

Historical linguistics and evolutionary framework

BEDLAN
BIOLOGICAL EVOLUTION AND DIVERSIFICATION OF LANGUAGES

Outi Vesakoski¹, Mervi de Heer², Terhi Honkola¹, Unni-Päivä Leino², Kalle Korhonen², Luke Maurits³, Timo Rantanen⁴, Michael Rießler², Jenni Santaharju¹, Kaj Syrjänen², Urho Määttä² & Niklas Wahlberg¹

Who are we?

BEDLAN research group consists of biologists¹, linguists², a modeller³ and a geographer⁴. We focus on linguistic variation, mechanisms of language divergence, and linguistic dispersion by applying frameworks and methods of evolutionary biology to data of Uralic languages, Finnic languages and Finnish dialects.

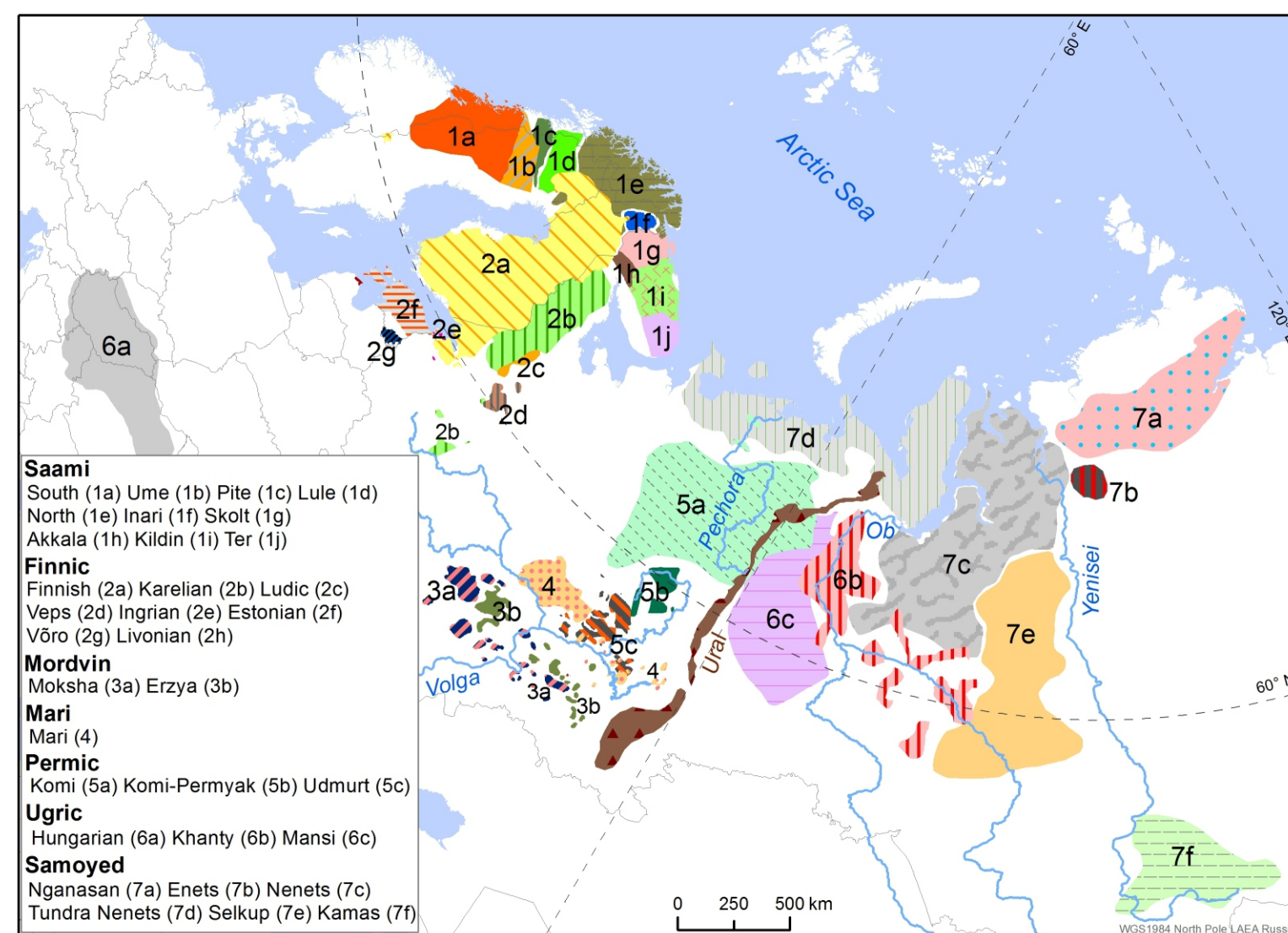


Fig. 1. Map of the Uralic languages.

	FISH		WATER		FISH	WATER
	SaaS	KomIZ	Fin	SaaS		
Homology type	guelie	čeri	vesi	tjaetsie		
<i>Proto-Uralic</i>	*kala	—	*weti	—	1	0
South Saami	guelie	—	—	tjaetsie	1	0
North Saami	guolli	—	—	čáhci	1	0
Kildin Saami	küll'	—	—	čäz'	1	0
Finnish	kala	—	vesi	—	1	0
Ingrian	kala	—	vezi	—	1	0
Votic	kana	—	vesi	—	1	0
Estonian	kala	—	vesi	—	1	0
Võro	kala	—	vesi	—	1	0
Livonian	kalā	—	vei' ž ~ ve' ž'	—	1	0
Komi-Zyrian	—	čeri	va	—	0	1

Table 1. Cognate coding (root-meaning forms) of basic vocabulary (stable meanings of vocabulary) - Swadesh 207 list - Leipzig-Jakarta meanings - 1-100 (more stable) - 401-500 (less stable)

1. Gathering and coding the data

Lexical and typological Uralic data; Atlas Linguarum Fennicarum (ALFE 2004, 2007, 2010); Dialect Atlas of Finland (Kettunen 1940)

2. Verifying the approach

Can we use biological methods with language data?
Do the results match with those of historical linguistics?

3. Finding methods for studying divergence mechanisms within and among languages

4. Testing divergence mechanisms

Microevolutionary processes with Finnish dialect data
Macroevolutionary processes with Uralic language data
Upcoming during AikaSyyni funding 2017–2020: linguistic dispersal models, landscape genetics approach

5. Prehistory of the Uralic languages

Combining results from different types of linguistic data and various approaches

6. Prehistory of the Uralic speaker populations

Combining language evolution with human genetics and archeology with e.g. SUGRIGE group

7. Prehistory of the world's languages

Combining data and results as well as divergence mechanisms and patterns from different language families with e.g. MPI for Sciences of Human History, Department of Linguistic and Cultural Evolution

8. Holistic prehistory of the world

Combining language evolution with human genetics and archeology

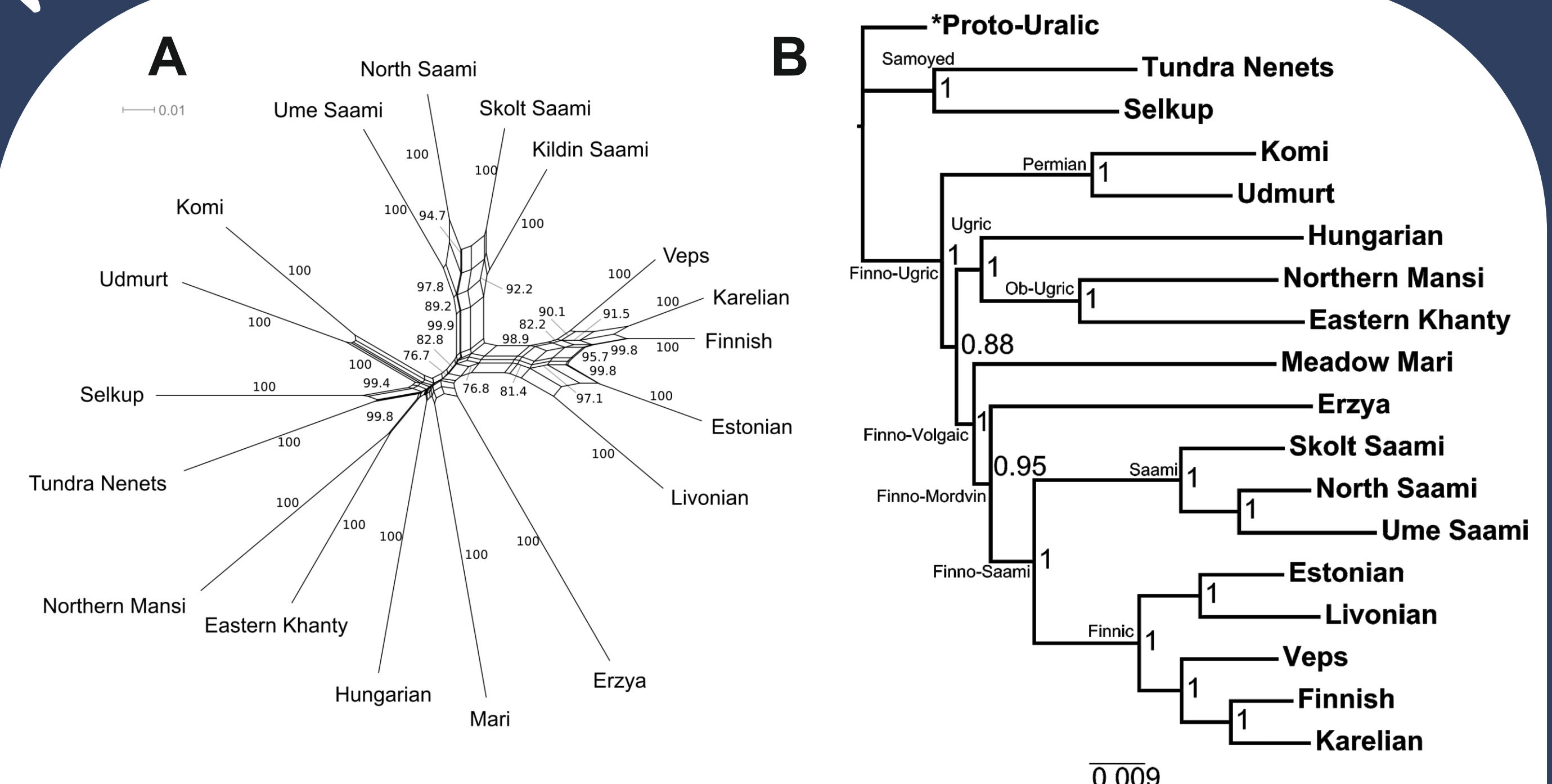


Fig. 2. A) 100 less stable meanings (WOLD401-500) by NeighborNet, Lehtinen et al. 2014. Language Dynamics and Change and B) 226 stable meanings by MrBayes, Syrjänen et al. 2013. Diachronica.

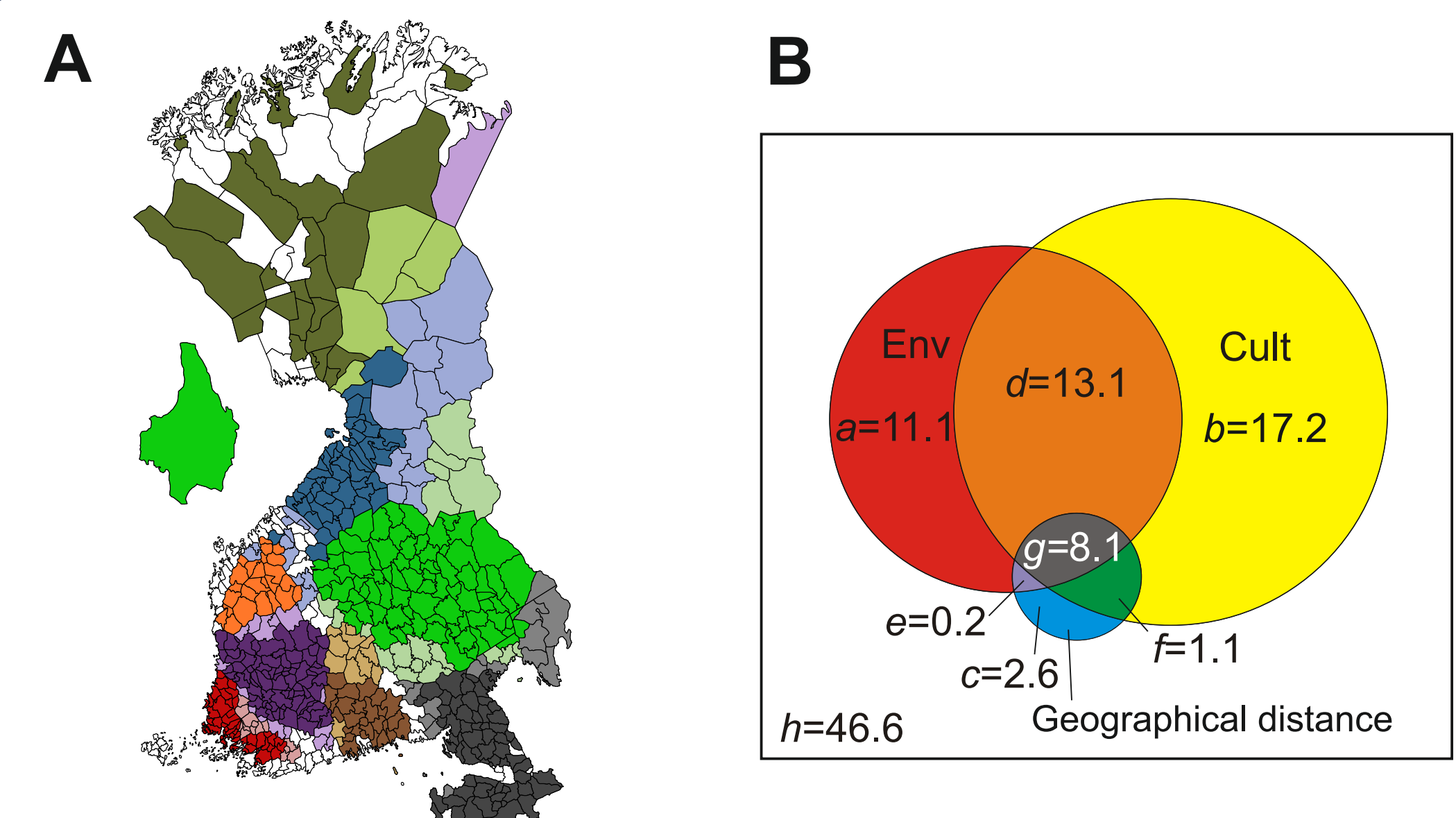


Fig. 3. A) 8 dialects of the Finnish language clustered with STRUCTURE, Syrjänen et al. 2016 LDC, B) Relative proportions of extralinguistic variables explaining dialect differences. Honkola et al. submitted.

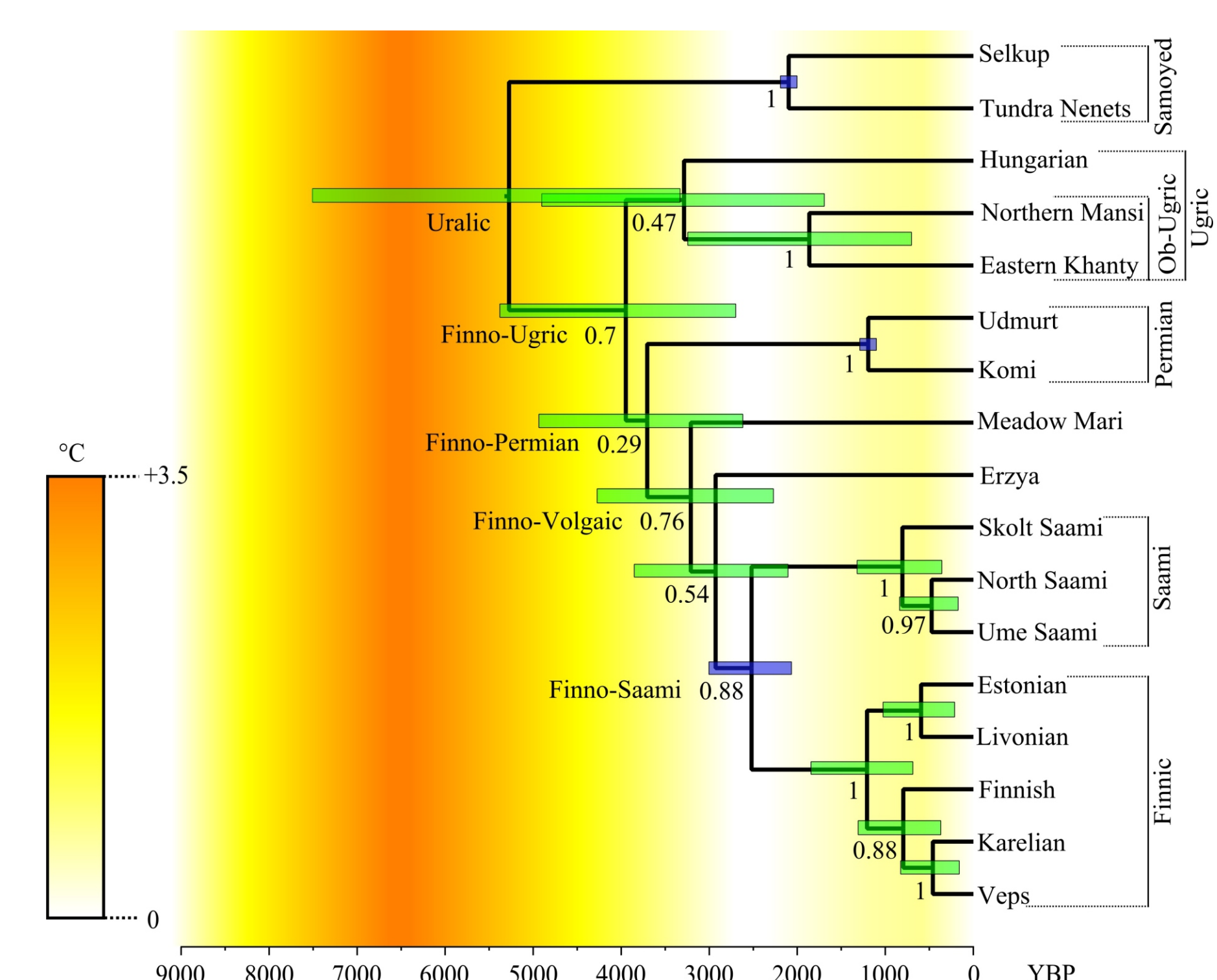


Fig. 4. Timing analysis with 100 most stable meanings in BEAST, compared with temperature fluctuation. Honkola et al. 2013. JEB.



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