

Modelling the Arawakan multi-locus classifier systems

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- South America and the Arawak languages
- Classifiers
- The Western Amazon

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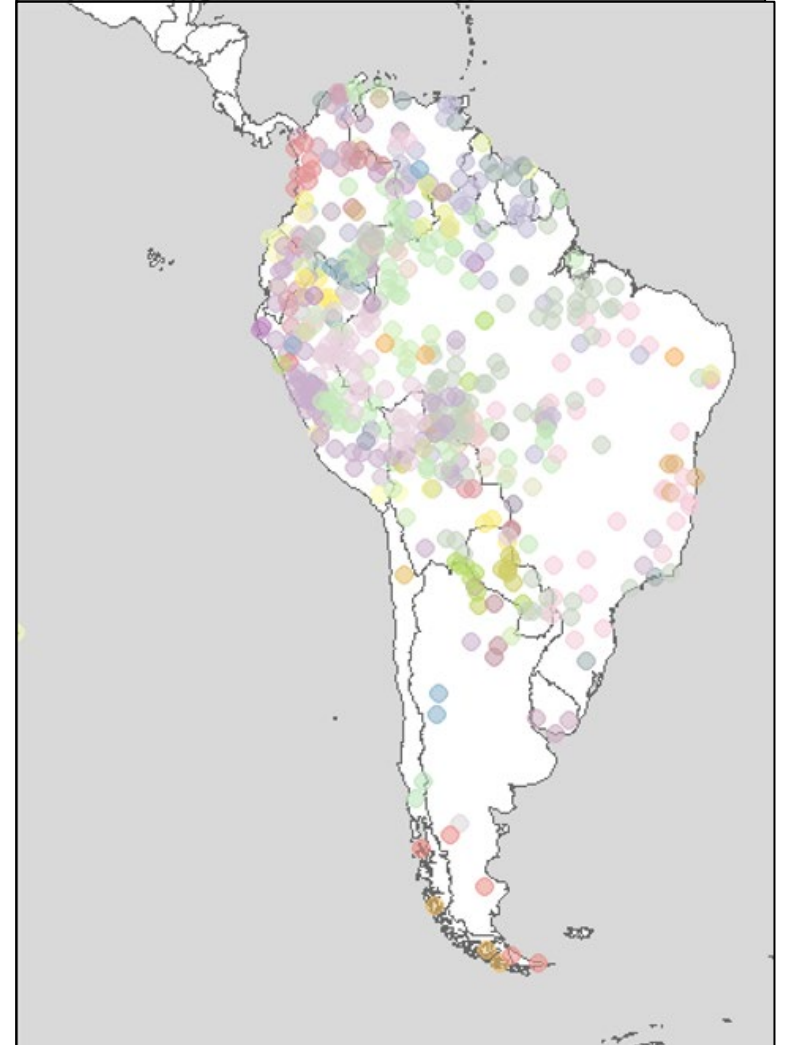
4. Conclusions

South America and the Arawak languages

- High diversity:
 - 27% of world's reconstructible language families
 - 34% of world's isolates

Van Gijn et al. (2022)

- High level of uniformity

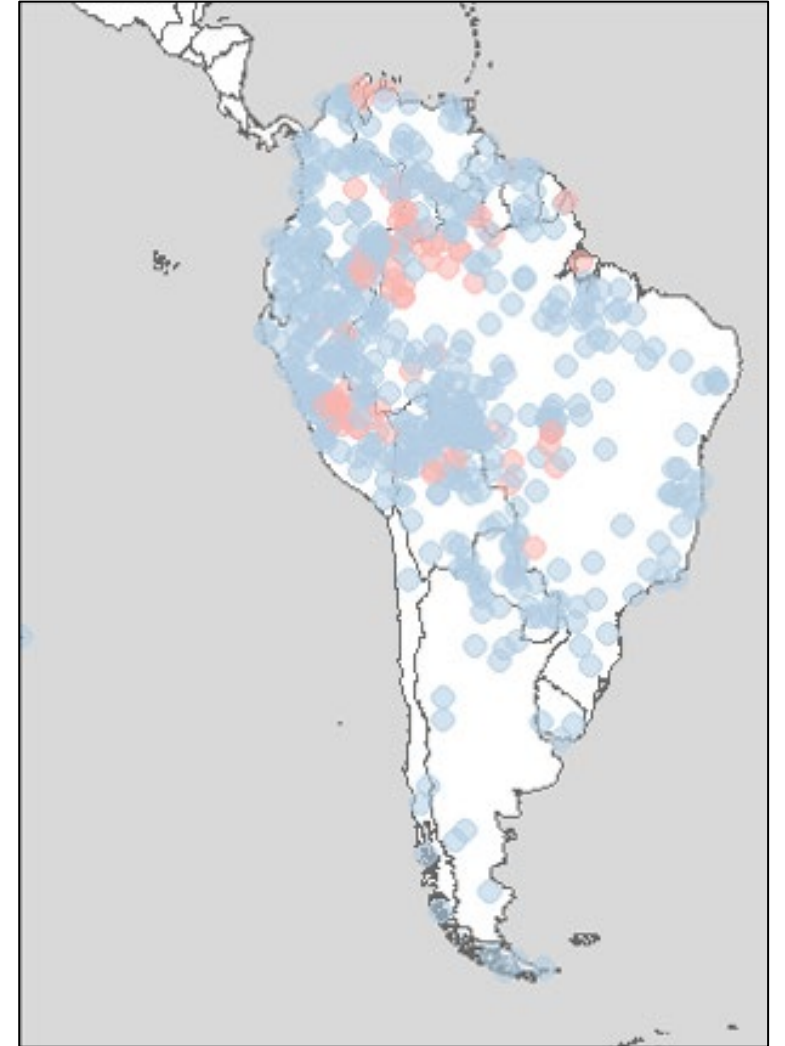


Map generated with Glottospace (Norder et al. 2022).

South America and the Arawak languages

- High diversity:
 - 27% of world's reconstructible language families
 - 34% of world's isolates
- High level of uniformity
- Arawak languages:
 - 40 (extant) languages across South and Central America (Aikhenvald 1999)

Van Gijn et al. (2022)



Map generated with Glottospace (Norder et al. 2022).

Classifiers

Nominal classification system: linguistic construction which can be considered to categorise a noun or the referent of a noun

1. Noun classifier

*xil **na**j xuwan **no**7 lab'a*
saw CLF:man John CLF:animal snake
'(man) John saw the (animal) snake'

Jakaltek (Mayan, from Craig 1986, as cited in Grinevald 2002, p. 65)

2. Numeral classifier

ʔən ʔui ʔɔɔi phɛʔ lɛʔ
I have pot three CLF:round.things
'I have three pots'

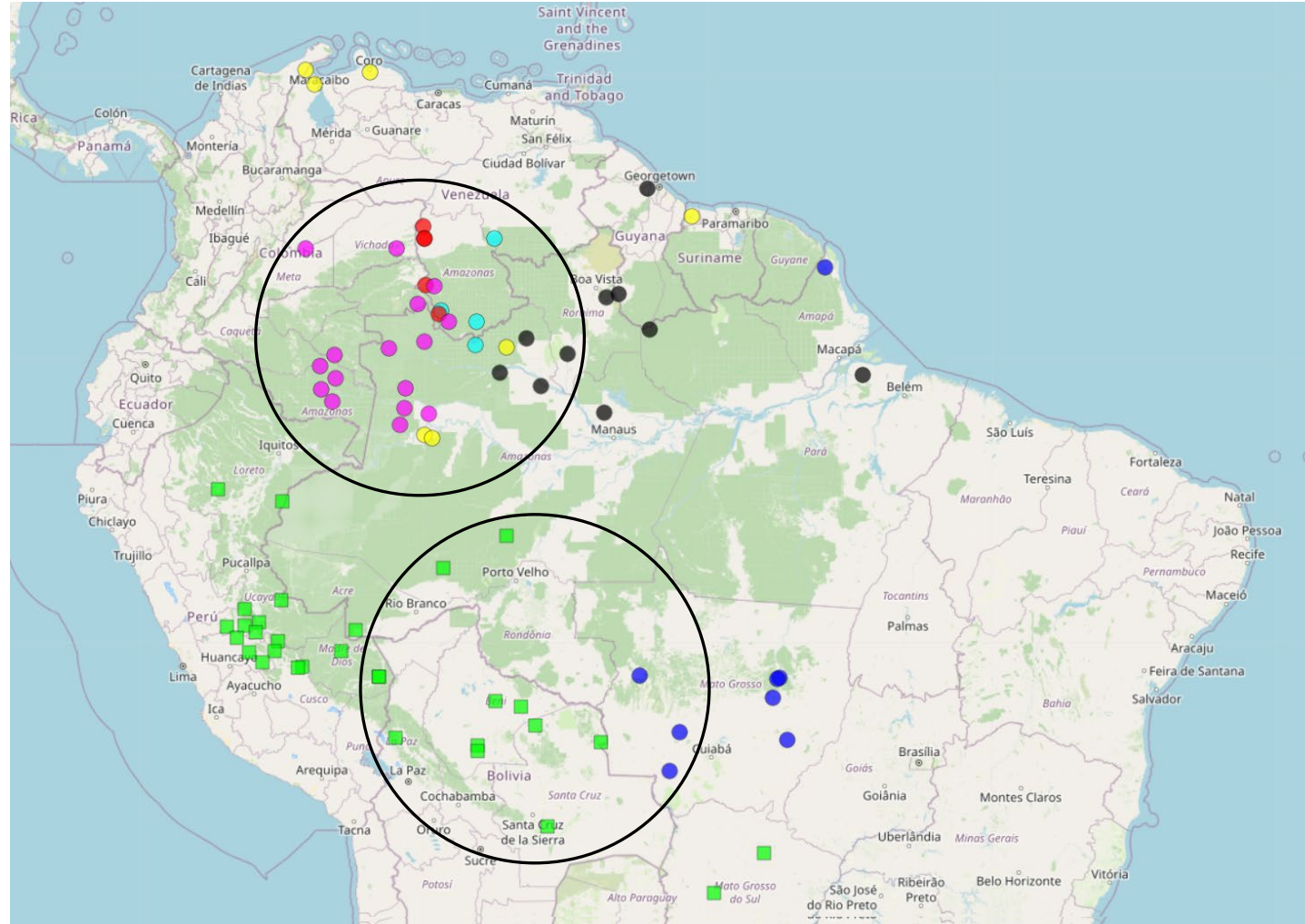
Southeast Asia Mal (Mon-Khmer, from Wajanarat 1979, cited by Aikhenvald 2000, p. 102)

3. Verb classifier

*sa ka-m **pōt-ai-h-u***
coconut 1SG-GOAL CLF:fruit-give-recipient-imperative
'Give me the coconut'

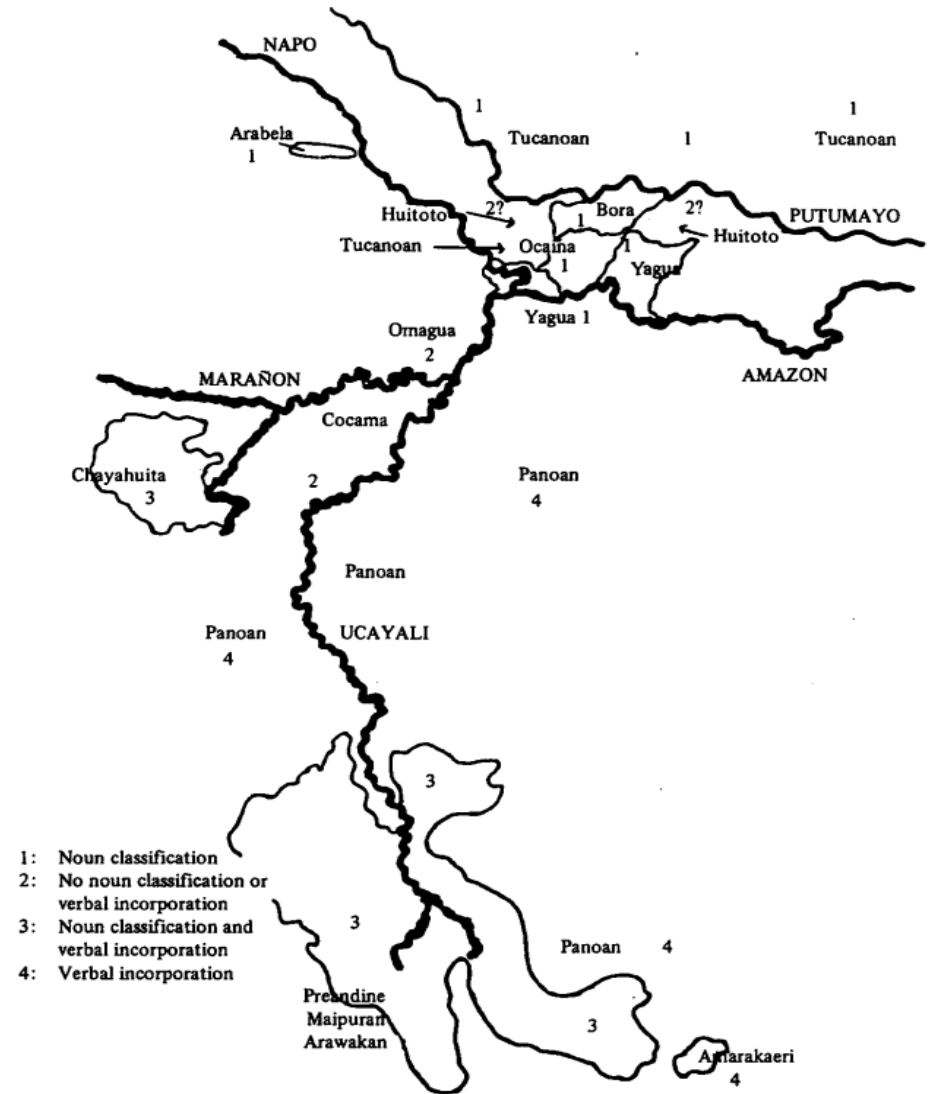
Imonda (Papuan, Waris family, from Seiler 1985, cited by Aikhenvald 2000 p. 152)

The Western Amazon



The Western Amazon

- Classifiers are identified as an areal feature of the Western Amazon (Derbyshire and Payne 1990; Grinevald and Seifart 2004; Krasnoukhova 2012; Payne 1987; Seifart and Payne 2007; Van der Voort 2018), but the picture is very mixed:
 - Payne 1987:** Languages north from the Amazon River have noun classification systems, languages to the south have verb incorporation systems (or a mix of the two)



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 - Payne 1987: Languages north from the Amazon River have noun classification systems, languages to the south have verb incorporation systems (or a mix of the two)
 - **Derbyshire and Payne 1990**: identify numeral, concordial (gender and non-gender), and verb-incorporating types across Amazonia

Numeral: lexico-syntactic forms, (sometimes) obligatory in quantity expressions, not limited to quantity expressions, large class of forms, separate words

Concordial: closed grammatical and paradigmatical system, affixes or clitics, express class-agreement with the head noun, may appear in the noun or verb phrase.

<i>o-ka-nofi-hi</i>	<i>oni</i>	<i>vanami</i>	<i>ka-karaho</i>
1SG-CL-want-THEME.FEM	DEM.FEM	paddle.FEM	CL-big
'I want the big paddle'			

Paumari (Arawan, Derbyshire and Payne 1990, p. 251)

Verb-incorporating: lexical item incorporated into the verb phrase, referring to the (referent of the) noun phrase

<i>neve-nó'e-co-ti</i>	<i>nica</i>
select-CLF.liquid-PL-DUR	food
'They are picking food (from the water)'	

Terena (Arawakan, Derbyshire and Payne 1990, p. 252)

The Western Amazon

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 - **Krasnoukhova 2012**, p. 218: “the Northwest Amazon, [...] and the Southwest Amazon, [are] two separate ‘epicenters’ of multifunctional classifier systems. Interestingly, languages spoken in between these areas [...] lack classification systems.”

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 - Krasnoukhova 2012, p. 218: “the Northwest Amazon, [...] and the Southwest Amazon, [are] two separate ‘epicenters’ of multifunctional classifier systems. Interestingly, languages spoken in between these areas [...] lack classification systems.”
 - **Van der Voort (2019)**: The North and South Western Amazon have shared classifier characteristics; there are also patterns unique to each region.

‘Empty morpheme’ construction

A distinct set of ‘bound nouns’

Classifiers as nominalizers

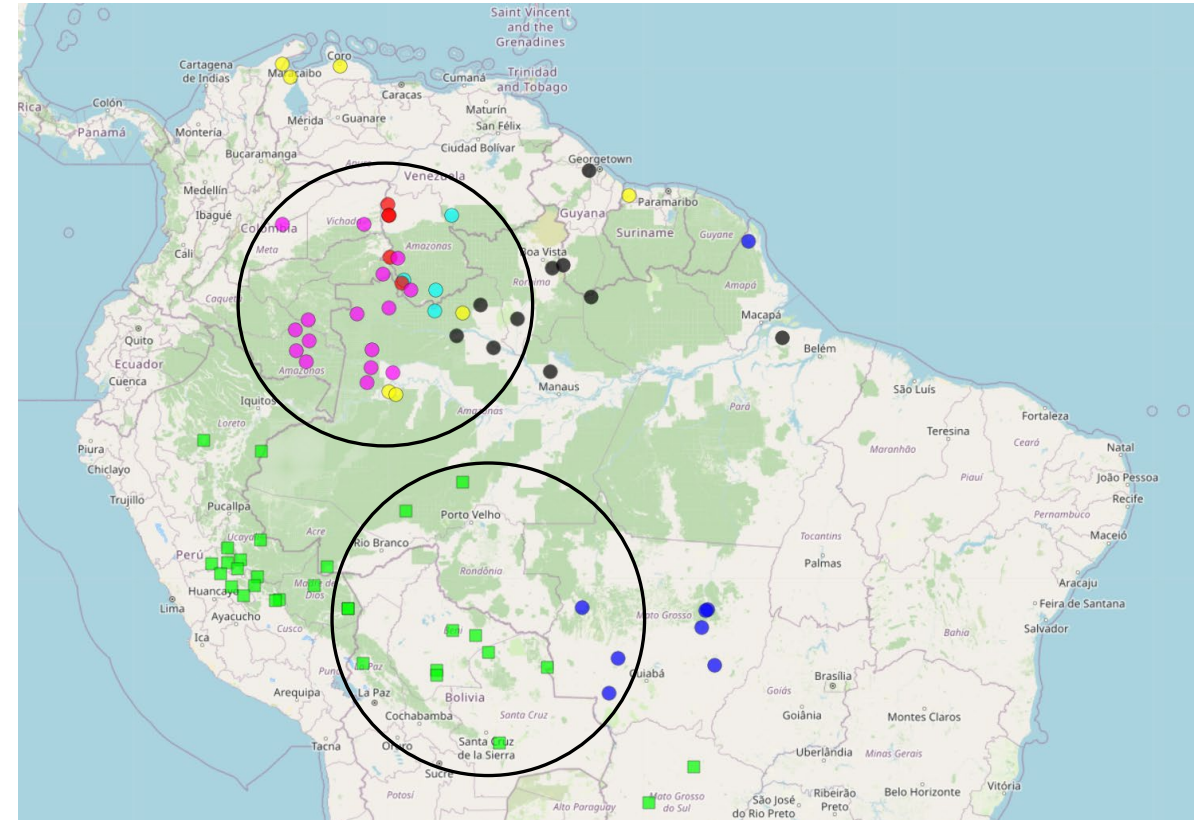
The Western Amazon: Arawakan

The Arawakan languages are spread across the Western Amazon:

- Aikhenvald 1994/2019, p. 124: “Classifiers appear to have evolved as a result of **independent development in low-level subgroups** or even individual languages”
- Dunn 2022: “systems in which classifiers can be used in a number of positions are **characteristic of the Arawakan family as a whole**”

Exploring the areality of the Arawakan languages:

- Are the Arawakan languages in the north the same as those in the south?
- Can distance matrix modelling help understand the patterns?



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The Arawak multi-locus classifier system

4. Nanti (Arawak)

Numeral

- a) *pite<ki>ti*
two<CLF:seed>two
'two (e.g. beads)

Verb

- b) *i=p-a-gi-t-i=na*
3M.S=give-EP-CLF:seed-EP-REAL=1O
'He gave me (e.g. a bead).'

Adjective

- c) *kiraha<ki>ri*
red<CLF:seed>red
'red (e.g. beads)'

Noun

- d) *chobaNkiri-ki*
job's.tears.plant-CLF:seed
'Job's Tears (*Coix lacryma-jobi*) seed'

(Michael 2008, p. 332)

The Arawak multi-locus classifier system

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5. Tariana (Arawak)

<i>ha-dapana</i>	<i>pa-dapana</i>	<i>na-tape-dapana</i>
DEM:INAN-CLF:house	one-CLF:house	3PL-medicine-CLF:house
<i>heku</i>	<i>na-ni-ni-dapana-mahka</i>	
wood	3PL-make-TOP.ADV-CLF:house-RECENT.PAST.NON.VISUAL	

'This one big hospital of theirs has been made of wood.'

<i>na-ya-dapana</i>	<i>hanu-dapana</i>
3PL-POSS-CLF:house	big-CLF:house

(Aikhenvald 2000, p. 204)

Locí

	Numeral	Verb	Noun	Modifier
Achagua				
Alto Perené				
Apurinã				
Baniwa do Içana				
Baure				
Cabiyarí				
Caquinte				
Enawené-Nawé				
Ignaciano				
Machiguenga				
Machinere				
Mehináku				
Nanti				
Nomatisguenga				
Palikúr				

	Numeral	Verb	Noun	Modifier
Paunaka				
Piapoco				
Paresi				
Resígaro				
Tariana				
Terena				
Trinitario				
Wapishana				
Warekena				
Waurá				
Xiriâna				
Yawalapití				
Yanesha'				
Yukuna				
	19	19	23	18

Dunn and Rose in press

Loci

9. Numeral

ba *pis* *muwakaax* *paha-t*
INTER 2SG want eat one-CLF:vertical

‘Do you want to eat one (banana fruit)?’

Palikur (Aikhenvald and Green 1998, p. 445)

Loci

9. Numeral

ba *pis* *muwakaax* *paha-t*
INTER 2SG want eat one-CLF:vertical

‘Do you want to eat one (banana fruit)?’

Palikur (Aikhenvald and Green 1998, p. 445)

10. Verb

Vi=eh-po-a-wo *to* *etip*
1PL=wash-CLF:tiny-LK-COP ART manioc.starch

‘We wash the manioc starch’

Baure (Danielsen 2007, p. 139)

Loci

9. Numeral

ba pis muwakaax paha-t
INTER 2SG want eat one-CLF:vertical
‘Do you want to eat one (banana fruit)?’
Palikur (Aikhenvald and Green 1998, p. 445)

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Vi=eh-po-a-wo to etip
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‘We wash the manioc starch’
Baure (Danielsen 2007, p. 139)

11. Noun (and modifier)

a) *mãko-tsota*
mango-CLF:trunk.of
‘mango tree trunk’
Apurinã (Facundes 2000, p. 163)

b) *p-amen-l antaro-meni kotsiro*
2S-look-IRR big-CLF:flat.triangular machete
‘Look for a machete with a big blade’
Alto Perené (Mihás 2015, p. 423)

Semantics

Physical properties (size, shape, texture, dimension)

6. Baure (Danielsen 2007, p. 88)

*kaharo-**pi***

cotton-CLF:long.thin

‘cotton thread’

Semantics

Physical properties (size, shape, texture, dimension)

6. Baure (Danielsen 2007, p. 88)

kaharo-pi

cotton-CLF:long.thin

‘cotton thread’

Plants

7. Apurinã (Facundes 2000, p. 209)

ãã-muna

plant-CLF:log.of

‘tree’

Semantics

Physical properties (size, shape, texture, dimension)

6. Baure (Danielsen 2007, p. 88)

kaharo-pi

cotton-CLF:long.thin

‘cotton thread’

Plants

7. Apurinã (Facundes 2000, p. 209)

ãã-muna

plant-CLF:log.of

‘tree’

Body parts

8. Tariana (Aikhenvald 2003, p. 91)

sidu-kawa

arrow-CLF:leg

‘the long part of an arrow’

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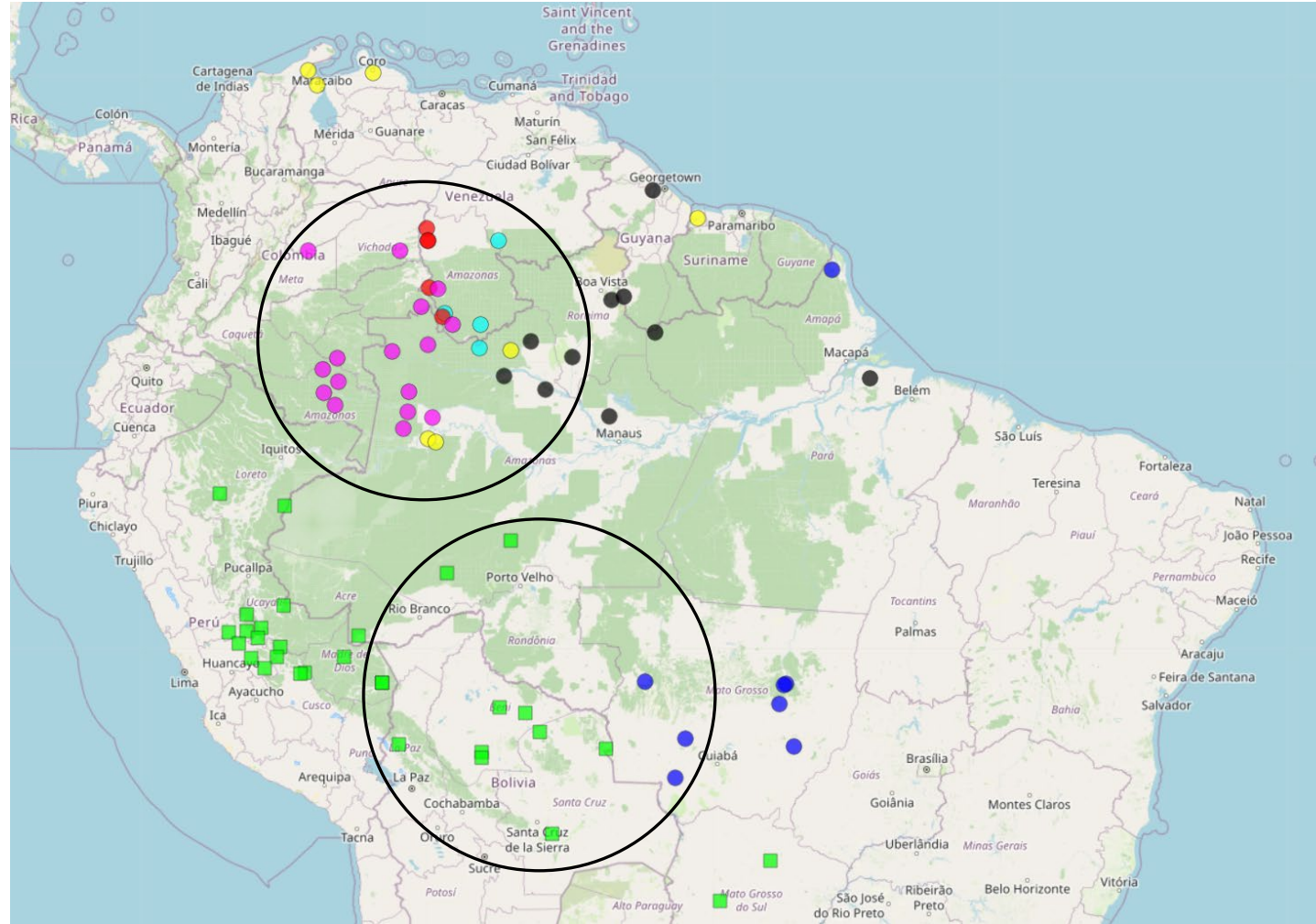
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Research design

- Computing similarities and dissimilarities between languages based on the *constructions*, composed of:
 - Form (position in construction): 11 variables
 - Meaning: 76 variables
 - Locus and function: 26 variables
- 13 languages: 7 NWA, 6 SWA
- Glottospace R package (Norder et al. 2022)

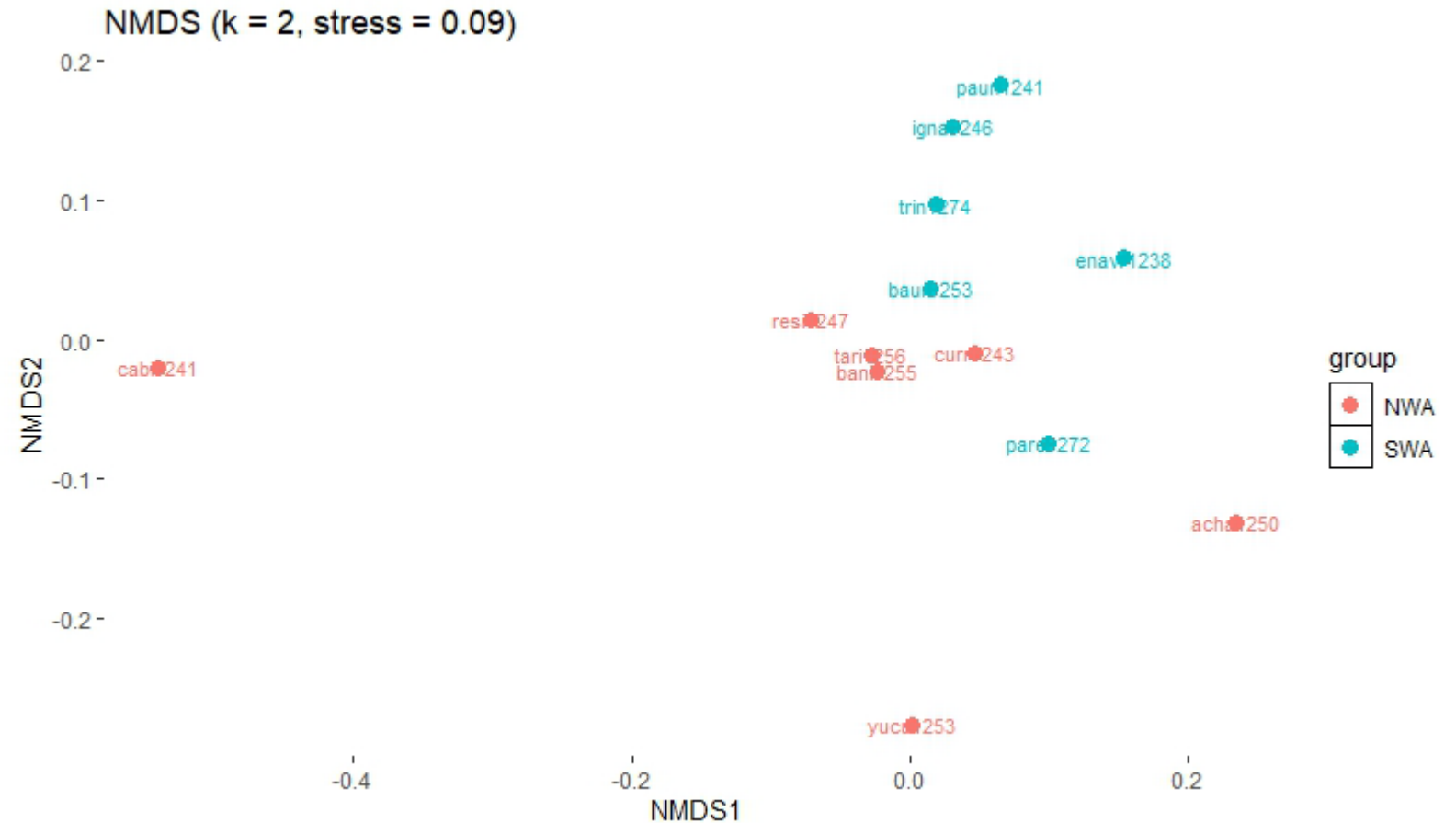
ro=moro-čipi-wo te e-čpi'
3SG.M=be.dry-roof-COP DEM1M UNSP-roof
'The roof is dry'
(Baure grammar, Danielsen 2007, p. 210)

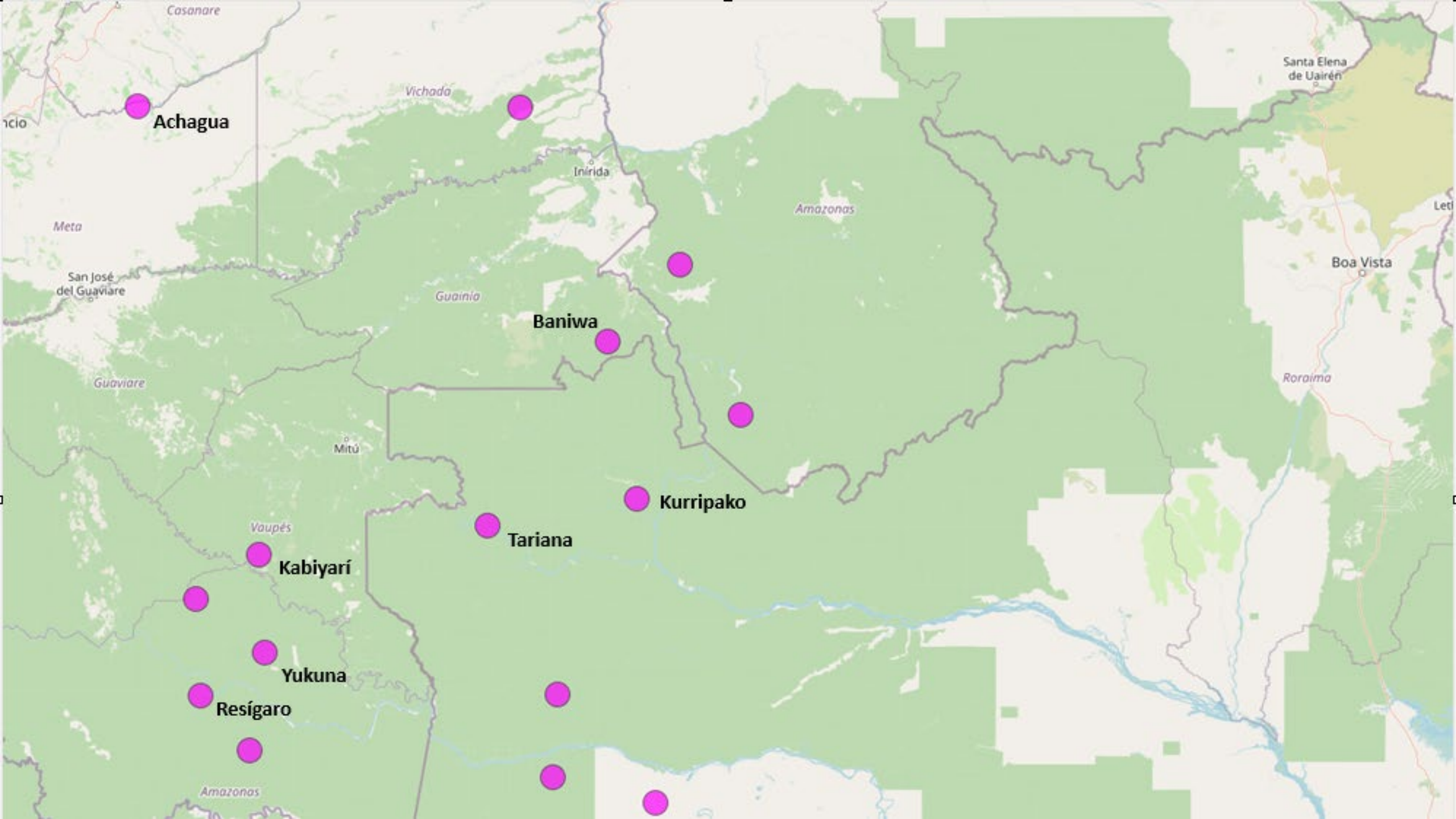


1. Constructions	
var_Vhost	Y
var_Dummyhost	Y
var_agreement	Y
var_gramFunctionOther	Y
2. FormMeaning	
var_leftProsOrient	Y
var_concatTechnique	Y
var_posPost	Y
var_bodyPart	Y
var_otherPhysicalProperty	Y

Results: NWA and SWA

- A significant difference between northwest and southwest Amazon ($p = 0.037$)
- Resígaro, Tariana, Baniwa, and Kurripako are similar to the SWA languages
- Kabiwarí, Achagua, and Yukuna are less similar to the SWA languages





Achagua

Baniwa

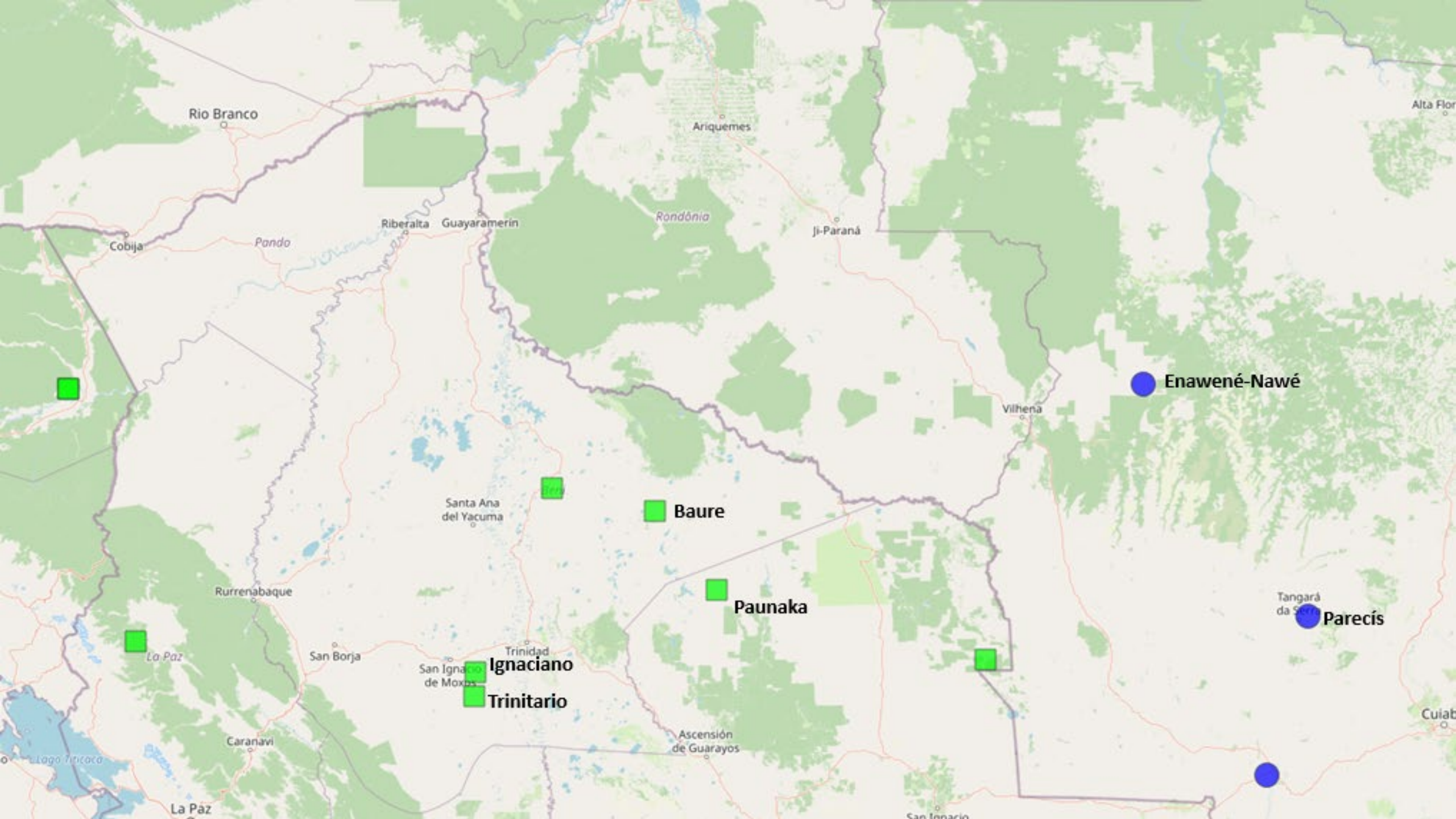
Kurripako

Tariana

Kabiwarí

Yukuna

Resígaro



Rio Branco

Ariqueles

Alta Flor

Rondônia

Ji-Paraná

Cobija

Pando

Riberalta

Guayaramerin

Vilhena

Enawené-Nawé

Santa Ana
del Yacuma

Baure

Rurrenabaque

La Paz

San Borja

San Ignacio
de Moxos

Ignaciano

Trinitario

Trinidad

Paunaka

Ascensión
de Guarayos

Tangará
da Serra
Parecís

Cuiabá

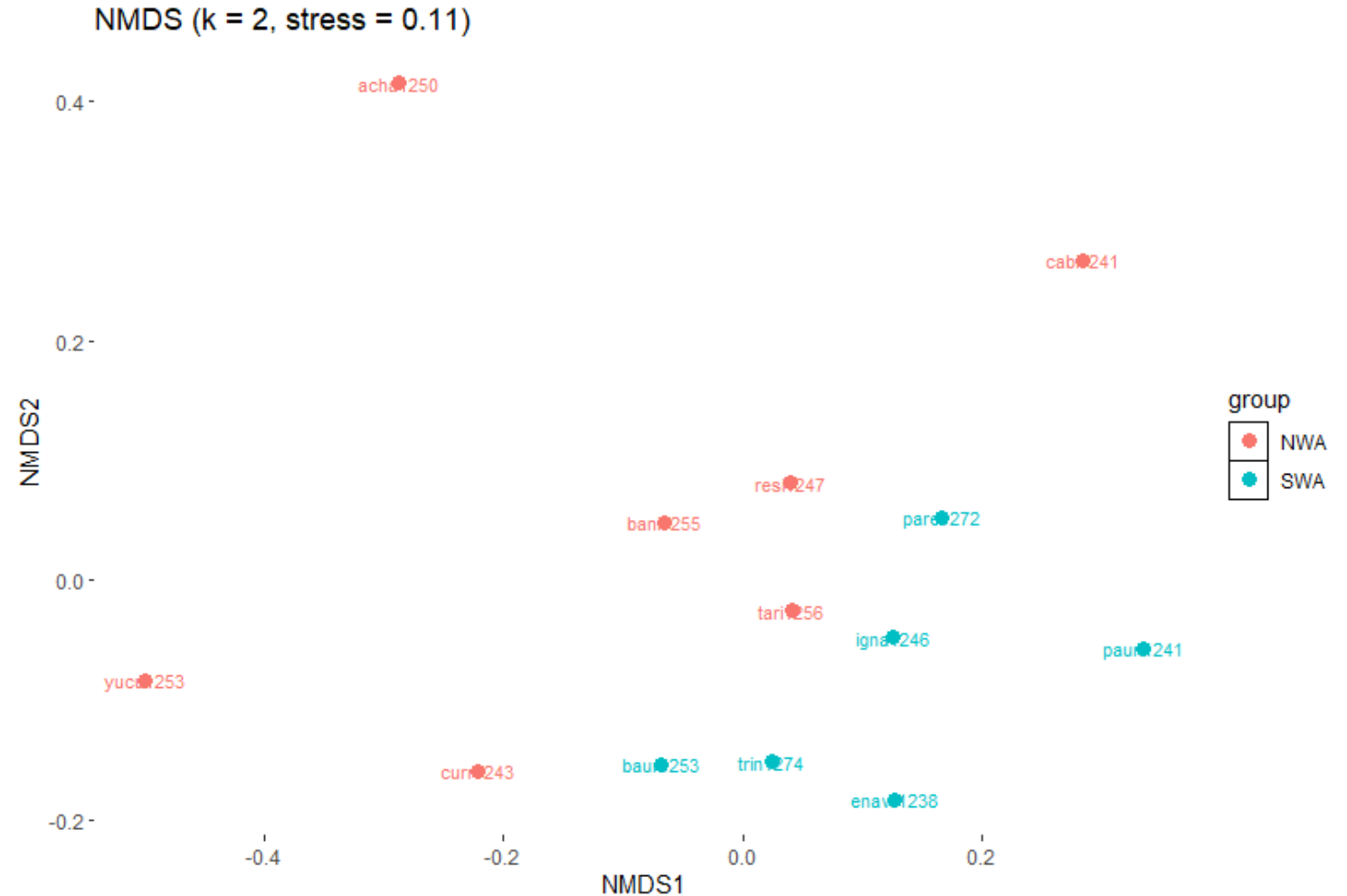
Lago Iticozo

La Paz

San Ignacio

Results: NWA and SWA (locus and function)

- **No significant difference** between northwest and southwest Amazon ($p = 0.25$)
- Baniwa, Kurripako, Tariana, and Resígaro are more similar to the SWA languages
- Achagua, Yukuna, and Kabiwarí are further from the SWA languages



Results: NWA and SWA (form and meaning)

- A significant difference between northwest and southwest Amazon ($p = 0.021$)



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Discussion

- There is a significant difference between the Arawakan classifier systems in the NWA and in the SWA
 - Most of the difference seems to come from form and meaning, not locus and function
 - The difference in loci does not fall along NWA-SWA lines
- How does this match with what we already know?
 - Expected a higher difference in locus and function
- These models create a baseline: we also need data on non-Arawakan languages
- Further testing!

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The Western Amazon: structures

	Numeral	Noun	Modifier	Verb
Japura-Colombia				
Resígaro				
Yucuna				
Tariana				
Baniwa do Içana				
Cabiyari´				
Achagua				

- Japura-Colombia: only numeral, noun, and modifier are older

	Numeral	Noun	Modifier	Verb
Central-Eastern Maipuran				
Enawené- Nawé				
Parecís				
Southern Maipuran: Bolivian				
Baure				
Ignaciano				
Trinitario				
Paunaka				

- Two main subgroups (Southern Maipuran in Bolivia; Central-Eastern Maipuran in Brazil)
- All loci reconstruct in both subgroups