



# DOES THE COMPARATIVE METHOD WORK IN NEW CALEDONIA?

Mikhail Zhivlov

*Russian State University for the Humanities / HSE University*

15<sup>th</sup> International Conference on Austronesian Linguistics

June 28 – July 2, 2021

# Xârâcùù (Canala) and Grand Couli (Tiri-Mea) – two languages of Southern New Caledonia

## Xârâcùù

### Consonants:

voiceless fricatives	f	ʃ	ç	x	xʷ	
voiceless stops	pʷ	p	t	c	k	kʷ
prenasalized stops	bʷ	b	d	j	g	gʷ
nasals	mʷ	m	n	ɲ	ŋ	
other:	w, v, y, r.					

### Vowels:

i	ɨ	u	ĩ	ɣ	ũ
e	ə	o		ẽ	
ɛ	ʌ	ɔ	ẽ	ã	õ
a			ã		

## Grand Couli

voiceless continuants	fʷ	f	ʃ	h	hʷ
voiced continuants	w	v	ð	r	ɣ
voiceless stops	pʷ	p	t	t	k
prenasalized stops	bʷ	b	d	d	g
nasals	mʷ	m	ɲ	n	ŋ
other:	y, ʎ				

### The vowels are as follows:

i	ɨ	u	ĩ	ɣ	ũ
e	ə	o		ẽ	
ɛ	ʌ	ɔ	ẽ	ã	õ
a			ã		

# George W. Grace

- Grace, George W. *Canala Dictionary (New Caledonia)*. Pacific Linguistics Series C 2. Canberra: Department of Linguistics, Research School of Pacific Studies, The Australian National University, 1975.
- ———. *Grand Couli Dictionary (New Caledonia)*. Pacific Linguistics Series C 12. Canberra: Department of Linguistics, Research School of Pacific Studies, The Australian National University, 1976.
- ———. “Hypotheses about the Phonological History of the Language of Canala, New Caledonia.” *Te Reo* 29 (1986): 55–67.
- ———. “Indirect Inheritance and the Aberrant Melanesian Languages.” In *Studies in Pacific Languages & Cultures in Honour of Bruce Biggs*, edited by Jim Hollyman and Andrew Pawley, 255–68. Auckland: Linguistic Society of New Zealand, 1981.
- ———. “Regularity of Change in What?” In *The Comparative Method Reviewed: Regularity and Irregularity in Language Change*, edited by Mark Durie and Malcolm Ross, 157–79. New York, Oxford: Oxford University Press, 1996.

# George Grace (1996)

- I expected that the number of valid correspondences for any phoneme in either language would almost always be quite small—probably one or two in most cases.
- These expectations bore little resemblance to the actual results. Each language, as we have seen, has 26 consonants (not counting probably borrowed ones in Grand Couli); each also has 18 vowels (10 are oral and 8 nasalized in each language; however, it should also be noted that two of the 18 in Grand Couli are rare and probably to be regarded as suspect). However I found 140 consonant correspondences (counting 24 in which a consonant in one language corresponded with zero in the other) and 172 vowel correspondences (counting 26 in which a vowel in one language corresponded with zero in the other). These figures, of course, include many correspondences which occurred only once and others which occurred only two or three times.
- It was remarkably difficult to find even the approximate place to draw the line between clearly valid and clearly invalid correspondences. What was particularly discouraging was that *no obvious conditioning—no indications of complementation among any of these correspondences—was apparent.*

# George Grace (1996)

- I even considered the possibility of trying to make a start toward reconstructing the last common protolanguage of these two languages by accepting the most frequently occurring correspondences as hypothetically valid and assigning a symbol to represent each (or if complementary distribution could be found between any, to represent each complementary set). This would have required a large number of symbols, but might have led to an overdifferentiated sort of reconstructed vocabulary, I thought. As long as I considered only the consonants, the idea seemed to have some attractiveness. However, when I turned to the vowels, it seemed clearly hopeless. I could not imagine that it could ever lead to my being able to carry out my original program. That is, I could not imagine ever being able to reconstruct such recent protolanguages in enough detail that they could be used as the basis for reconstructing the next earlier stage in a process that would lead eventually back to Proto Oceanic. What makes these results particularly discouraging is that these languages appear on other criteria to be very closely related.

- Grace concludes that the comparative method does not work in this case.
- He has a rather complicated sociolinguistic explanation for that, but whatever sociolinguistic conditions existed in New Caledonia, they were hardly unique.
- So, the question is: why does the comparative method work everywhere else?
- One possible answer is that Grace was wrong, and the comparative method does work in New Caledonia.

# Two strata of lexical parallels between Xârâcùù and Grand Couli

## inherited words

- non-trivial correspondences with complementary distributions
- basic vocabulary ('belly', 'black', 'to burn', 'earth', 'louse', 'rain', 'thou', 'what?')
- more stable items of cultural lexicon ('boat', 'flying fox', 'sugarcane', 'yam')

## loans from Xârâcùù into Grand Couli

- one-to-one correspondences, mostly between identical phonemes
- less stable items of cultural lexicon ('black paint', 'boiled taro stalk given to babies to suck', 'border of mat where weaving ends')

# Sound correspondences: consonants

Proto-Xârâcùù—Grand Couli	Xârâcùù	Grand Couli (borrowed)	Grand Couli (inherited)
*p <sup>w</sup>	p <sup>w</sup>	p <sup>w</sup>	w
*p	p	p	v / _V <sub>o</sub> , m / _V <sub>n</sub> , Ø / _V <sub>r</sub>
*t	t	t	t
*c	c	t̪	y / _V <sub>back</sub> , Ø / _V <sub>front</sub>
*k	k	k	Ø
*k <sup>w</sup>	k <sup>w</sup>	k <sup>w</sup>	w
*b <sup>w</sup>	b <sup>w</sup> / _V <sub>o</sub> , m <sup>w</sup> / _V <sub>n</sub>	b <sup>w</sup> / _V <sub>o</sub> , m <sup>w</sup> / _V <sub>n</sub>	p <sup>w</sup> / _V <sub>o</sub> , b <sup>w</sup> / _V <sub>n</sub>
*b	b / _V <sub>o</sub> , m / _V <sub>n</sub>	b / _V <sub>o</sub> , m / _V <sub>n</sub>	p / _V <sub>o</sub> , b / _V <sub>n</sub>
*d	d / _V <sub>o</sub> , n / _V <sub>n</sub>	d / _V <sub>o</sub> , n / _V <sub>n</sub>	t / _V <sub>o</sub> , d / _V <sub>n</sub>
*j	j / _V <sub>o</sub> , ñ / _V <sub>n</sub>	d̪ ~ t̪ / _V <sub>o</sub> , ñ̪ / _V <sub>n</sub>	ñ̪
*g	g / _V <sub>o</sub> , ŋ / _V <sub>n</sub>	g	k / _V <sub>o</sub> , g / _V <sub>n</sub>



# Sound correspondences: consonants

Proto-Xârâcùù—Grand Couli	Xârâcùù	Grand Couli (borrowed)	Grand Couli (inherited)
*fw	x <sup>w</sup>	h <sup>w</sup>	fw
*f	f	f	f
*š	š	š	š
*ç	ç	ṭ	ṭ
*x	x	h	h
*m <sup>w</sup>	m <sup>w</sup>	m <sup>w</sup>	m <sup>w</sup>
*m	m	m	m
*n	n	n	n

# Sound correspondences: consonants

Proto-Xârâcùù—Grand Couli	Xârâcùù	Grand Couli (borrowed)	Grand Couli (inherited)
*-k-	-k-	-ɣ-	-ɣ-
*-t-	-t-	-ř-/ -r-	-ř-/ -r-
*-r-	-r-	-ř-	-ř-
*-y-	-y-	-y-	-y-

# Sound correspondences: vowels

Proto-Xârâcùù—Grand Couli	Xârâcùù	Grand Couli (inherited)
*i	i	i
*i̯	i̯ (i after labiovelars)	ə, ɔ
*u	u	u
*e	e	i
*e̯	e̯ (e after labiovelars)	ə
*o	o	u
*ɛ	ɛ	e
*ʌ	ʌ (ɛ after labiovelars?)	o
*ɔ	ɔ	o

# Sound correspondences: vowels

Proto-Xârâcùù—Grand Couli	Xârâcùù	Grand Couli (inherited)
*ĩ	ĩ	ĩ
*ɸ	ã (ĩ after palatals, ɸ in disyllabic roots)	õ
*ũ	ũ	ũ (õ after *k)
*ẽ	ẽ	ĩ
*õ	õ	ũ
*ẽ	ẽ	ẽ
*õ	õ	õ
*ã	ã	ã (ɔ after *pʷ, *bʷ, *fʷ)

# Sound correspondences: vowels

- Vowel correspondences in loans are mostly trivial, except
- X *i* > GC *ə*
- X *ĩ* > GC *ã*
  
- X *e* > GC *e* ~ *i*
- X *o* > GC *o* ~ *u*
- X *ɛ* > GC *ɛ* ~ *e*
- X *ɔ* > GC *ɔ* ~ *o*
- This shows that words were borrowed from Xârâcùù into Grand Couli both before and after the chain shift \**e* > *i*, \**o* > *u*, \**ɛ* > *e*, \**ɔ* > *o* in the latter language.

## inherited words

- $*p^wə > X p^we$  ‘high’, GC  $wə$  ‘1. high, tall. 2. high ground, on high ground’
- $*p^wə > X p^we$  ‘the belly, the center or interior’, GC  $wə$  ‘the belly, the interior, the center’
- $*p^wĩ > X p^wĩ$  ‘banana’, GC  $wĩ$  ‘banana’
- $*p^wii > X p^wii$  ‘to open (as a pot, door, book)’, GC  $wii$  ‘to open (as a pot, book, door)’

## loans

- $X p^wəŋara$  ‘European’  $>$  GC  $p^wəŋara$  ‘European’
- $X p^wãrə$  ‘to cultivate (taro field)’  $>$  GC  $p^wãrə$  ‘to cultivate (taro field)’
- $X p^wẽ$  ‘turtle’  $>$  GC  $p^wẽ$  ‘turtle’

## inherited words

- *\*pε* > X *pε* 'to take, to carry, convey, carry out, perform', GC *ve* 'to take, carry, convey'
- *\*pe* > X *pe* 'sting ray', GC *vi* 'sting-ray'
- *\*pi* > X *pi* 'fish roe', GC *vi* 'fish roe'
  
- *\*pĩĩ* > X *pĩĩ* 'seed, in general, grain of sand, etc.', GC *mĩĩ* 'seed, in general, grain (of sand), etc.'
  
- *\*poa* > X *poa* 'to bear (of fruit tree)', GC *ua* 'to bear (of fruit tree)'
- *\*põ* > X *põ* 'hole, hollow, depression', GC *õ* 'low lying ground, hollow, depression'

## loans

- X *penãã* 'mast' > GC *penãã* 'mast'
- X *pẽrẽ* 'a fence' > GC *pẽrẽ* 'a fence'
- X *põ* '1. joint of bamboo used as cooking vessel. 2. The species of bamboo so used.' > GC *põ* 'a kind of bamboo with long joints'

## inherited words

- *\*ca* > X *ca* ‘clear field with hatchet or machete’, GC *ya* ‘clear field with hatchet or machete’
- *\*ci* > X *ci* ‘to dig up, extract (as tubers), harvest’, GC *yə* ‘to dig up, extract (tubers)’
- *\*cĩ* > X *cĩ* ‘to jump, fly’, GC *ĩ* ‘to fly, jump, dance’

## loans

- X *caa* ‘to glare, be glaring (of light)’ > GC *taa* ‘to glare, a glaring light that hurts the eyes’
- X *cεε* ‘border of mat where weaving ends’ > GC *tee* ‘border of mat where weaving ends’
- X *cĩ* ‘a group of things’ > GC *tĩ* ‘a group of things’



## inherited words

- *\*kaa* > X *kaa* ‘to wade, to ford’, GC *aa* ‘to wade, to ford’
- *\*kẽ* > X *kẽ* ‘to burn, be consumed by fire’, GC *ẽ* ‘to burn, to be consumed by fire’
- *\*ku* > X *ku* ‘yam’, GC *u* ‘yam’
- *\*kũ* > X *kũ* ‘upper end of a valley’, GC *õ* ‘upper end of a valley’
- *\*kiti* > X *kiti* ‘louse’, GC *əřə* ‘louse’

## loans

- X *kãã* ‘thin, gaunt’ > GC *kãã* ‘thin, having become thin (of a person)’
- X *kabae* ‘lizard totem of Koh village’ > GC *kabae* ‘lizard totem’
- X *kii* ‘kind of tree, chêne-gomme’, GC *kii* ‘kind of tree, chêne gomme’
- X *kũ* ‘tree that grows in red soil, hardwood’ > GC *kũ* ‘a hardwood that grows in the red earth’

## inherited words

- $*k^{w\tilde{a}} > X k^{w\tilde{a}}$  ‘boat’, GC  $w\tilde{a}$  ‘boat’
- $*k^{wee} > X k^{wee}$  ‘image (sculpture, reflection in water, etc.), spirit, soul’, GC  $wii$  ‘image (sculpture, reflection), spirit, soul’
- $*k^{wi\varepsilon} > X k^{wi\varepsilon}$  ‘rain’, GC  $wie$  ‘rain’

## loans

- $X k^{warii}$  ‘grasshopper’  $>$  GC  $k\check{o}rii$  ‘grasshopper’
- $X k^{wiitaa}$  ‘kind of sea fish (caranx), carangue’, GC  $k^{wiiraa}$  [M] ‘a sea fish, carangue’

## inherited words

- $*b^w\epsilon t\epsilon > X b^w\epsilon t\epsilon$  'some, a number of', GC  $p^we\check{r}e$  'some, a number of'
- $*b^w\tilde{e}r\tilde{e} > X m^w\tilde{e}r\tilde{e}$  'close', GC  $b^w\tilde{e}\check{r}\check{i}$  in:  $t\check{o}b^w\tilde{e}\check{r}\check{i}$  'to close something'
- $*b^w\tilde{i}(r\tilde{e}) > X m^w\tilde{i}$  'the mark left by something, the scar', GC  $b^w\tilde{e}\check{r}\tilde{e}$  'a mark representing something'
- $*b^w\tilde{a} > X m^w\tilde{a}$  'to shine, as the sun', GC  $p\check{o}$  'to shine, as the sun'

## loans

- $X b^w\tilde{a}i\tilde{t}i$  'mushroom with a black powder used as black paint for dancers. Also black paint from burned candlenut.'  $>$  GC  $b^w\tilde{a}i\tilde{r}i$  'black paint'
- $X b^w\tilde{i}i$  'variety of taro'  $>$  GC  $b^w\tilde{i}i$  'variety of taro'

## inherited words

- *\*bε* > X *bε* 'rear end, bottom', GC *pe* 'rear end, bottom'
- *\*bɨ* > X *bɨ* 'flying fox', GC *pə* 'flying fox'
- *\*bu* > X *bu* 'to smell (perceive odor), an odor', GC *pu* 'odor'
  
- *\*bẽ* > X *mẽ* 'arm, fin (of tortoise), branch (of tree), stalk', GC *bẽ* 'arm, fin of tortoise, branch of tree'

## loans

- X *ba* 'boiled taro stalk given to babies to suck' > GC *ba* 'boiled taro stalk given to babies to suck'
- X *bata* 'to fear' > GC *bařa* 'to fear'
- X *bɔ* 'to boil' > GC *bo* 'to boil'

## inherited words

- *\*de* > X *de* ‘sugarcane’, GC *ti* ‘sugarcane’
- *\*dɔɔ* > X *dɔɔ* ‘earth’, GC *too* ‘earth’
- *\*dã(ã)wã* > X *nãwã* ‘sand’, GC *dããwã* ‘sand’
- *\*dõõ* > X *nõõ* ‘the top, at the top’, GC *dõõ* ‘the top, at the top’

## loans

- X *dɔɔ* ‘a kind of curved flute. The reed from which it is made.’ > GC *doo* ‘a kind of reed (used to make the flute, pešau)’
- X *dɔyaa* ‘whale’ > GC *dɔyaa* ‘whale’

## inherited words

- \**gε* > X *gε* 'thou', GC *ke* 'second person singular subject pronoun'
- \**gɔɔ* > X *gɔɔ* 'to vomit', GC *koo* 'to vomit'
  
- \**gĩ* > X *ηĩ* 'to crawl on the stomach', GC *gɔ̃* 'to crawl on the stomach'
- \**gĩrĩ* > X *ηĩrĩ* 'black', GC *pu-gɔ̃řɔ̃* 'black'

## loans

- X *gara* 'spider' > GC *gařa* 'spider'
- X *gεε* 'grandmother' > GC *gεε* 'grandmother'

## inherited words

- *\*jε* > X *jε* ‘what?’, GC *ṅe* ‘what?’
- *\*jɔ* > X *jɔ* ‘spear, thorn’, GC *ṅo* ‘spear, thorn’
  
- *\*jĩ* > X *ĩĩ* ‘liquid (as juice of fruit, etc.)’, GC *ṅĩ* ‘liquid (as juice of fruit, etc.)’

## loans

- X *je* ‘snare for birds or rats’ > GC *ḍe* ‘a trap, snare, etc.’
- X *jora* ‘giant clam’ > GC [T] *ṭořo*, [M] *ḍořa* ‘giant clam’
- X *jike* ‘kind of fish (probably a lutjanid), bec de cane’ > GC [T] *ṭiga*, [M] *ḍiye* ‘a fish, bec de cane’
- X *jaa* ‘kind of fern that grows in forest clearings’ > GC *ṭaa* ‘a kind of fern that grows in forest clearings’

# References

- Grace, George W. *Canala Dictionary (New Caledonia)*. Pacific Linguistics Series C 2. Canberra: Department of Linguistics, Research School of Pacific Studies, The Australian National University, 1975.
- ———. *Grand Couli Dictionary (New Caledonia)*. Pacific Linguistics Series C 12. Canberra: Department of Linguistics, Research School of Pacific Studies, The Australian National University, 1976.
- ———. “Hypotheses about the Phonological History of the Language of Canala, New Caledonia.” *Te Reo* 29 (1986): 55–67.
- ———. “Indirect Inheritance and the Aberrant Melanesian Languages.” In *Studies in Pacific Languages & Cultures in Honour of Bruce Biggs*, edited by Jim Hollyman and Andrew Pawley, 255–68. Auckland: Linguistic Society of New Zealand, 1981.
- ———. “Regularity of Change in What?” In *The Comparative Method Reviewed: Regularity and Irregularity in Language Change*, edited by Mark Durie and Malcolm Ross, 157–79. New York, Oxford: Oxford University Press, 1996.
- Harrison, S. P. “On the Limits of the Comparative Method.” In *The Handbook of Historical Linguistics*, edited by Brian D. Joseph and Richard D. Janda, 213–43. Malden, Oxford, Melbourne: Blackwell Publishing, 2003.
- Haudricourt, André G. “New Caledonia and the Loyalty Islands.” In *Linguistics in Oceania*, edited by J. Donald Bowen, Isidore Dyen, George W. Grace, and Stephen A. Wurm, 359–96. *Current Trends in Linguistics* 8. The Hague, Paris: Mouton, 1971. <https://doi.org/10.1515/9783111418827-012>.
- Moyse-Faurie, Claire & Marie-Adèle Néchérö-Jorédié. “*Dictionnaire Xârâcùù ~ Français (Nouvelle-Calédonie)*”. Nouméa: EDIPOP, 1989.
- Ozanne-Rivierre, Françoise. “The Proto-Oceanic Consonantal System and the Languages of New Caledonia.” *Oceanic Linguistics* 31, no. 2 (1992): 191–207.



A dramatic sunset over a body of water. The sky is filled with large, dark clouds that are illuminated from below by the setting sun, creating a vibrant orange and yellow glow. The sun is partially obscured by a large, dark cloud mass in the center. The water in the foreground is a deep blue, reflecting the light from the sky. In the distance, a dark silhouette of a forest or island is visible along the horizon. A single bird is captured in flight on the left side of the image.

Thank you!

by iezael williams