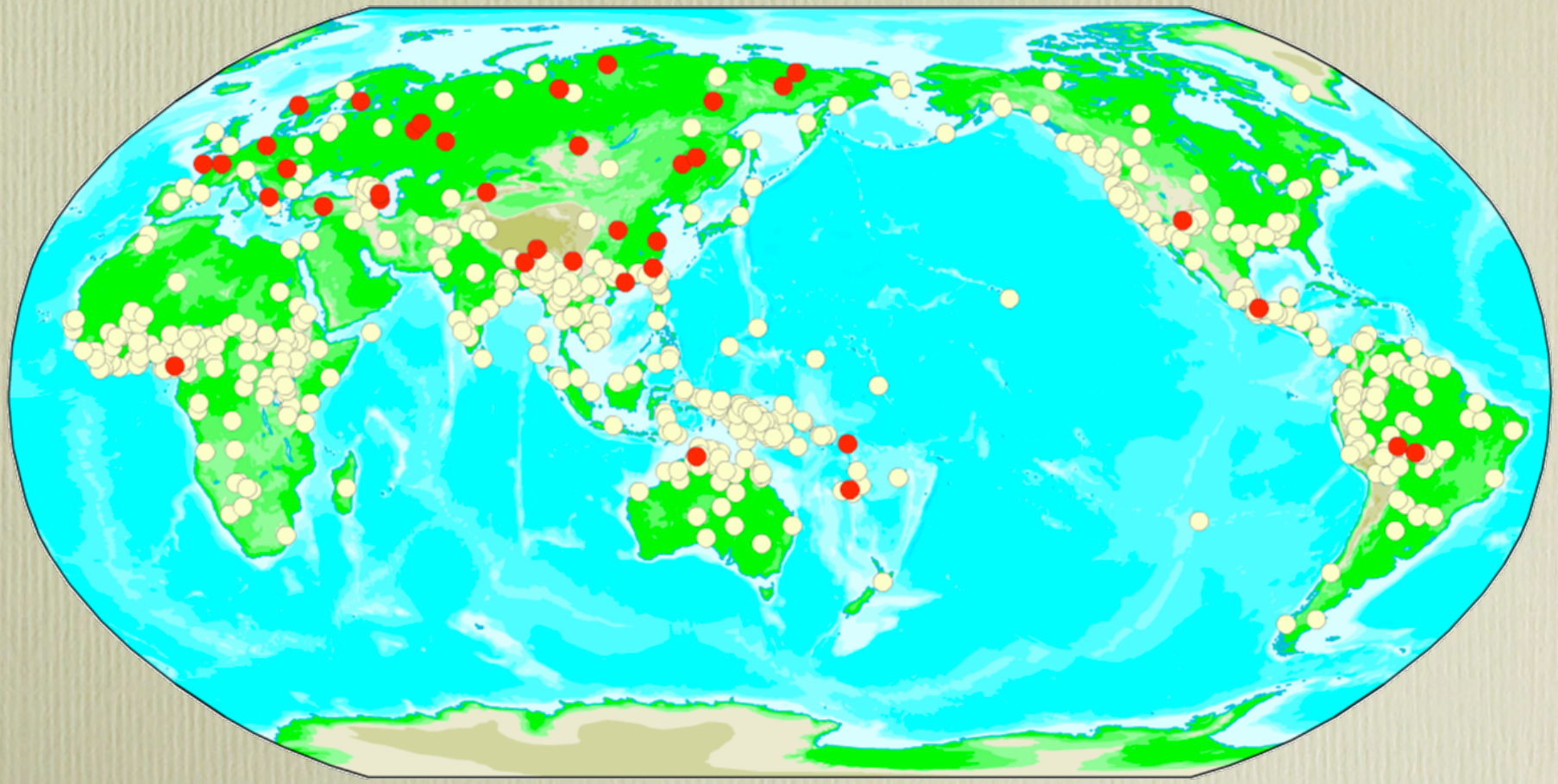
Identifying areas from typological surveys

Michael Cysouw
Max Planck Institute for Evolutionary Anthropology, Leipzig

World Atlas of Language Structures

- 140 worldmaps showing typological characteristics of languages
- Phonology, Morphology, Syntax, Lexicon
- Between 150 and 1,300 languages per map
- In total 58,000 datapoints
- Many maps appear to show areal patterns

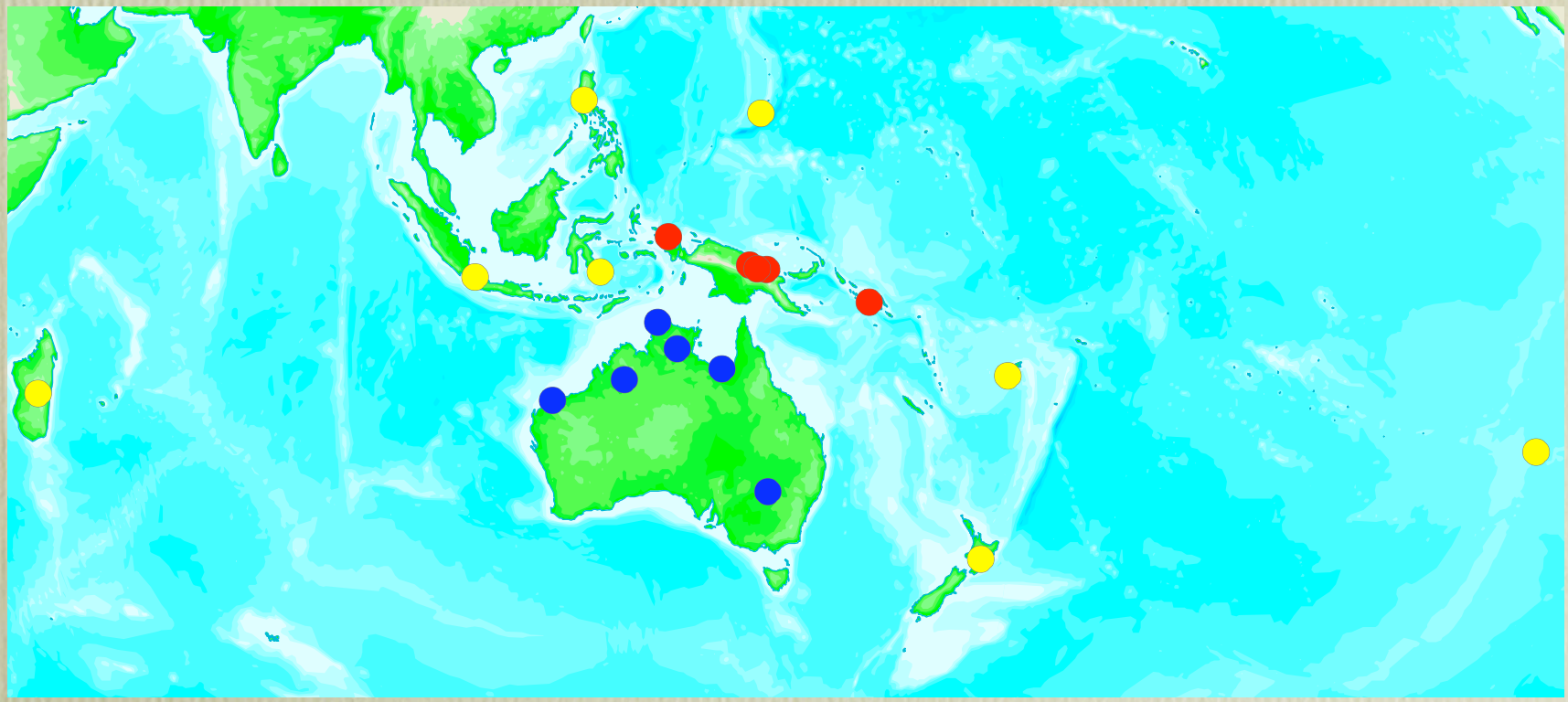
Front rounded vowels



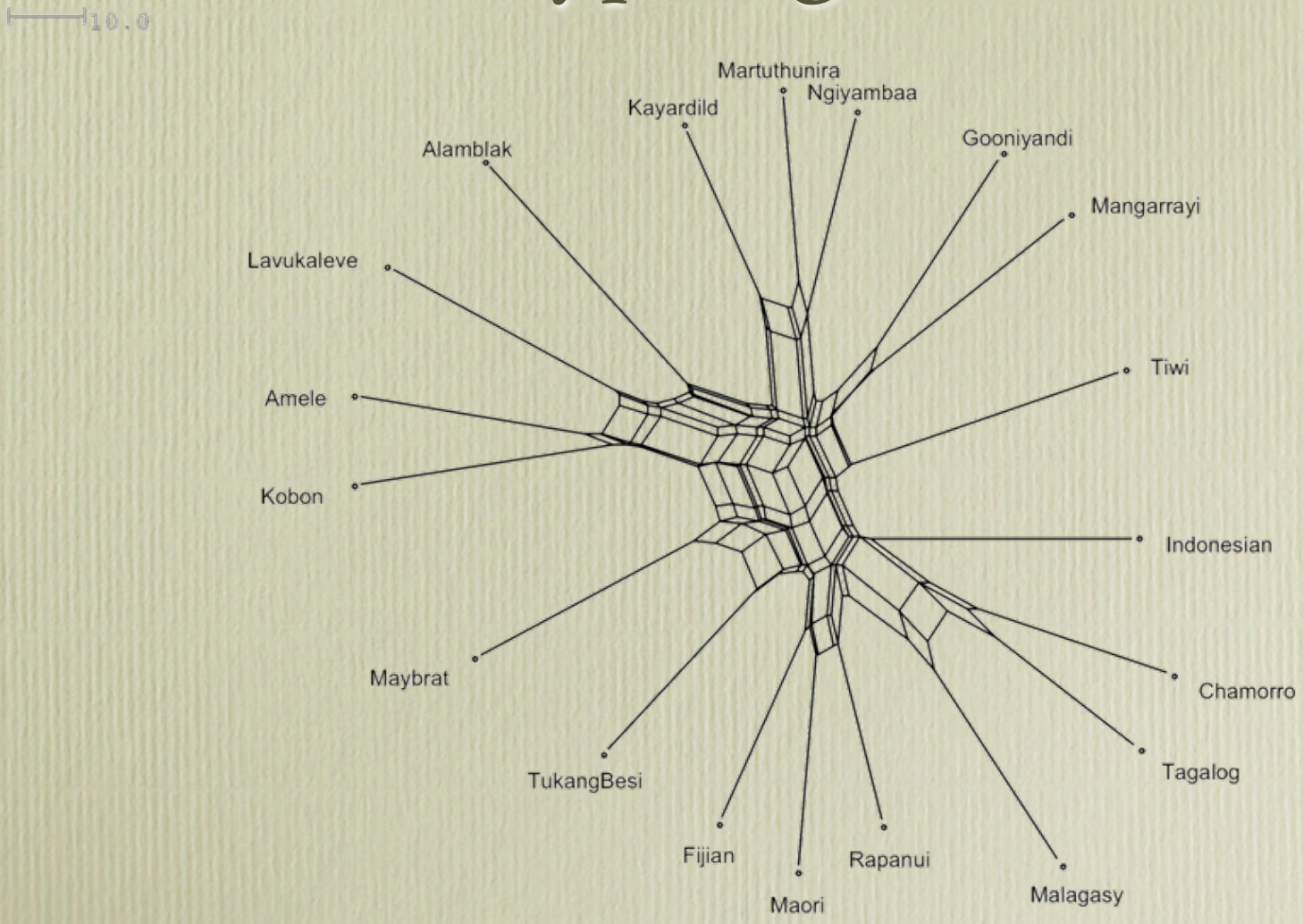
Maddieson, Ian (2005) Front rounded vowels.
In: *World Atlas of Language Structures,* Martin Haspelmath *et al.* Oxford: OUP.

What kind of (areal) patterns
can be found when
all maps are combined?

Oceania



NNet of typological distances



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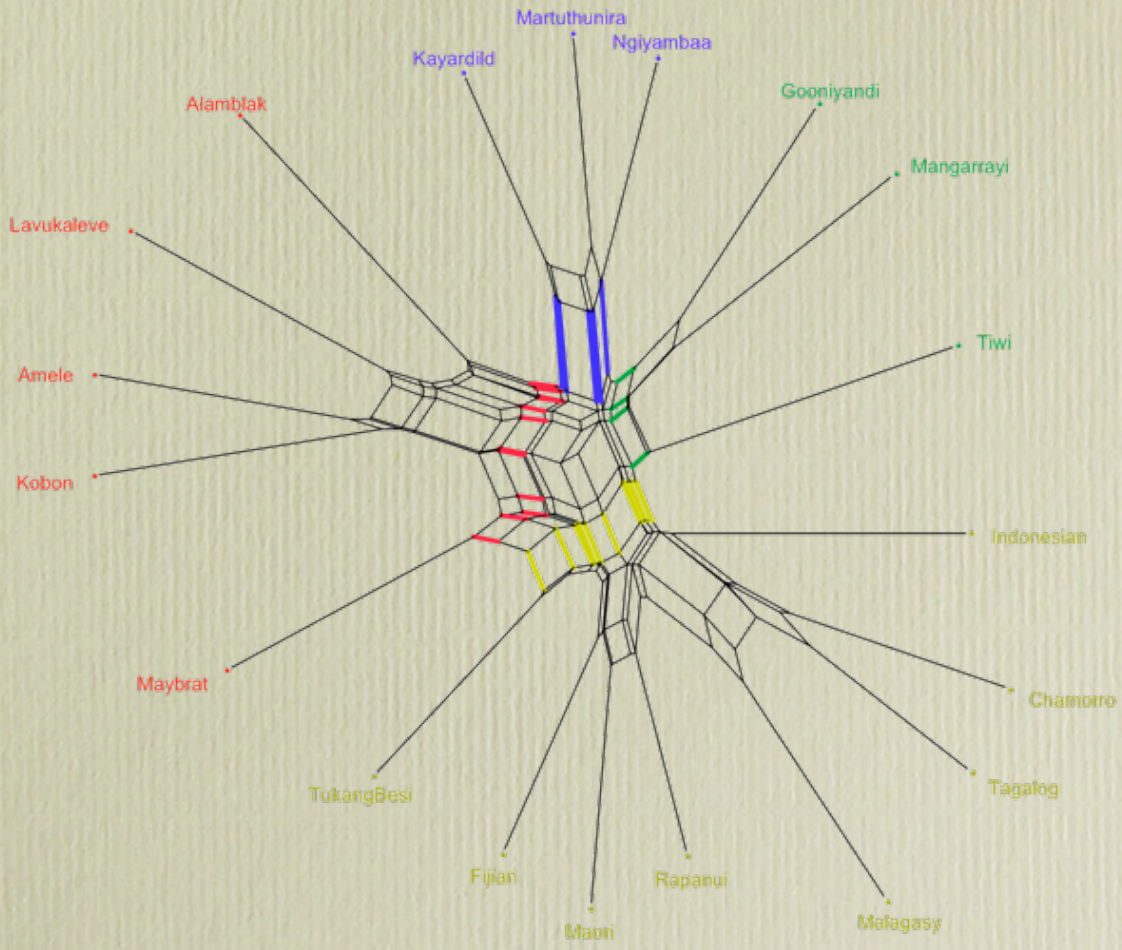

MDS of typological distances

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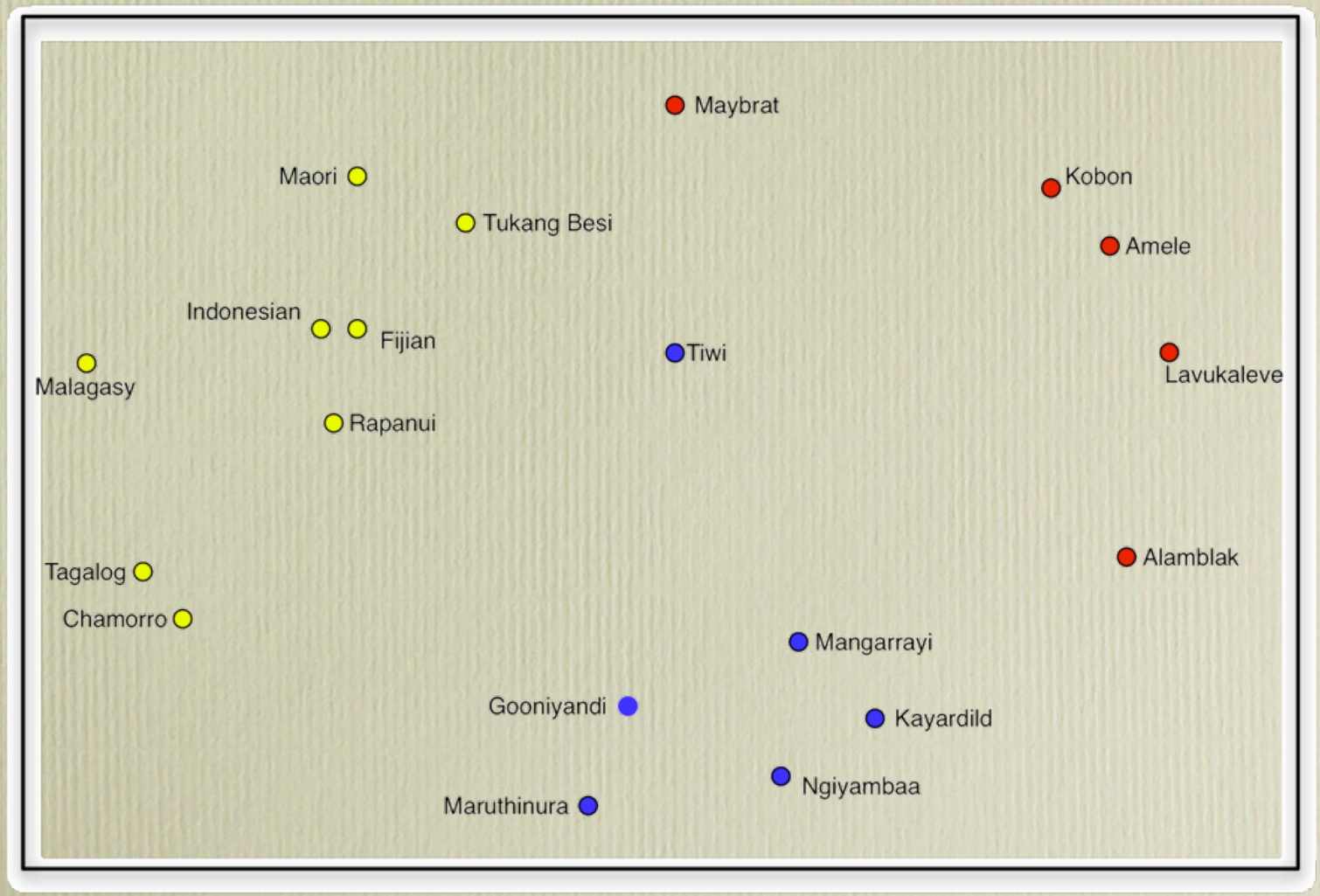

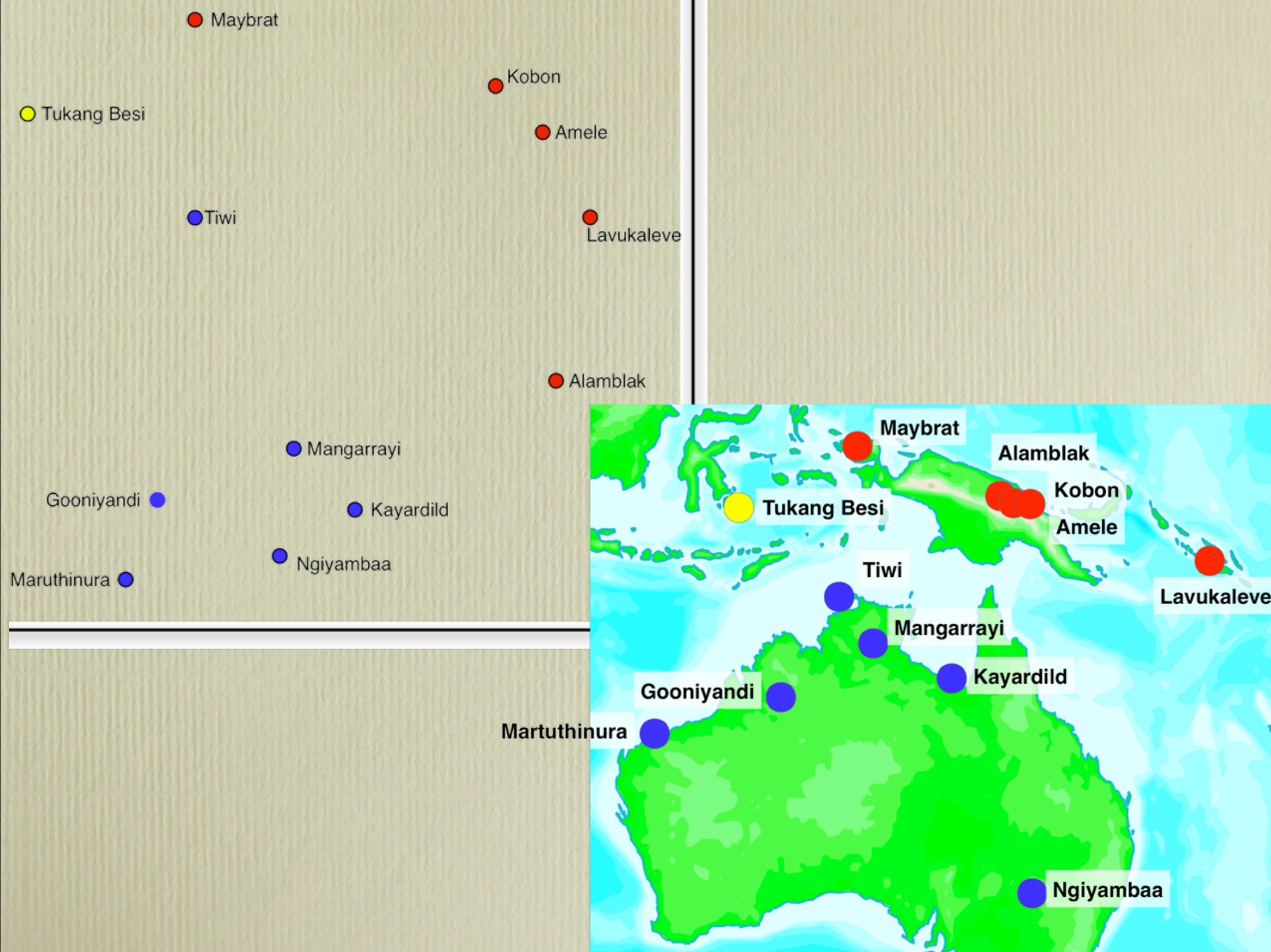
Maybrat
Kobon
Tukang Besi
Amele
Tiwi
Lavukaleve
Alamblak
Mangarrayi
Gooniyandi
Kayardild
Ngiyambaa
Maruthinura
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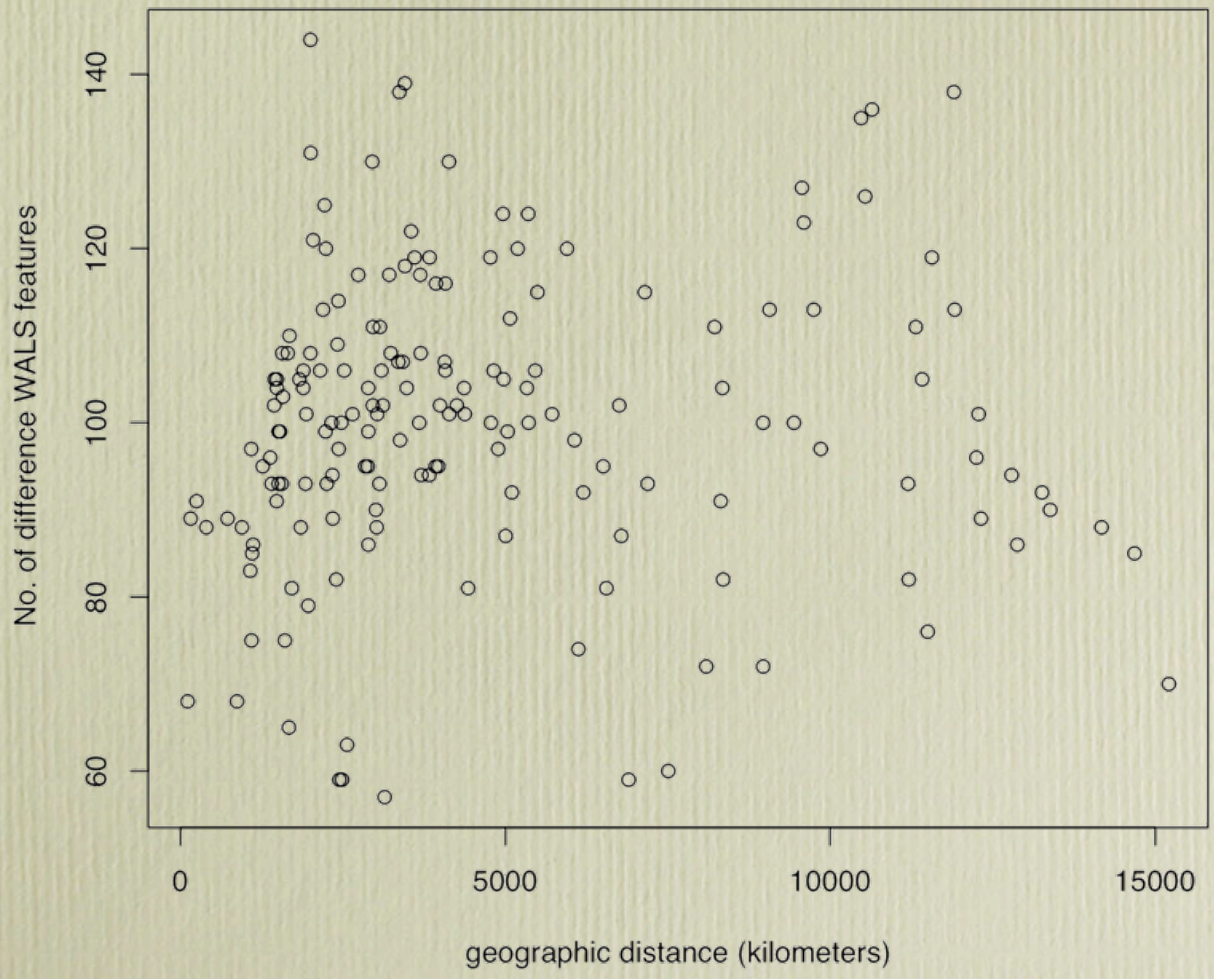
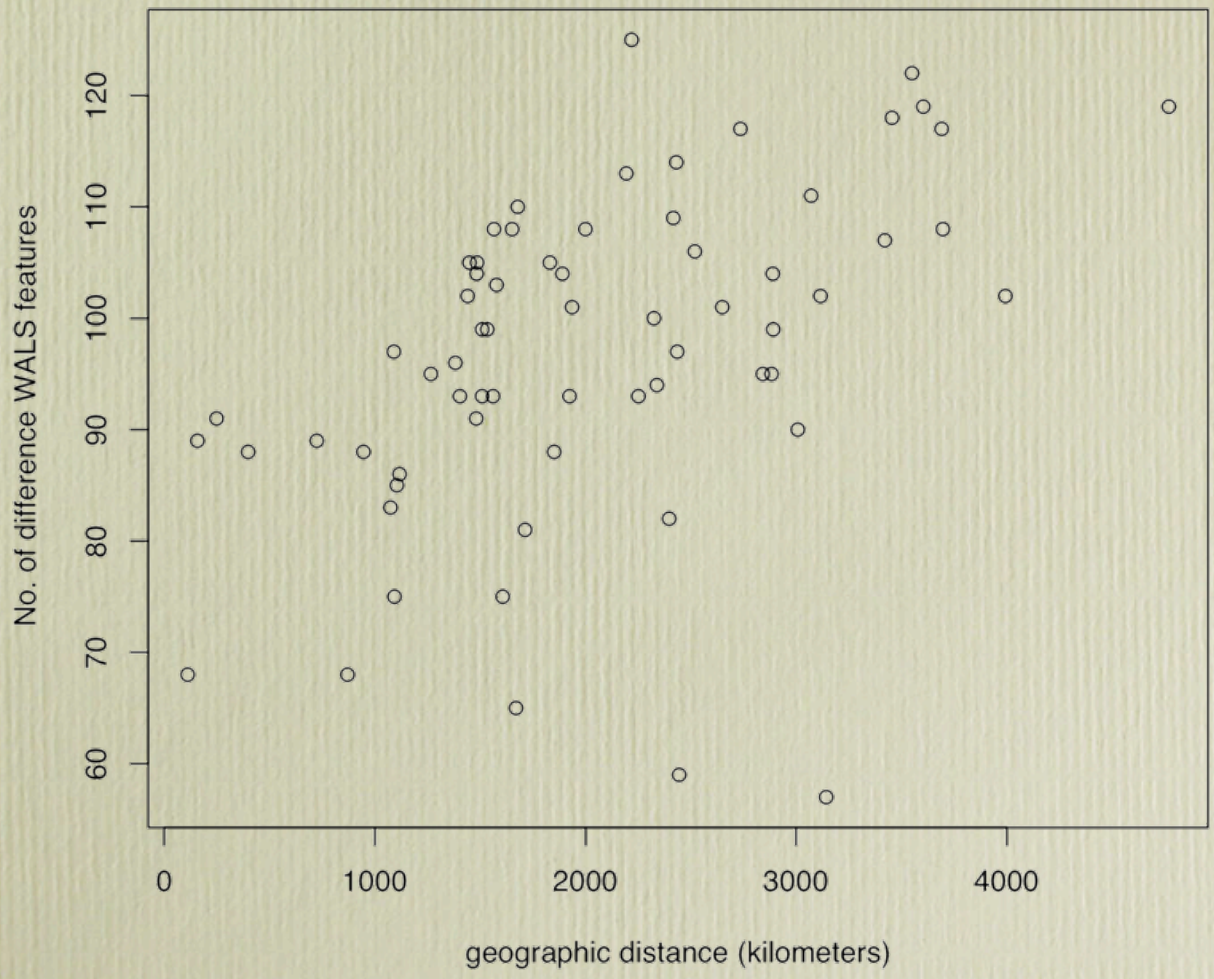
Typology/geography correlation



Mantel test

p = .349

Correlation for selection only



Mantel test

p = .001

When does correlation improve?

	Pearson's *r*
Nothing removed	.035

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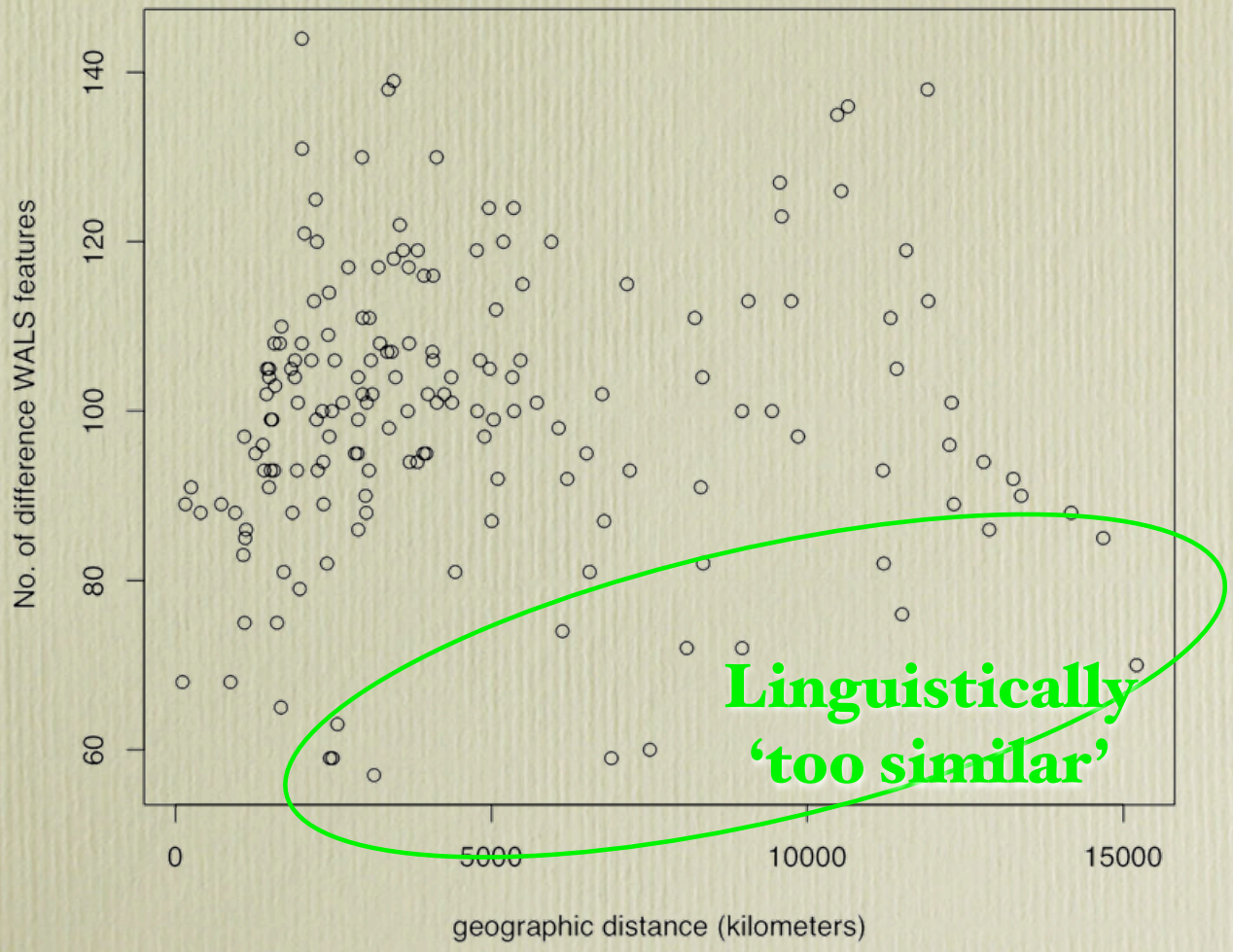
	Pearson's *r*
Nothing removed	.035
Rapanui	.186
Chamorro	.086
Indonesian	.076
Fijian	.073
Tagalog	.071
Maori	.062
Tukang Besi	.048

Investigation typology/geography relation



Linguistically ‘too similar’

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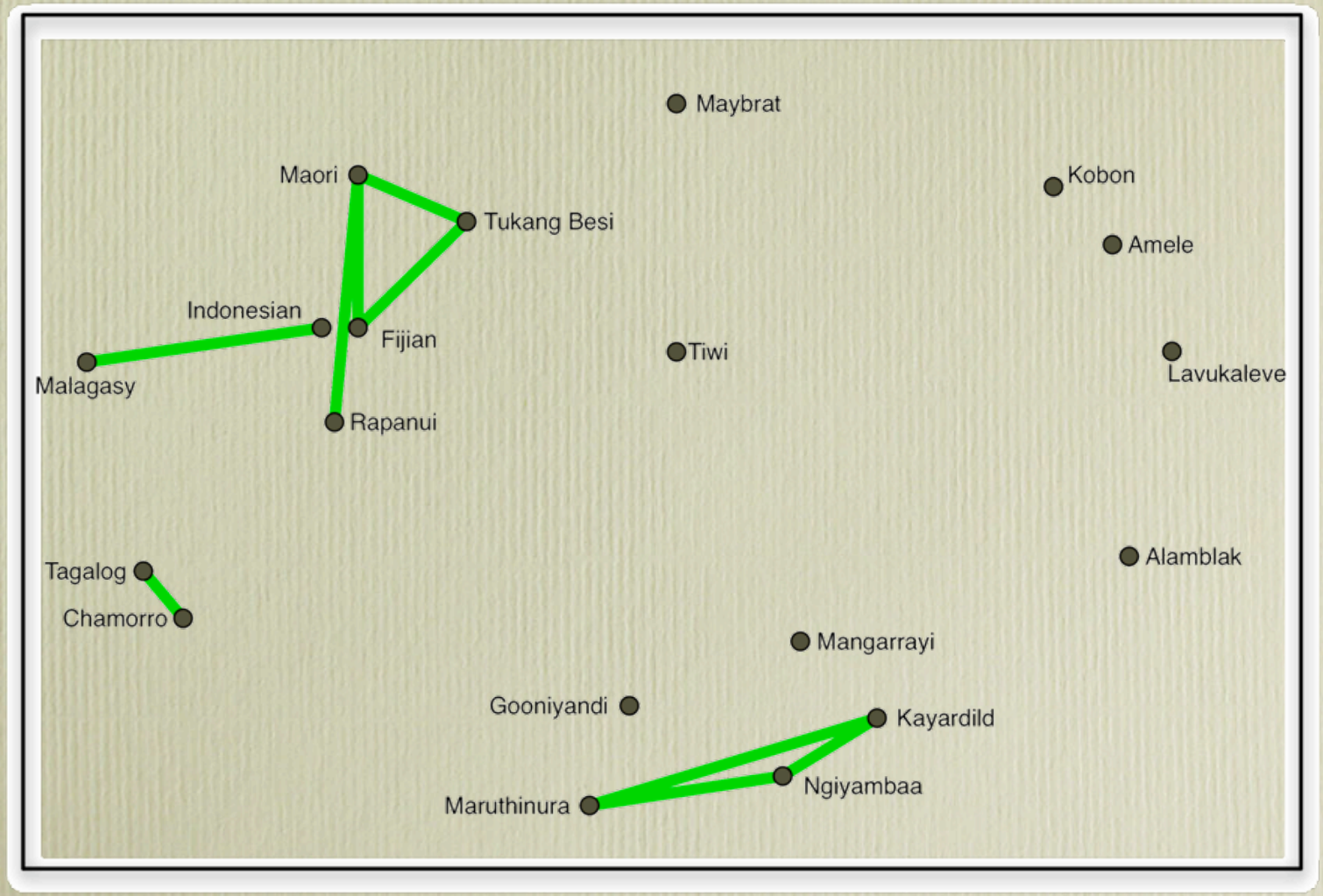


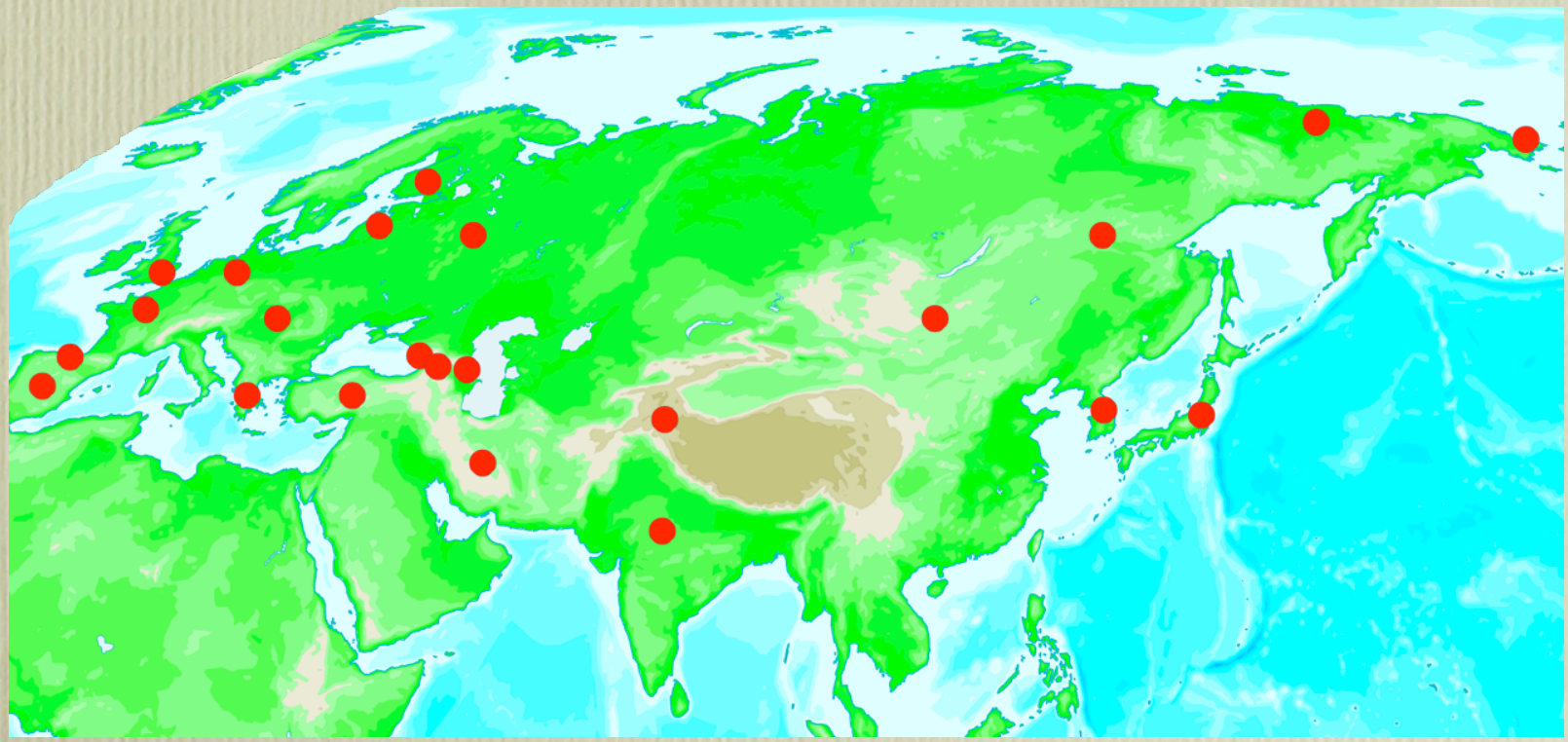
Summary

- Typology is correlated to genealogy
- but: typology is also correlated to geography
- When removing the (genealogically related) Austronesian languages, the typology/geography correlation improves
- The language-pairs that are typologically more similar than expected from geography are genealogically related

Towards an interpretation

- There are two different kinds of typological interaction between languages:
  - genealogically related languages are similar
  - areally close languages are similar
- In longterm static (areal) interaction typological features diffuse individually, leading to regular geographical clines
- In relatively recent (genealogical) spread bundles of features 'move' together, leading to stronger similarities as expected from geography

Eurasia



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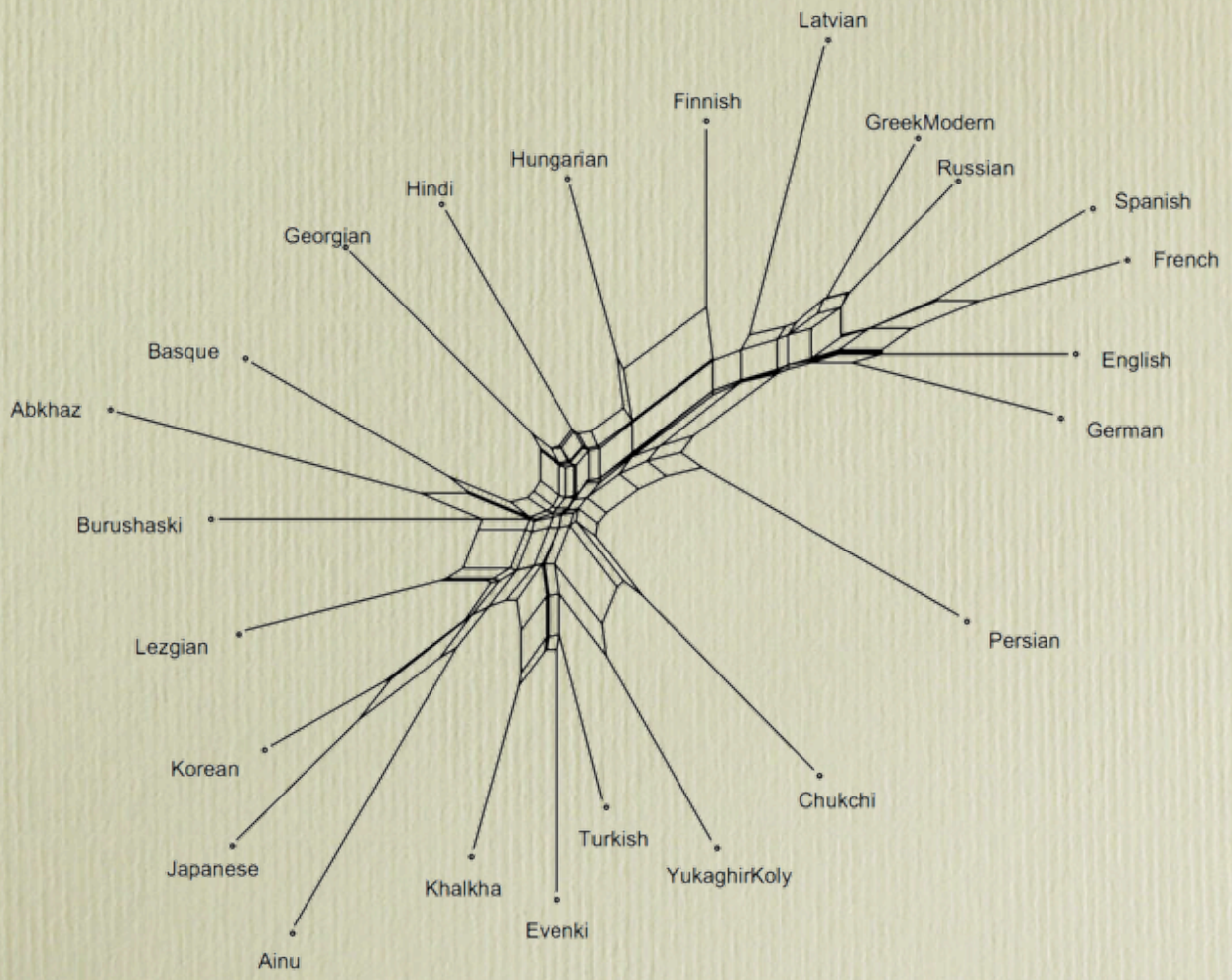
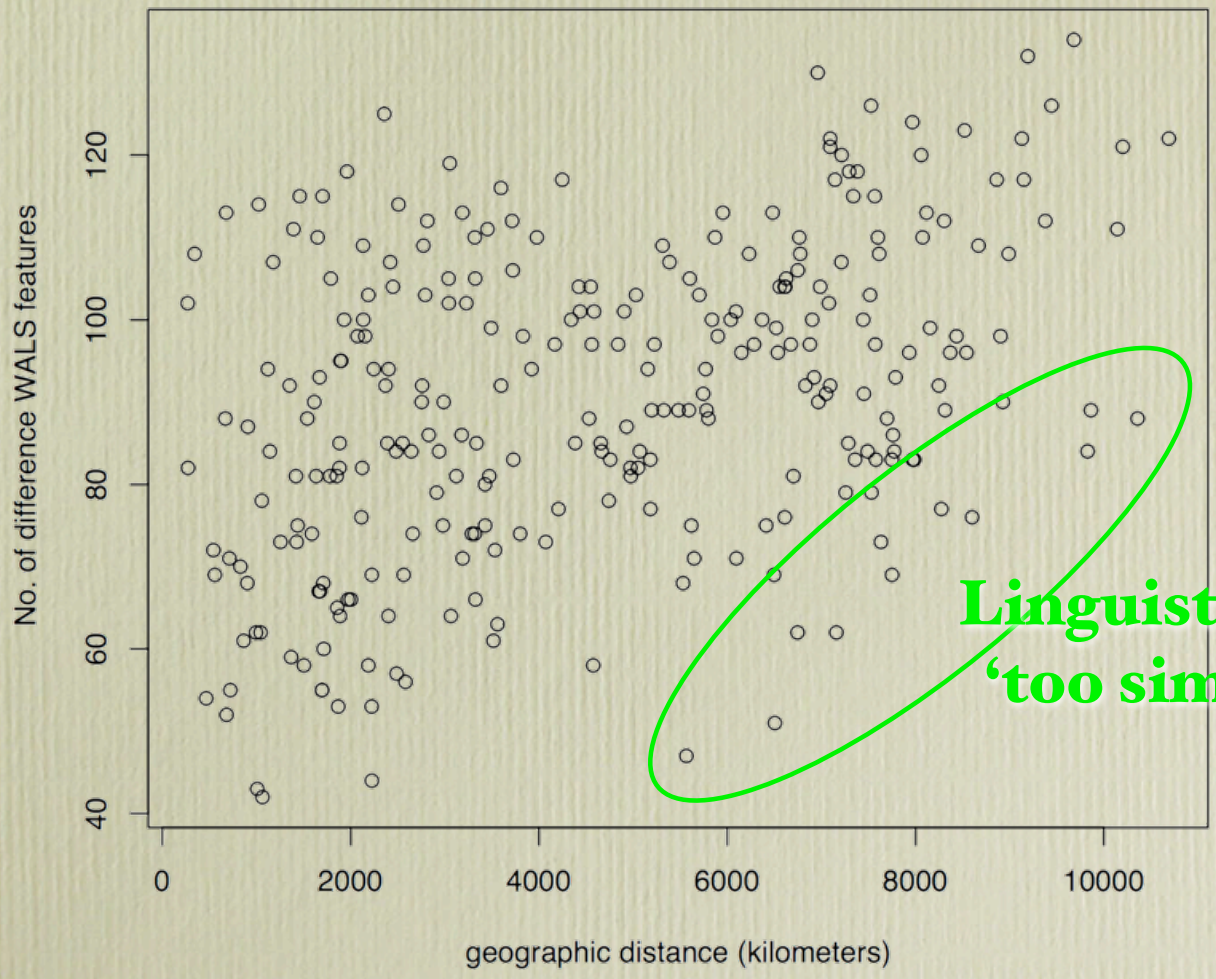


MDS of typological distances

Typology/geography correlation



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MDS of typological distances

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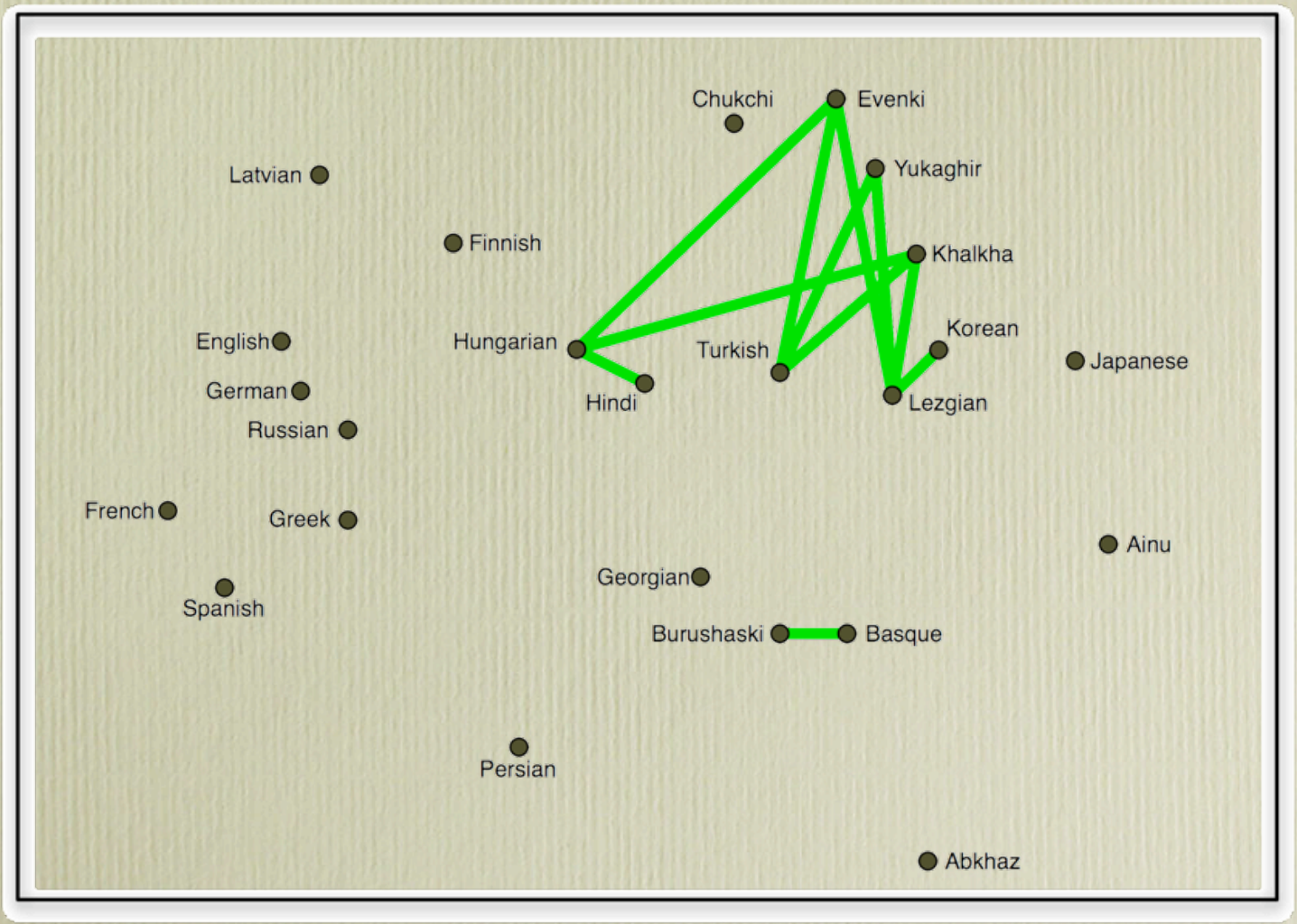
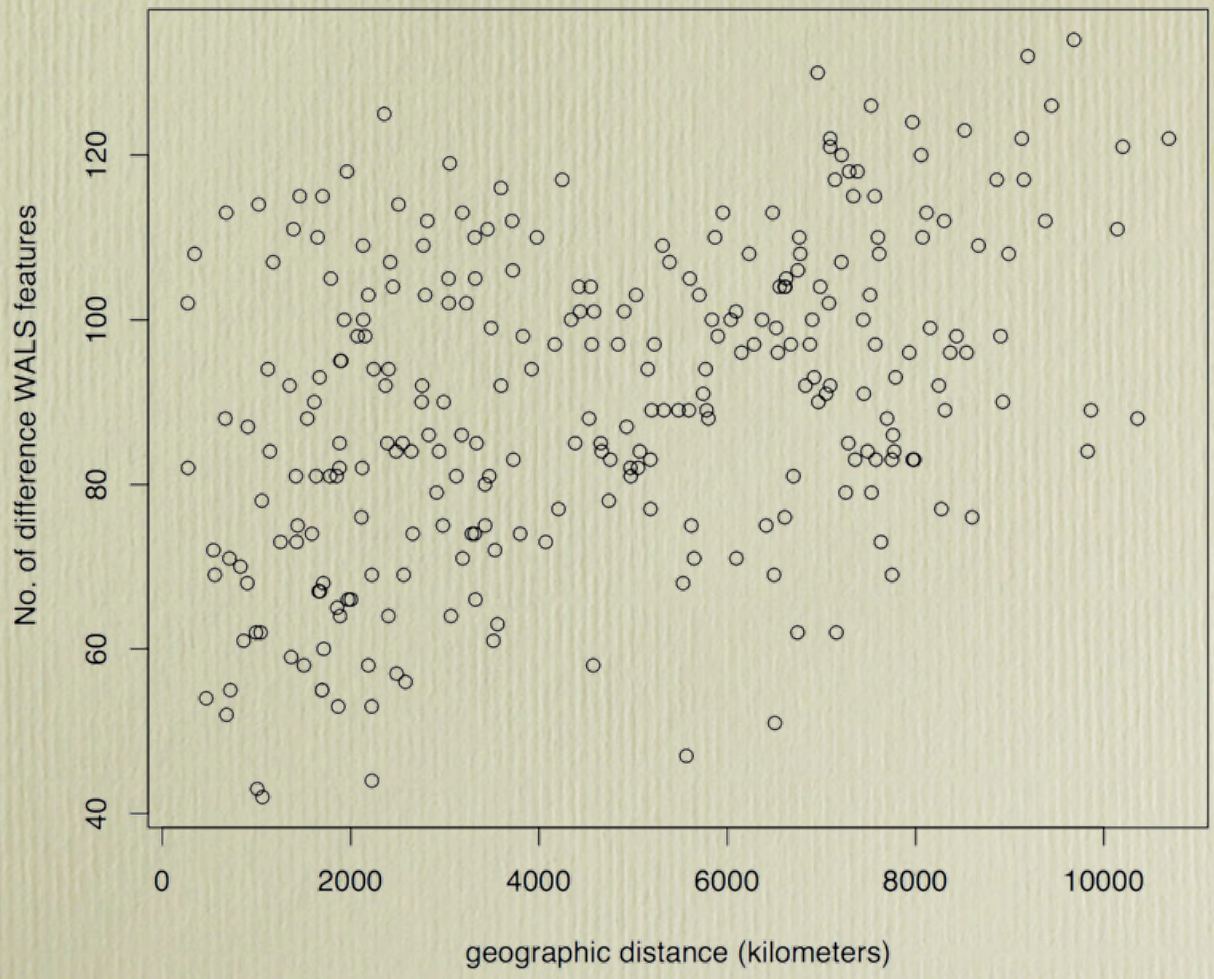


Remove 'worst-fitting' languages



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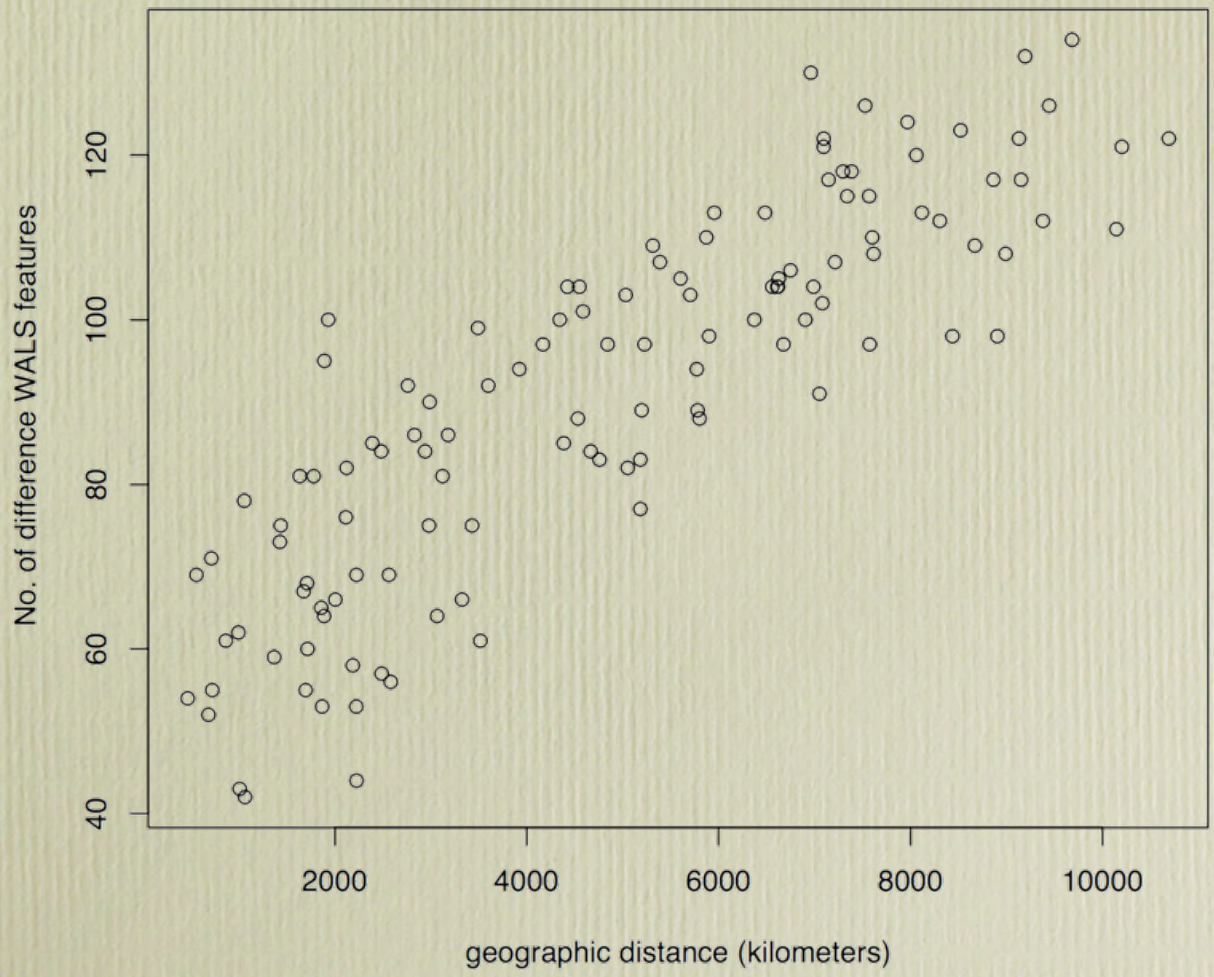

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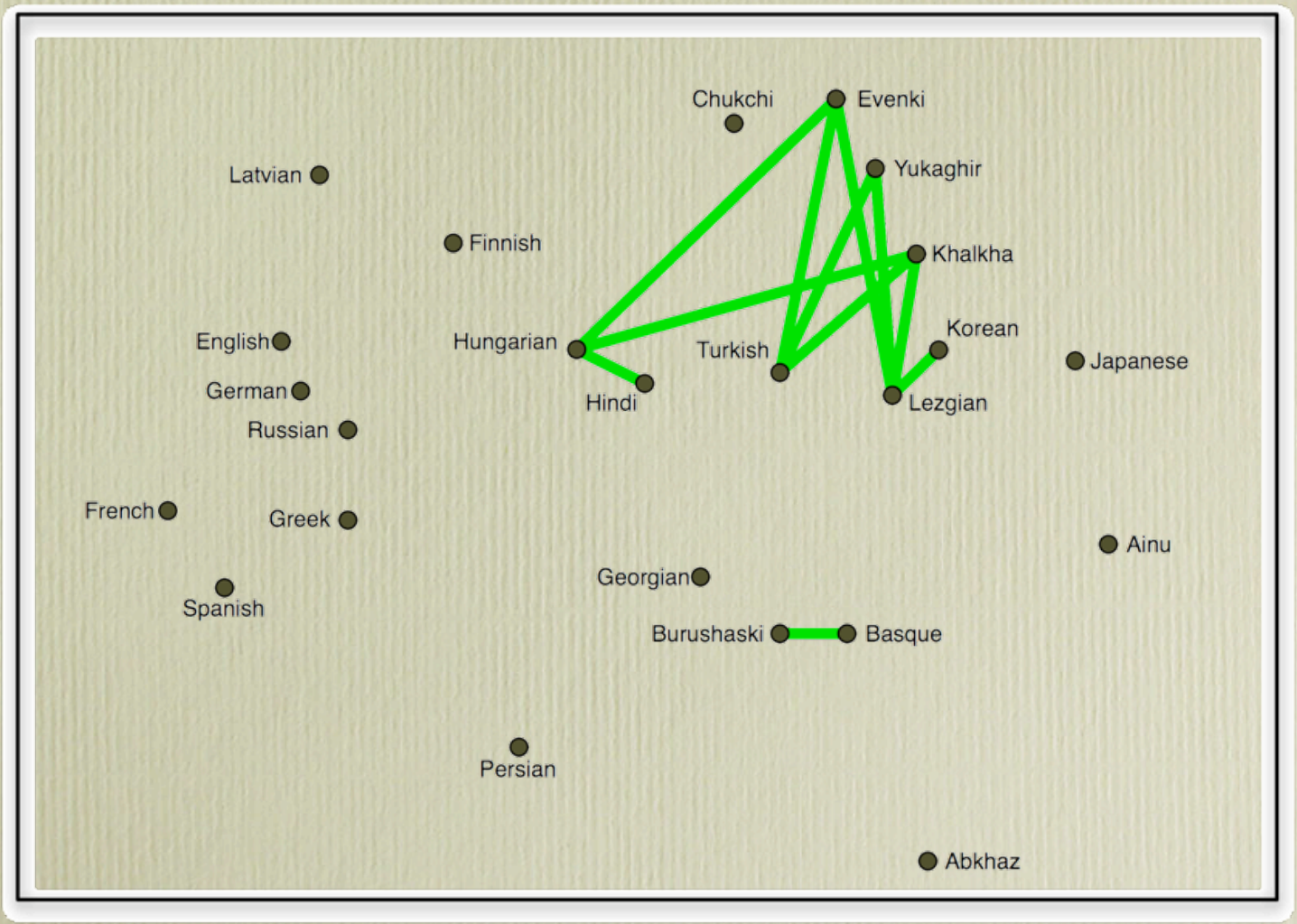

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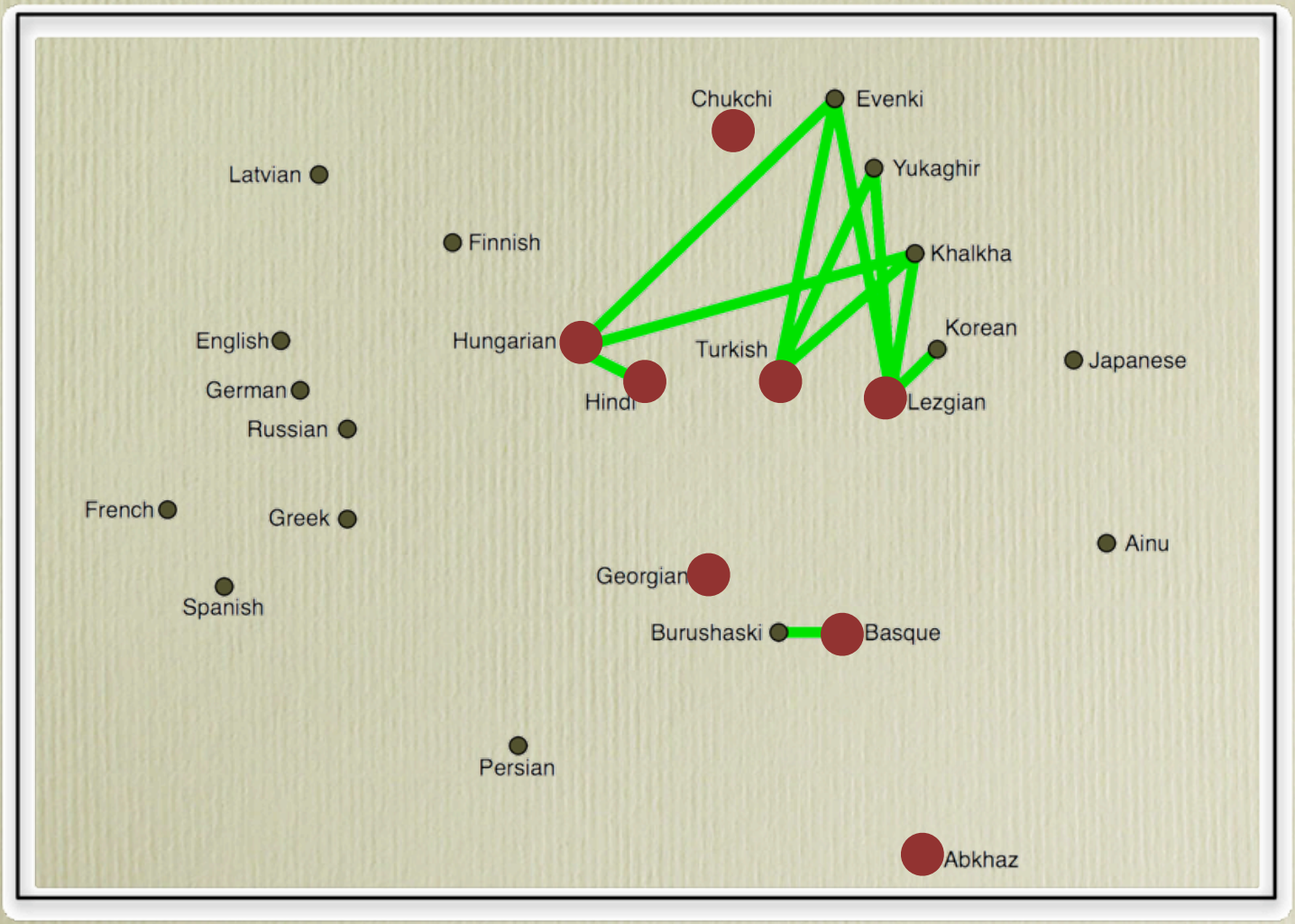

Some interpretation

- Turkish and Hungarian are cases of relatively recent movement of whole languages
- But Lezgian (probably) not
- Link Hindi-Hungarian is unclear, and Burushaski-Basque is too cranky a speculation
- Chukchi, Georgian, Abkhaz simply unrelated, both genealogical and areal

Summary

- Investigating language similarity by combining many different characteristics
- The interesting effects are found by looking at the relationship between
  - typological similarity
  - geographical similarity
  - genealogical similarity
- Mismatches between these are most informative

MAX-PLANCK-GESELLSCHAFT