CHIRILA

Disentangling contact-induced stability

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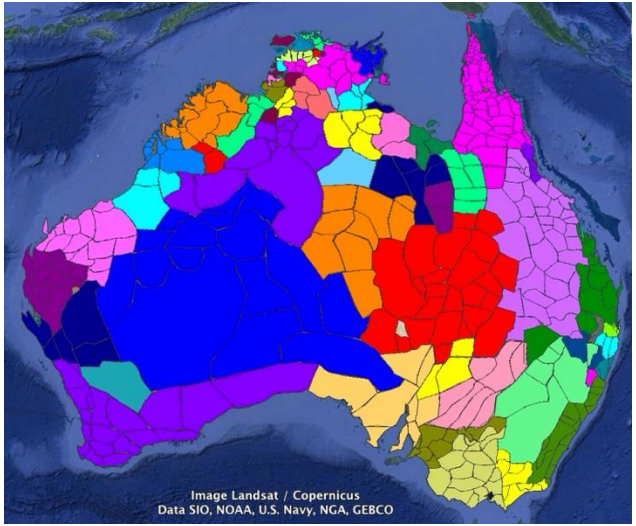
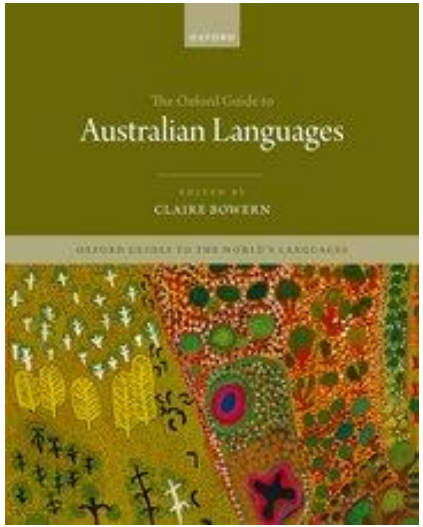
Today

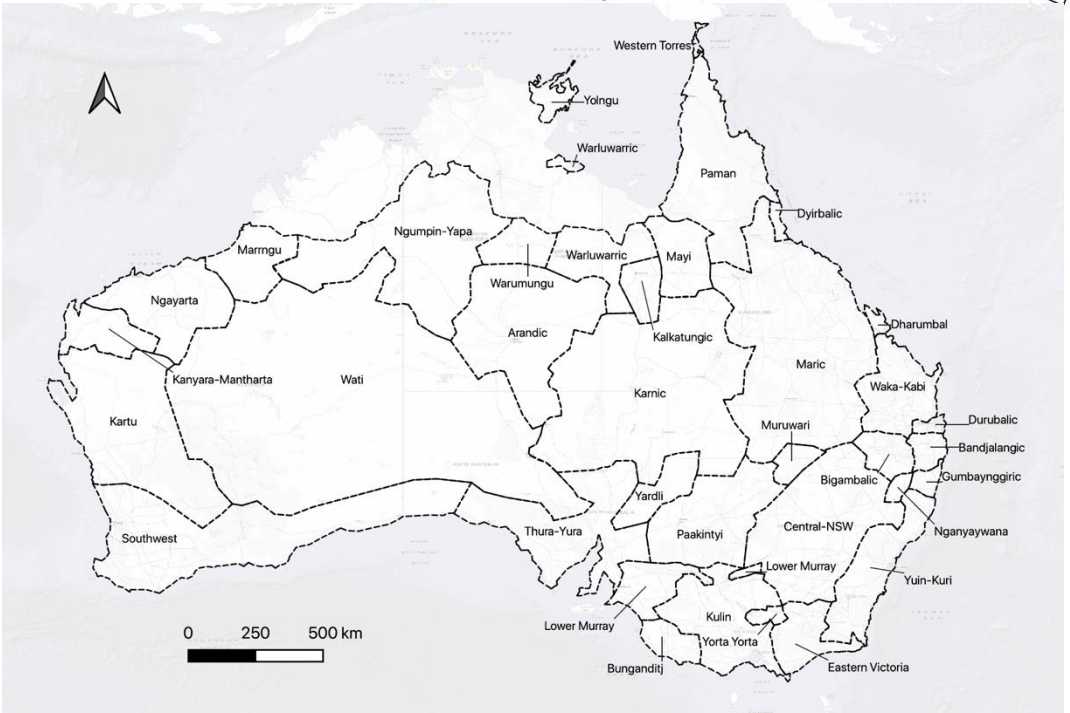


- What role does language contact play in promoting or impeding stability?
- Contact is usually described as a way of introducing material into a system, but can it also prevent changes from taking off?
- How Indigenous Australian phonology helps us understand the issues

Australian languages

- c. 30 families
- Pama-Nyungan covers 90% of the land mass
- c. 440 languages (Bowern 2022)
- + Tasmania





Surprising Phonological Uniformity in Australia

Little variation in phoneme inventories

Similar cognates across the country

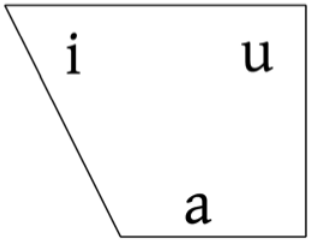
Similar (low-level) changes in different subgroups

"[Australian languages] share a number of striking similarities in their phonology and in their phonetics, which set them apart from most other languages of the world."
[Butcher 2006: 187]

A typical inventory

	Labial	Lamino-dental	Apico-alveolar	Retroflex	Palatal	Velar
Nasal	m	n̪	n	ɳ	ɲ	ŋ
Stop	p	t̪	t	ʈ	c	k
Liquid		l̪	l ɹ r	ɭ	ʎ	
Glide	w		j			

(+ ʔ)



(+ vowel length)

80% of languages have word-initial stress

Busby 1980, Dixon 1980, Round 2022, Goedemans 2010)

Investigating diachronic trends in phonological inventories using BDPROTO

Original Paper | Open access | Published: 07 January 2020

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From: Investigating diachronic trends in phonological inventories using BDPROTO

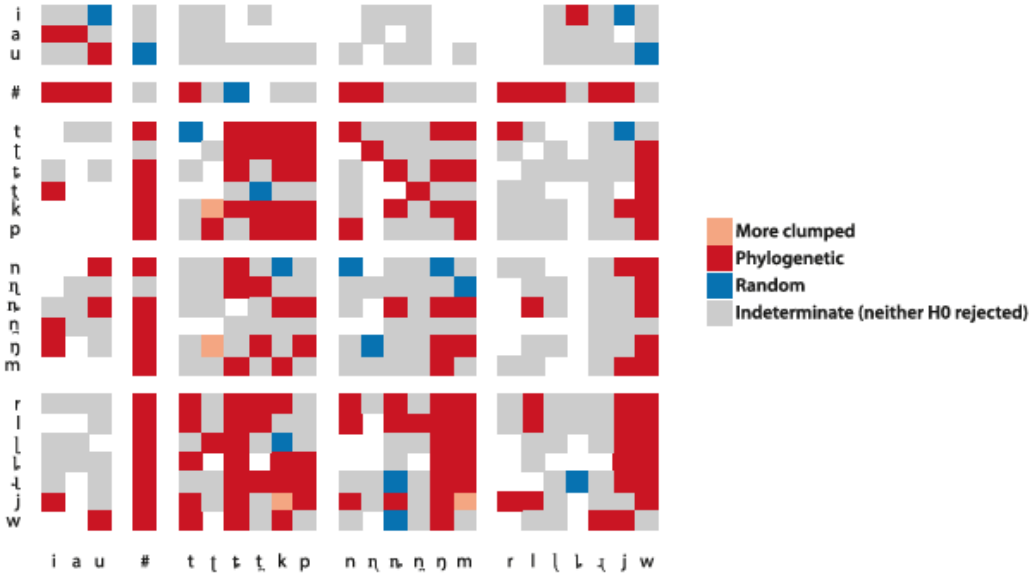
Language family	Consonants	Vowels
Arawakan	37.08 ± 29.00	37.76 ± 28.93
Dravidian	39.36 ± 29.03	39.10 ± 29.60
Tupi-Guarani	39.73 ± 29.16	38.10 ± 29.60
Turkic	39.40 ± 29.67	41.08 ± 29.27
Indo-European	0.015 ± 23.92	26.17 ± 31.98
Austronesian	0.004 ± 0.0008	0.001 ± 0.0004
Bantu	0.037 ± 0.008	0.006 ± 0.001
Pama-Nyungan	0.002 ± 0.0003	0.0004 ± 0.00008

Clarifications

- **Not a claim about absence of regularity**: where there is change, it's regular (cf. Koch 1997, Alpher 2004, Sutton & Koch 2005, Bowern 2007; but cf. Miceli 2019, Miceli & Dench 2017, Dench 2001)
- Claim about inventory, not **phonetic** uniformity (cf. Babinski 2022; pace Andy Butcher and others)
- Particularly a claim about **the creation of new phonological contrasts (ie, the phonological inventory)**

Inventory, not phonotactics

- Macklin-Cordes et al (2018, 2021) showed that there's recoverable phylogenetic signal in phonotactics (segment bigram frequencies) but not inventories



Changes are not equally distributed across languages and subfamilies

- Tend to have lots of changes in a single language or proto-language
  - Bardi vs Nyulnyulan
  - Warluwarra (or Yanyuwa?) vs rest of Warluwaric
  - Arandic vs rest of Pama-Nyungan
  - Northern Paman vs rest of Pama-Nyungan
  - Nhanda vs rest of Kartu

- **Mostly not changes that lead to new contrasts**

Why are Australian inventories so similar, despite there being so many languages?

Possible explanations

- Age of the family
  - Too young for lots of change to accrue?
- Non-uniformity
  - Maybe things work differently in Australia?
- Social explanations
  - Lots of contact? (similarity, not stability)
  - Language transmission
- Phonetic explanations
  - Not much variation
  - Accurate imputation
- Structural explanations
  - Variation and contrast
  - Stable segments

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Where have all the sound changes gone? Phonological stability and mechanisms of sound change

Claire Bowern

From the journal Linguistics Vanguard
https://doi.org/10.1515/lingvan-2021-0073

Language contact as an explanation for stability

Australian language contact

1 small versus large community size (e.g. Haudricourt 1961)
2 dense versus loose social networks (Milroy & Milroy 1985)
3 social stability versus instability (e.g. Dixon 1997)
4 high versus low degree of shared information (e.g. Perkins 1992)
5 degree of contact versus isolation[2]

e.g. Trudgill (2010, 2011)

- Australia is fairly uniform on many of the variables thought to be relevant for contact:
  - “small” community size
  - dense & loose (closeknit but with regional ties)
  - [socially stable? “oldest continuous culture” in climatically unstable environment]
  - High degree of shared information
  - High degree of regional contact with neighbors
- But very non-uniform on others
  - Exogamy
  - Multilingualism patterns in individuals
  - Population density and sedentism; consistency of exposure
  - Number of languages used daily in a community
  - How related/close the surrounding languages are

Australian multilingualism

- Not well studied
- Can't now be studied
- Inferred by me from many, mostly secondary sources (e.g. genealogies with linguistic information, reports, own experience, inference from comments in grammars, colonial era comments about trackers' language knowledge) when compiling classification in Bowern (2023)
- Singer 2018, 2023; Vaughan 2018; Vaughan & Singer 2018; Heath 1978, 1981

- Language range sizes and population density (therefore opportunities for language contact) vary

- **Monolingualism**
  - Warlpiri, Bardi
- **Asymmetric bilingualism**
  - Bardi vs Nyulnyul, Oowini
- **Variable bilingualism** (own one plus another, e.g. grandfather's language)
  - Diyari, Guyani?
- Key multilingual **community translators**
  - Maudie Naylon, Mick & Lardie Moonlight
- Community-wide **multilingualism**
  - Linguistic exogamy
  - Parents', grandparents' lgs
  - Active and passive control of 5-10 lgs
  - Part of being a competent social individual
  - Some language rights like property and ceremonial rights (e.g. to use a language in ceremonial contexts)

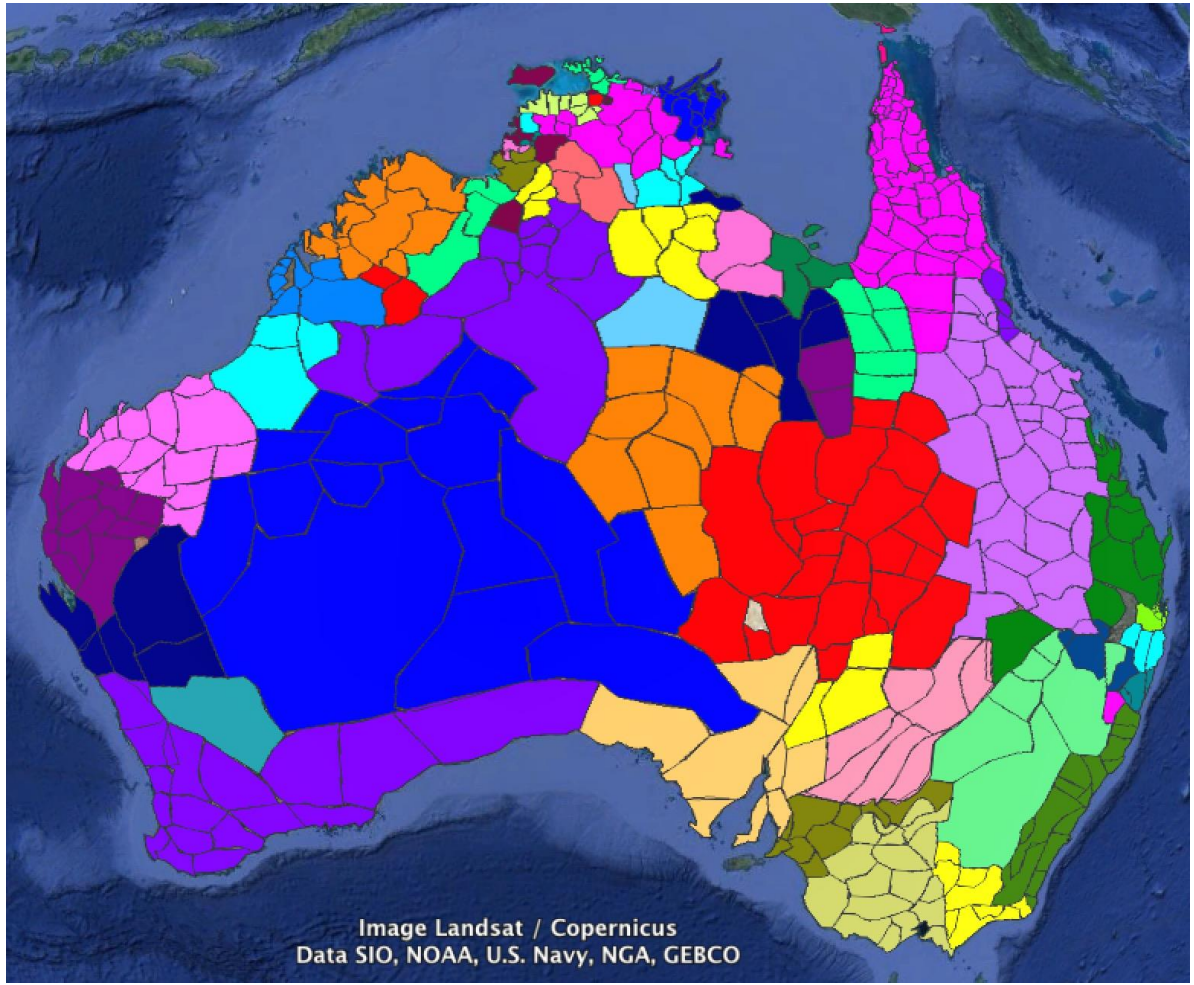


Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Some contact-based explanations

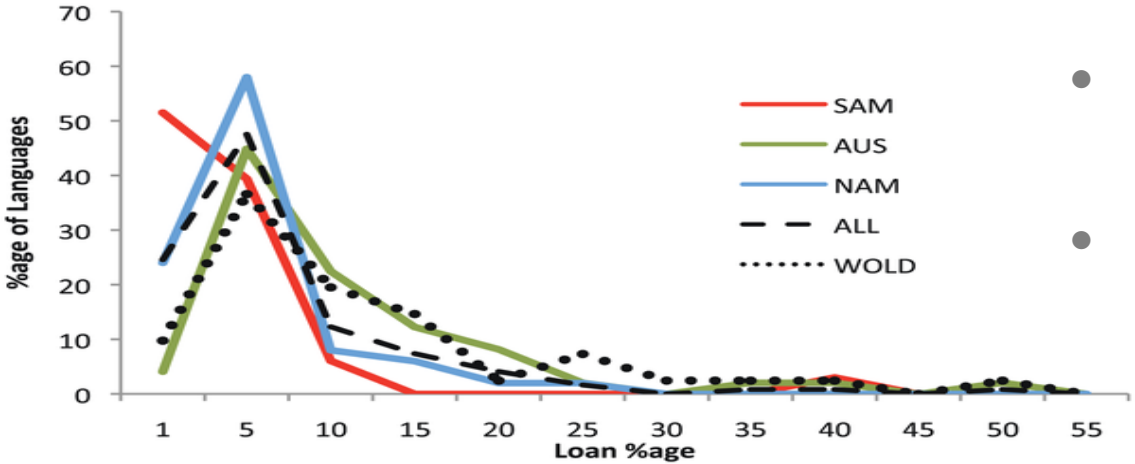
- Contact-induced **convergence**: languages are similar because of widespread shared innovation, not retention (Dixon 2001, Dench, etc.)
- Contact is a **source of new material** in phonology
  If surrounding languages have identical inventories, we remove a source of innovation
- Contact with identical inventories **disrupts phonologization** at the subphonemic level

Convergence

Intensive contact/convergence?

Maybe...

- **Multilingual communities lead to intensive contact and convergence**



But...

- Bowern et al (2011) showed that Australian languages weren't different from the rest of the world
- Contact isn't biased towards feature conservation elsewhere
- Multilingualism in Indigenous Australia is variable!

Contact introduces new material

New Contrasts from language contact

Contact with different inventories drives new contrasts; if the languages in contact have identical inventories, there's no source of new features.

- Lexicon as source
  - New phonemes through lexical borrowing
  - Loans create new environments for contrast
- New features without extensive lexical borrowing
  - L1/L2 transfer, substrate effects
- Examples:
  - English ʒ [loans from French]; also phonologization of f ~ v
  - Indic retroflexion [from Dravidian] (Schwarzschild 1973; Southworth 1979)
  - Tonogenesis (Kirby 2014, Ratliff 2015, Kingston 2011, Haudricourt 1954, etc)
  - Bilabials in Mohawk (Bonvillain 1978)

Adaptations

- Loan ***adaptations*** are also common: no *requirement* that new contrasts are adopted (Kang 2011; Peperkamp & Dupoux 2003, among many others)
- Yolngu loans from Macassar, Arabic, English, Dutch:
    - dhäpathung “shoes” < zapatos [Spanish, etc. via Makassar]
    - galiku “flag” < calico [English via Makassar]
    - djuyipan “saucepan” < saucepan [English]
    - djorra’ “paper” < surat [Arabic via Makassar]
    - dhimurru “east” < timor [Makassar/Buginese]
    - rrupiya “money” < rupiah [Sanskrit via Makassar]

Contact inventory changes

- Yolngu may now have marginal /s/ and 5 vowel system from recent English loans
- Proto-Yolngu voicing contrast from Burarran loans (Alpher & Bowern 2009)
- Western Torres source of s? (from *ty + loans but more complicated; cf. Alpher et al 2013, Alpher 2004)

- Can’t be the whole story:
  - No one (to my knowledge) has claimed that contact is the *only* source of inventory changes
  - There was contact outside Australia (Torres Strait: Papuan, Arnhem Land: Makassar etc, FNQ: Austronesian)
  - New contrasts, where they do occur in Australia, can’t all be explained by borrowing from other inventories

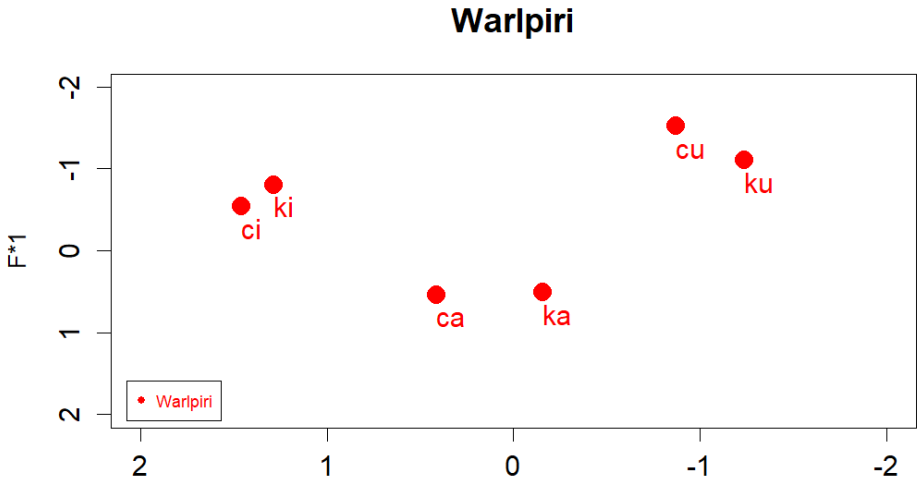
The role of contact in disrupting phonologization

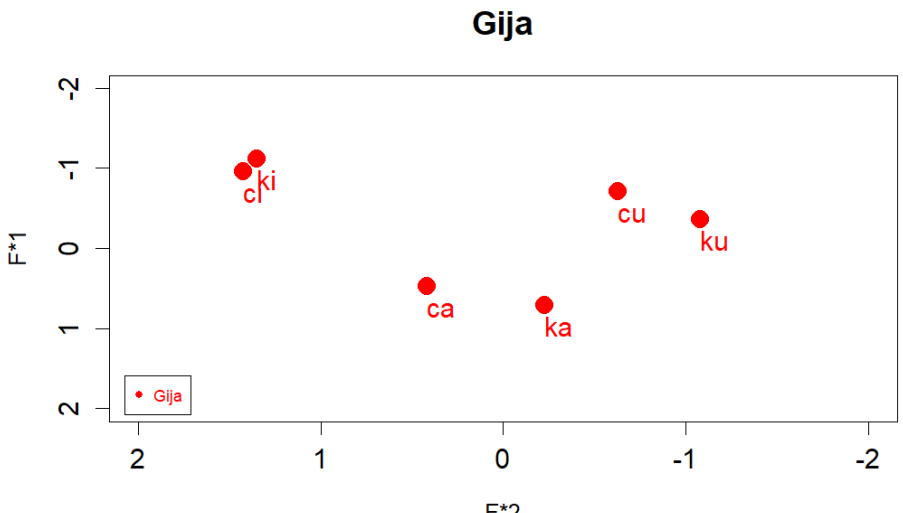
3 scenarios

- **Loaned allophonic patterns facilitate phonologization**
  [> MORE change]
  - Borrowing of words with different realizations leads to secondary splits
- **Loaned allophonic variation prevents structured secondary contrasts**
  [> LESS change]
  - Speakers of other languages without a change in progress introduce enough “noise” to disrupt the cues for learning, thereby preventing phonologization
- **Language contact increases speakers of “conservative” variants**
  [> LESS change]
  - Conservative speakers contribute to maintaining equilibrium (fewer variants spreading and reaching critical mass)

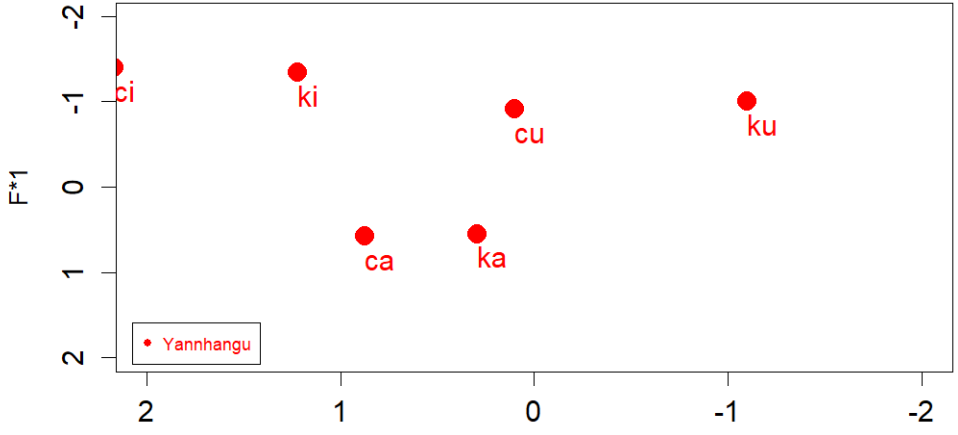
Contact and allophonic variation?

- Identical inventories, identical allophony? (Therefore no chance for borrowing?) No!
- Differences in realization (here: vowel realization with palatal vs velar onsets)
- Normalized F1 ~ F2 (Lobanov method), three vowels in stressed [i.e. initial] positions only

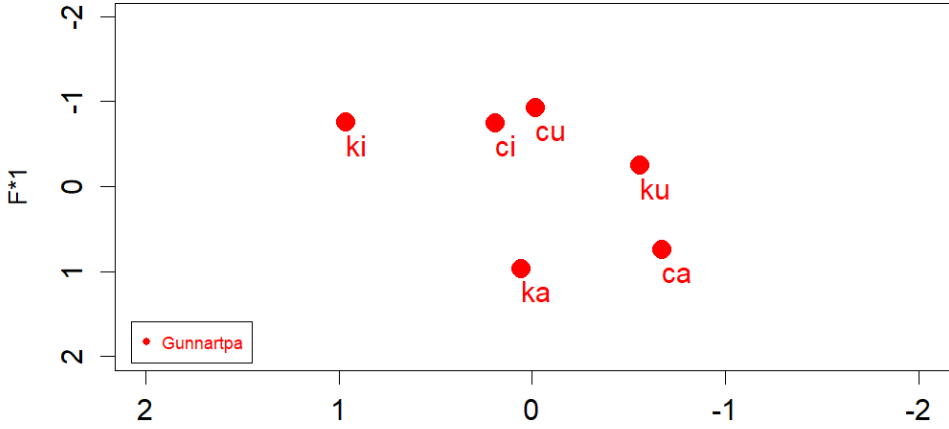




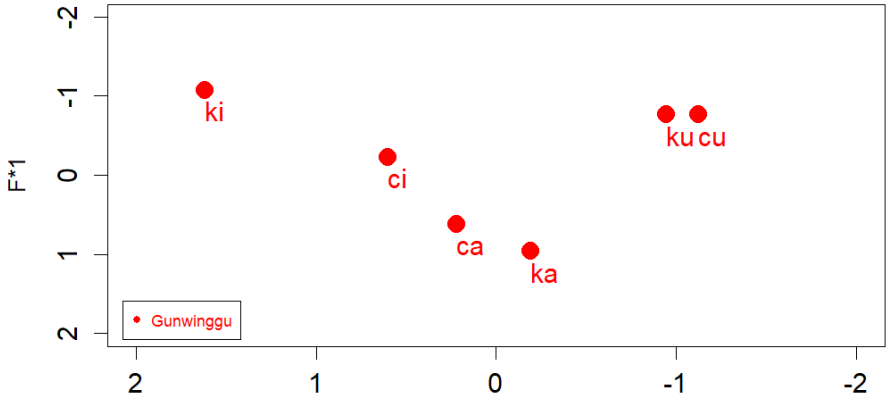
Yan-Nhangu



Gun-nartpa

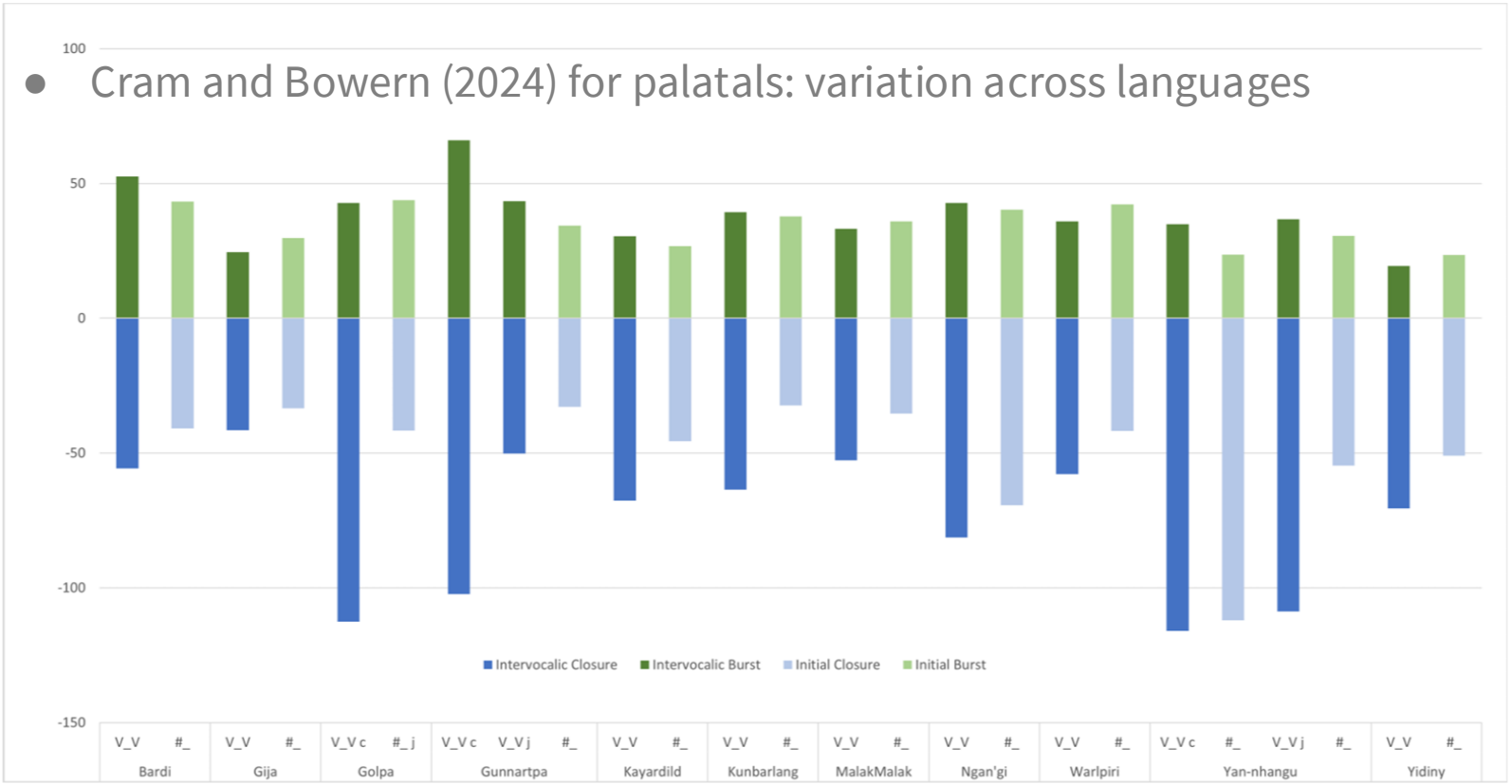


Gunwinggu



Palatal variation:

- Cram and Bowern (2024) for palatals: variation across languages



Feature borrowing?

- Karnic environments for prestopping
- phonemic in Arandic, optional in all Karnic languages, but under different conditions; Bowern (1998, 2001)

Language	*bm*	*dny*	*dnh*	*dn*	*rdn*	*kng*	*dly*	*rdl*	*dl*	*dlh*
Ara-Wn	X	X?	X	X			X?		X	X
Diy/Nga/Yarl			X	X					X	X
Yawa/Yandr				X				X	X	X?

Table 3.2. Environments for Prestopping.

Interim summary

- These scenarios should lead to change
- All the seeds are there
- But they aren’t leading to new contrasts

- Why not?

Loans and Loan phonology disrupts structured secondary cues?

Structured conditioning

- Sóskuthy (2015); Wedel (e.g. 2006, 2015):
  - Universal pressures only come into play when language-specific equilibria are disturbed; trade-off between functional load and frequency
- Dresher (2009, 2015, 2022):
  - Phonologization only happens when the feature participates in a contrast elsewhere
- Yu (2013); Wedel & Blevins (2009):
  - Need structured, reliably conditioned subphonemic variation for phonologization

Structured secondary cues

- **Loaned allophonic variation prevents structured secondary cues**
  [> LESS change]
  - Speakers of other languages without a change in progress introduce enough “noise” to disrupt the cues for learning, thereby preventing phonologization
  - Bermudez-Otero (2018): change happens when population assumes (random) variation is age-graded; contact might disrupt that or reinforce it

- Structured secondary cues are variable in Australia (but not much testing)
- Plausible, but not the full story
- Not all change is about cue phonologization
- (Simulation modeling is at present inconclusive)

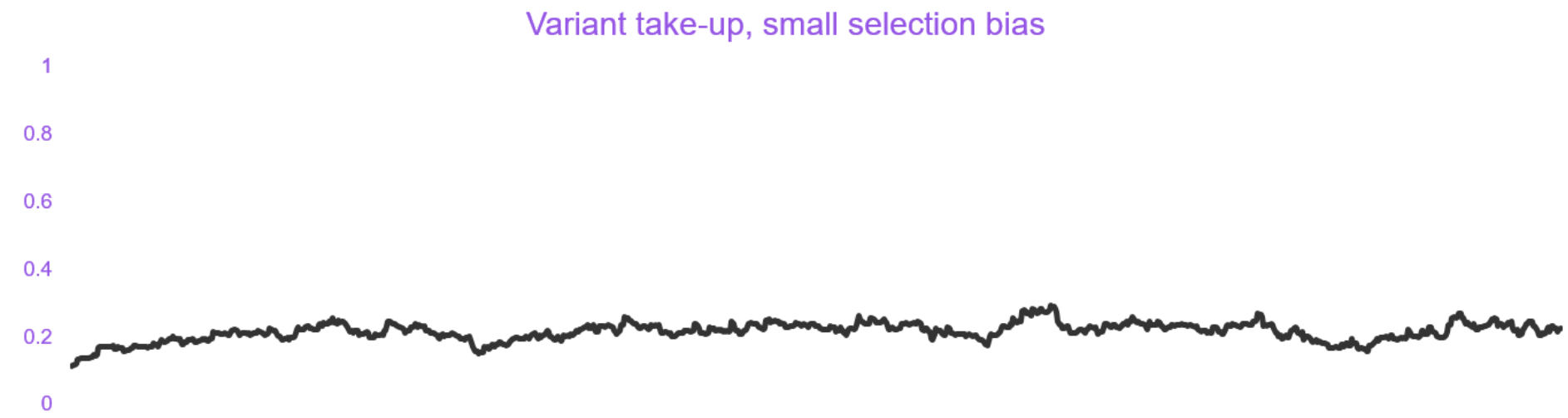
Scenario 3: Language contact increases speakers of “conservative” variants

- Testable through simulation
- Assumptions:
  - Population of speakers
  - Sensitive to changes in frequency of variants (if variant incidence is rising, more people will use it)
  - Speakers contribute utterances, which they use to calculate whether a variant is taking off
  - Variant is under weak selection (ie without further intervention, it’ll spread across the population)
  - Periodic contributions to utterances from external population of speakers who don’t have the variant.
- Questions:
  - Under what conditions does the variant spread (or not)?
  - How much external influence?

No selection bias, minimal contact

Small selection bias, low chance of contact

Small selection bias, high chance of low contact



Conclusions

Conclusions

- Australian phonological systems are unusually stable
- Contact explanations for Australia tend to focus on convergence
- Here, we looked at 3 other ways of investigating contact in phonology
- Contact between identical inventories might remove a source of innovation [possible “slowdown”]
- Contact might disrupt structured allophony, making it harder for learners to phonologize such patterns [possible, but opposite predictions also possible]
- Contact might promote conservative variants, impeding changes from spreading [possible, but preliminary]
- Contact just one part of the story, but a useful one.

Thank you!

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