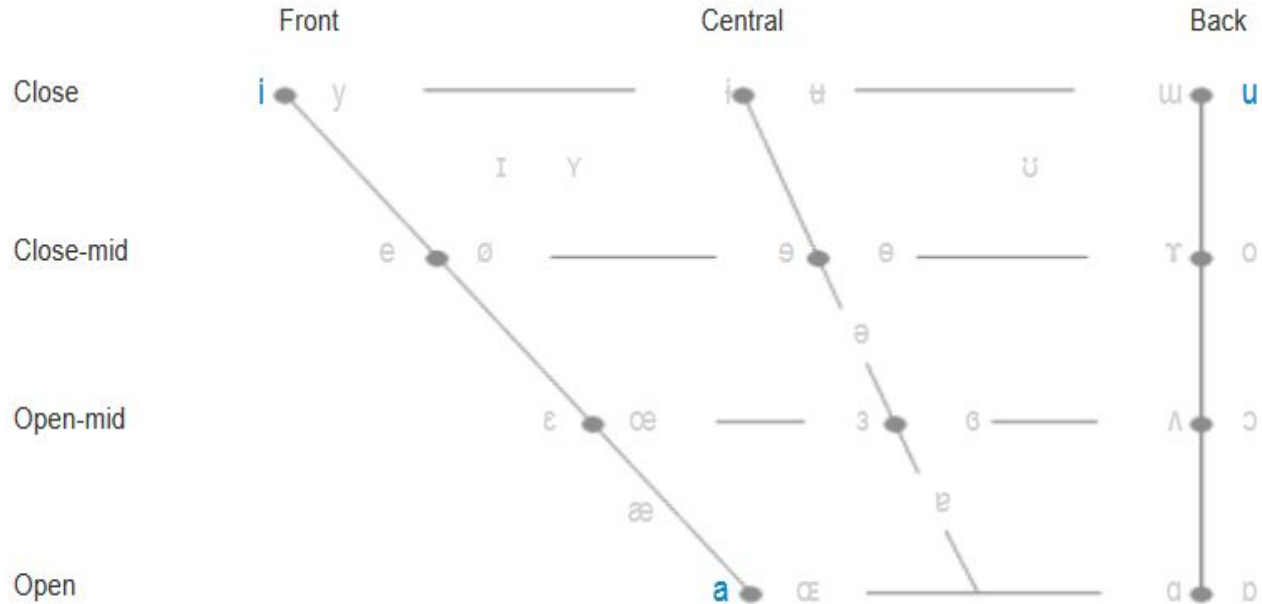
## Consonants (Pulmonic)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t̪ d̪	t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ	n̪	n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ		ɽ	ʀ					ʀ		
Tap or Flap		ɸ	ɽ	ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant			ɻ	l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

# Arrernte

## Vowels



Where symbols appear in pairs, the one to the right represents a rounded vowel.

# Arrernte

- UPSID attributes 30 segments to Arrernte
- 3 vowels and 27 consonants
- separated into Eastern (4 dialects) and Western Arrernte(1 dialect)
- writing: Latin script

# Arrernte

- taught to all students in the primary schools of Alice Springs
- available as an optional subject in high school and in the Centralian College
- many employers in Alice Springs encourage their employees to learn some Arrernte
- english bilingual program at school at Santa Teresa, Radio, TV, Videos, Dictionary, Grammar, Texts



# Arerrernte

## **Sample text in Arerrernte**

Anwerne Mparntwe-arenye tyerrtye mapele arrenhantherre  
welcome-ileme apmere anwerne-kenhe-werne. Anwerne  
ahentye-aneme arrantherre akaltye-irremele  
respectem-ilettyeke apmere nhenhe.

Video: a shop

<https://www.youtube.com/watch?v=ogVB-xrzBz8&t=13s>

# Murrinh-Patha

- Northern Territory, Australia (Wadeye)
- Language family: Southern Daly
- Number of speakers: 1830 (2006 census)
- Status: developing



# Murrinh-Patha

## Consonants (Pulmonic)

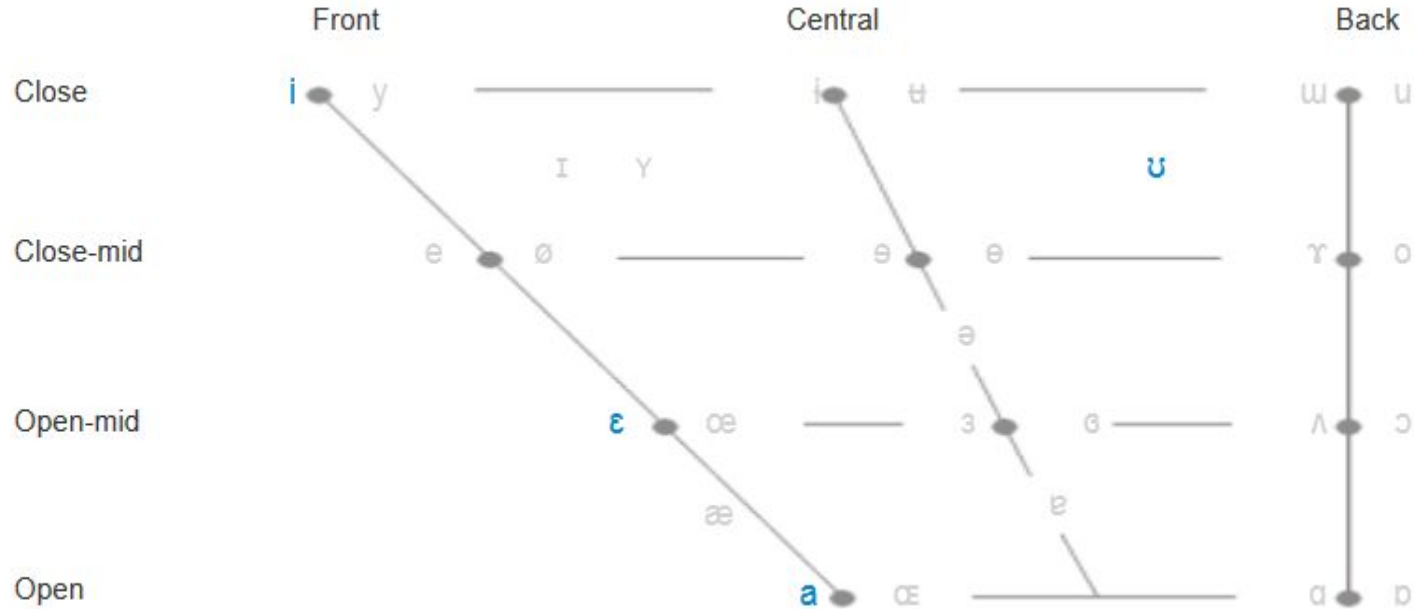
	Bilabial		Labiodental		Dental		Alveolar		Postalveolar		Retroflex		Palatal		Velar		Uvular		Pharyngeal		Glottal	
Plosive	p	b			t̪	d̪	t	d			ʈ	ɖ	c	ɟ	k	g	q	ɢ			ʔ	
Nasal		m		ɱ		ɲ		n				ɳ		ɲ		ŋ		ɴ				
Trill		β				ʀ		r										ʀ				
Tap or Flap				v		ɾ		ɾ				ɽ										
Fricative	ɸ	β	f	v	θ	ð	s	z	ʃ	ʒ	ʂ	ʐ	ç	ʝ	x	ɣ	χ	ʁ	ħ	ʕ	h	ɦ
Lateral fricative							ɬ	ɮ														
Approximant				ʋ			ɹ					ɻ	j		ɰ							
Lateral approximant							ɻ	l				ɻ	ʎ		ʎ							

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

Source: <http://phoible.org/inventories/view/474#tipa>

# Murrinh-Patha

## Vowels



Where symbols appear in pairs, the one to the right represents a rounded vowel.

# Murrinh-Patha

- UPSID attributes 25 segments to Murrinh-Patha
- 4 vowels, 21 consonants
- 3 dialects
  
- Only one other language in the family
  
- Writing: Latin script

# Murrinh-Patha

- used as a lingua franca in the Wadeye area



number of speakers has increased and usage expanded over the past generation:

- Children are actively acquiring the language
- Language dictionary and grammar
- Murrinh-Patha is taught in schools in the region

# Murrinh-Patha

- the name Murrinh-Patha means "language good"
  - for the Murrinh-Patha speakers, their language is very closely tied with their land, identity, associations and relation to their surroundings
  - video:  
<https://www.youtube.com/watch?v=KTs8OnISUBY>
- Educational video encouraging people to 'Be Crocwise' in and around waterways in Murrinh-Patha

# Garawa

- language family:  
Garawa (contains only one other language)
- spoken in the Northern Territory, Australia
- number of speakers:  
59
- UNESCO status:  
critically endangered





# Garawa

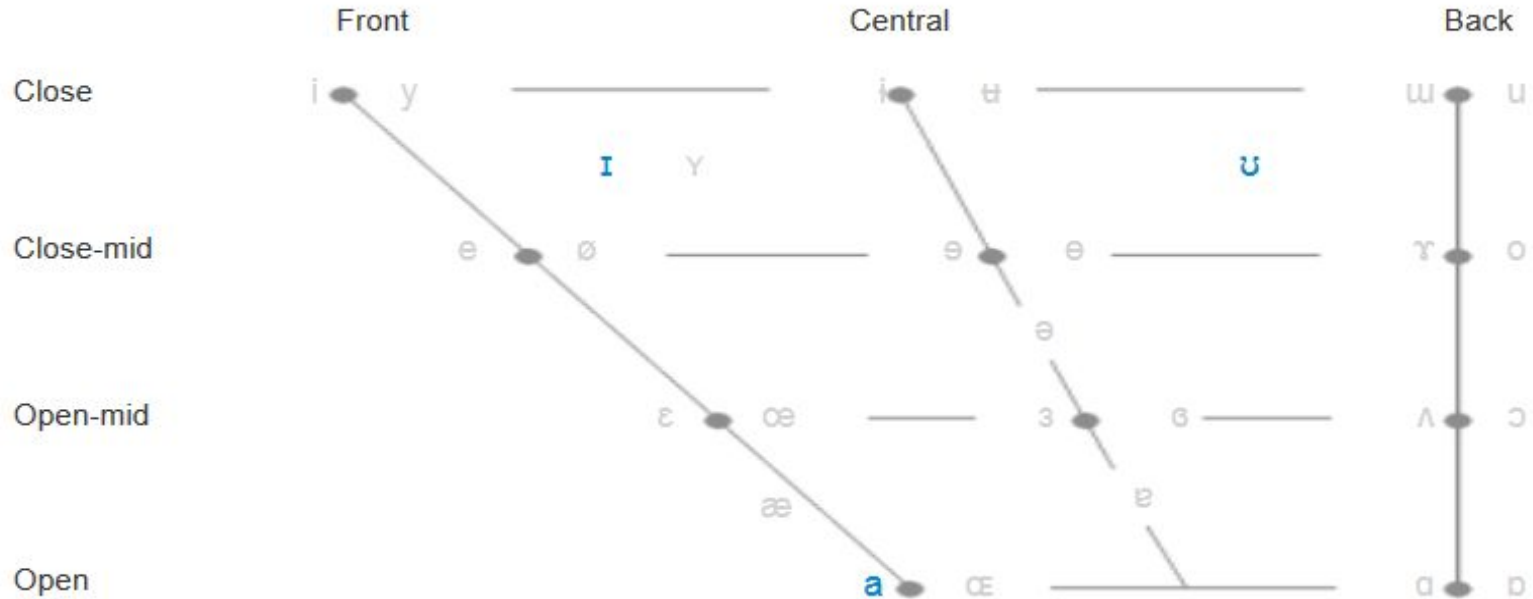
## Consonants (Pulmonic)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t̪ d̪	t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ	n̪	n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ		ɽ	ɽ					ʀ		
Tap or Flap		ɸ	ɽ	ɽ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant			ɻ	l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

# Garawa

## Vowels



Where symbols appear in pairs, the one to the right represents a rounded vowel.

# Garawa

- UPSID attributes 22 segments to Garawa
- 3 vowels and 19 consonants

status on Ethnologue „shifiting”:

- The child-bearing generation can use the language among themselves, but it is not being transmitted to children
- Children have not been learning the language since 1980, most speakers are over 50 years old

# Garawa - Bible Excerpt

Badajbayi Jisus Kingkarrinya

1-2Wabula kamambarra barrabarruji, jali mikuyaji jambanyi, mikuyaji wabudanyi, nanamanji kamambarra, baki nanda barri jungku nyulili Kudnyina. Nanda barri jungkukili kingkarri nangandu Kudnyina, nanda karu jali jangkurranyi nangangi kudkanyi. Jungku bulili malumba, nanda baki Kud. Malumba bulili jungku nanankujarra. Mankumanku bulangkili nanamannga jangkurranyi.

<https://www.bible.com/de/bible/1372/JHN.1>

# Discussion

# Pama-Nyungan expansion

- 13 out of 27 (48%) of the Australian languages without fricatives come from the Pama-Nyungan language family  
→ The largest, best described and currently reconstructible Australian language family
- the common ancestor of Pama-Nyungan is younger in age than that of the Non-Pama-Nyungan languages

source: Backtracking to Babel: the chronology of Pama-Nyungan expansion in Australia Archaeol. Oceania 31 (1996) 125-144

# Pama-Nyungan expansion

-Pama-Nyungan dispersed from the central north of the continent

(Evans and Jones 1995; Evans and McConvell in press)

-took place in the mid-Holocene, roughly between 6000 and 3000 BP, spread through most of the continent

source: Backtracking to Babel: the chronology of Pama-Nyungan expansion in Australia Archaeol. Oceania 31 (1996) 125-144

# Pama-Nyungan expansion

**Hypothesis 1:** the Proto-Pama-Nyungan language never had fricatives

- The other language families were influenced through language contact
- Similarly, it could go the other way: the non-Pama-Nyungan language families are older than Pama-Nyungan, they could have influenced the sound inventories of the Pama-Nyungan languages



# Defining language endangerment

Degree of endangerment	Intergenerational Language Transmission
safe	language is spoken by all generations; intergenerational transmission is uninterrupted
vulnerable	most children speak the language, but it may be restricted to certain domains (e.g., home)
definitely endangered	children no longer learn the language as mother tongue in the home
severely endangered	language is spoken by grandparents and older generations; while the parent generation may understand it, they do not speak it to children or among themselves
critically endangered	the youngest speakers are grandparents and older, and they speak the language partially and infrequently
extinct	there are no speakers left

source: <http://www.unesco.org/culture/ich/index.php?pg=00139>

LANGUAGE	SPEAKERS	STATUS
Kalkatugu	unknown	extinct
Waray	unknown	extinct
Mbabaram	unknown	extinct
Diyari	unknown	extinct
Malahmalah	33	critically endangered
Alawa	12	critically endangered
Dyirbal	29	critically endangered
Bandjalang	100	severely endangered
Yanyuwa	120	severely endangered
Bardi	160	severely endangered
Nunggubuyu	110	severely endangered
Wih-munghan	1060	vulnerable
Arrente	3400	vulnerable

Yiding	150	living
Burrara	1070	living
Garawa	87	living
Murrinh- Patha	1830	living

source: [http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid\\_sounds.cgi](http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid_sounds.cgi)

- discussable **hypothesis 2**: are languages without fricatives dying out ?
- according to UPSID > only 4 living Australian languages left
  - > only 23% of the Australian languages (without fricatives)

LANGUAGE	SPEAKER	STATUS
Dyirbal	unknown	critically endangered
Bororo	1390	definitely endangered
Angaataha	2100	living
Dinka	320000	living

source: [http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid\\_sounds.cgi](http://menzerath.phonetik.uni-frankfurt.de/cgi-bin/upsid_sounds.cgi)

- examples of statuses in other parts of the world:
- 2 living languages
- 2 endangered languages
- **hypothesis 3:** “in the few cases where fricatives do occur, they developed recently through the **lenition** (weakening) of stops, and are therefore non-sibilants like [ð] rather than sibilants like [s] which are common in other parts of the world.”

source: [https://en.wikipedia.org/wiki/Australian\\_Aboriginal\\_languages](https://en.wikipedia.org/wiki/Australian_Aboriginal_languages)

# Comparison of the databases: WALS, UPSID, PHOIBLE

**striking ! databases are not equivalent**

total number of languages without fricatives: <b>WALS</b>	total number of languages without fricatives: <b>UPSID</b>
<b>48</b>	<b>31</b>

# Example: Hawaiian

- according to WALS the Hawaiian language does not contain fricatives
- according to PHOIBLE and UPSID Hawaiian does contain fricatives

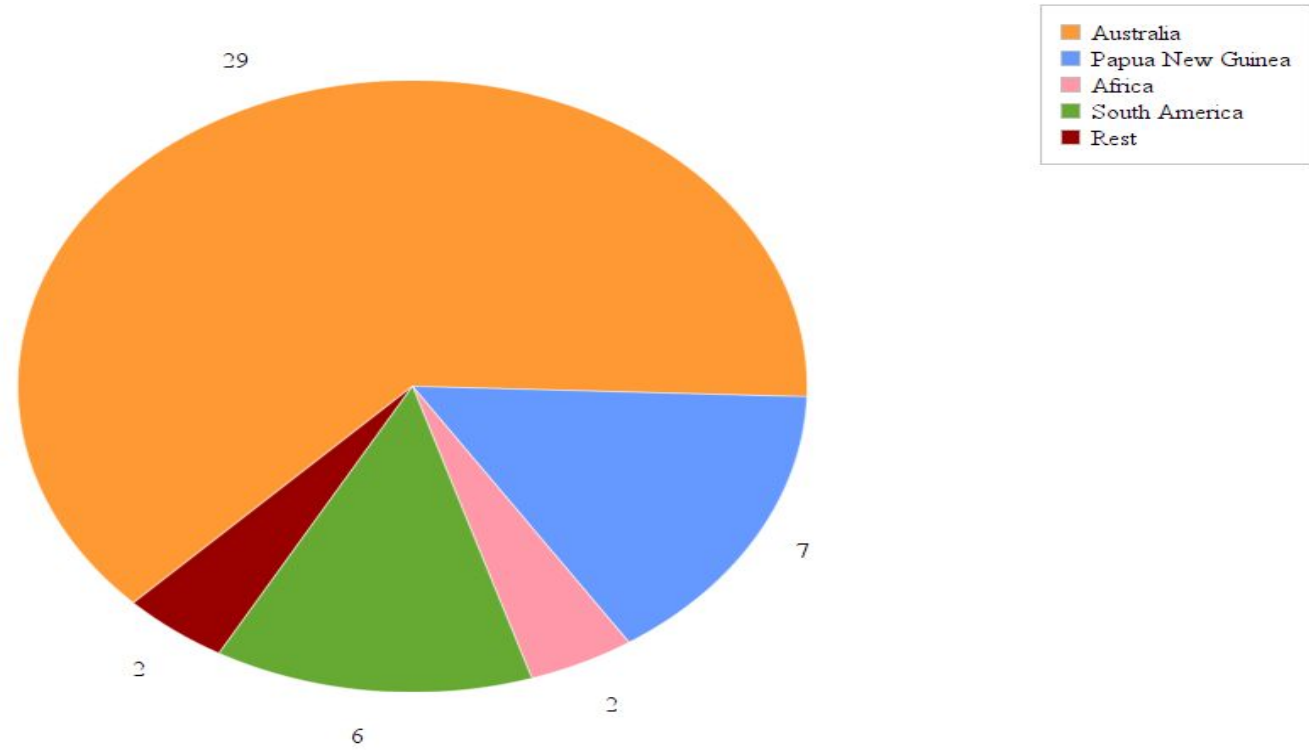
	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t̪ d̪	t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ	n̪	n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ		ɽ	ʀ					ʀ		
Tap or Flap		ɸ	ɽ	ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant			ɭ	l		ɭ	ʎ	ʟ			



source: <http://phoible.org/inventories/view/352#tipa>

Conclusion

Distribution of languages without fricatives



Source: WALS



Hypothesis: If a language does *not* have fricatives, then it is more likely to be spoken in mainland Australia than outside of it.



Part 1 Evangelos: p. 1-10

Part 2 Zac: p. 11 - 27

Part 3 Alicja: 28- 44

Part 4 Amelie: 45 - 57