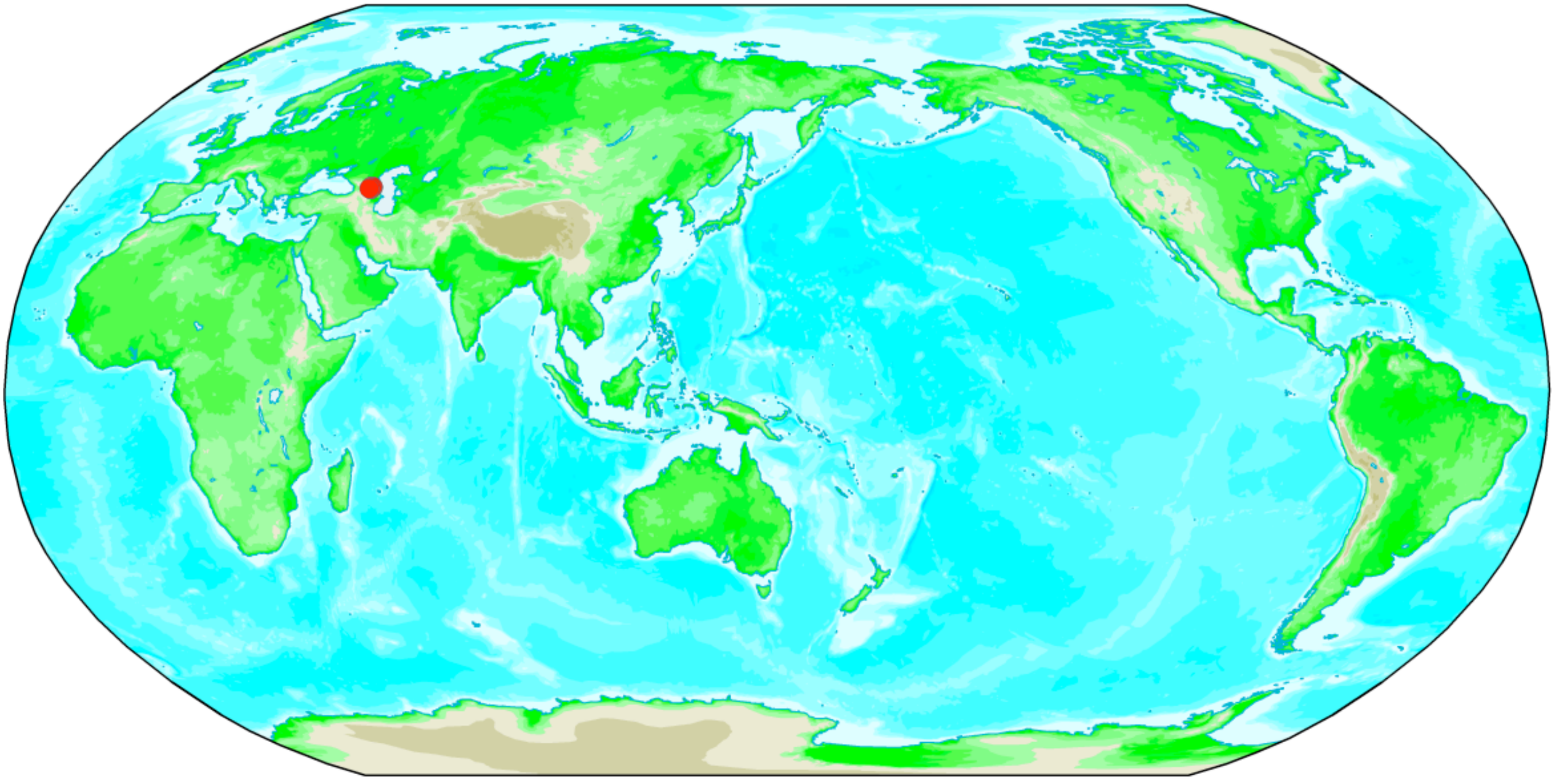
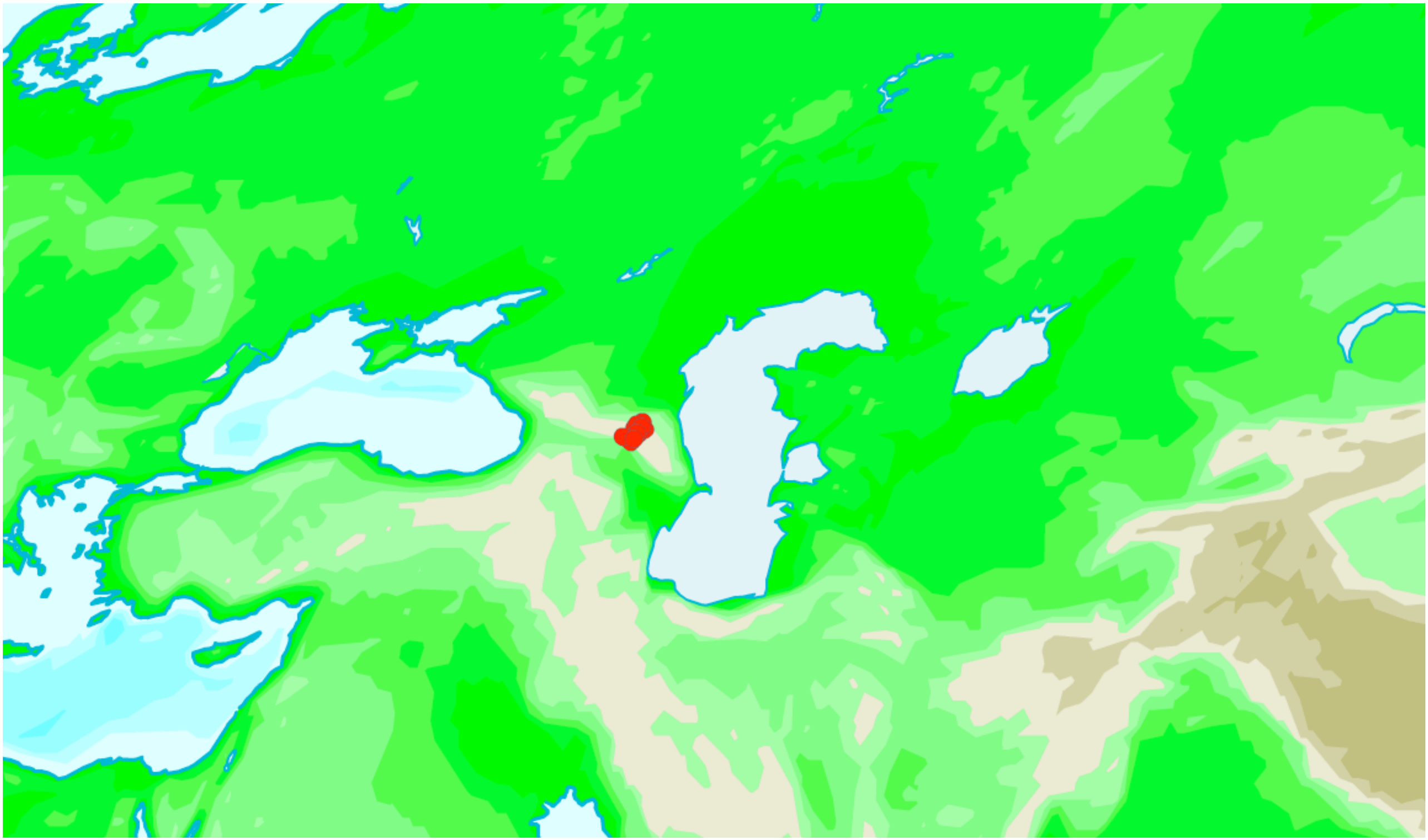
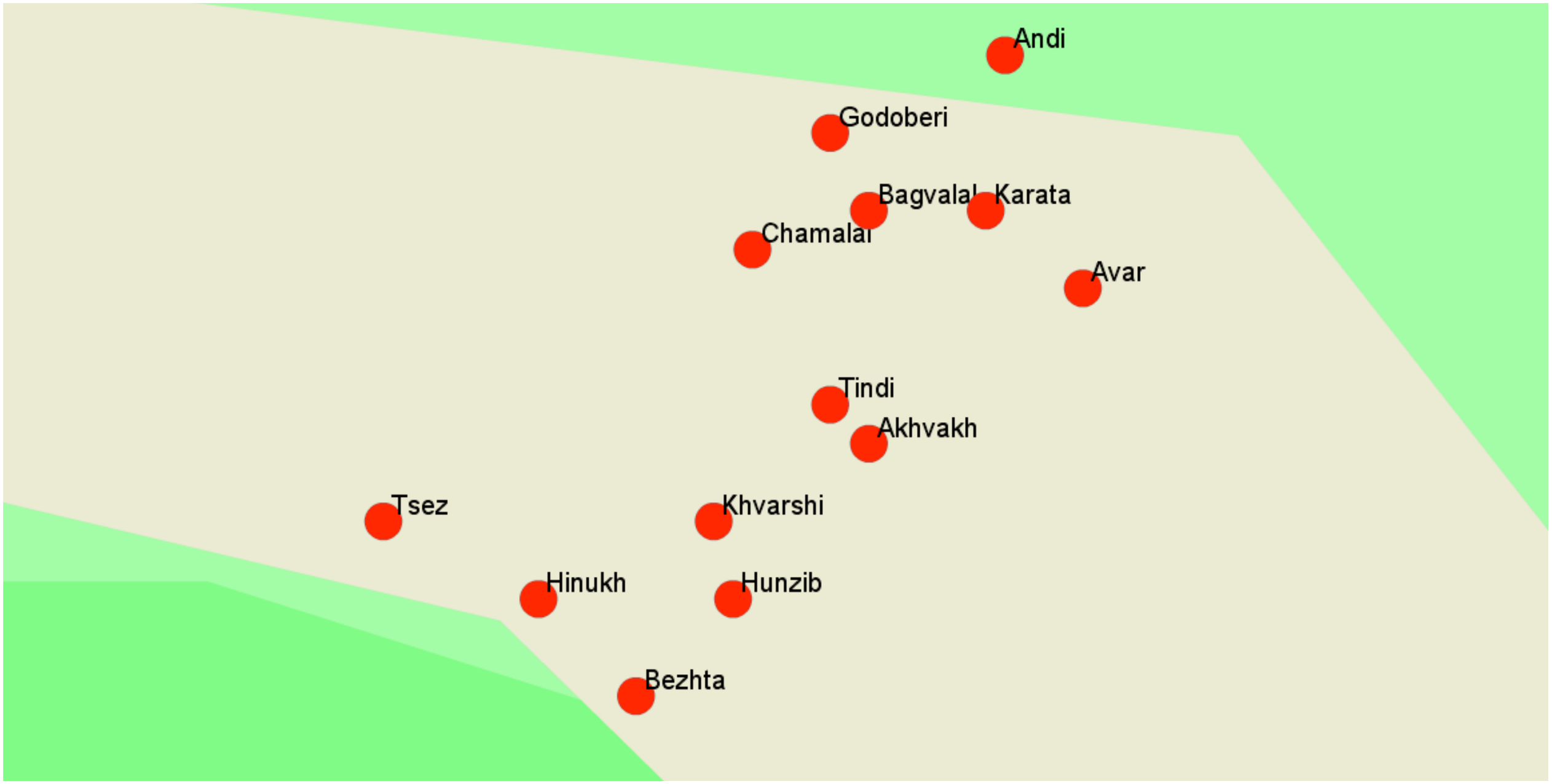
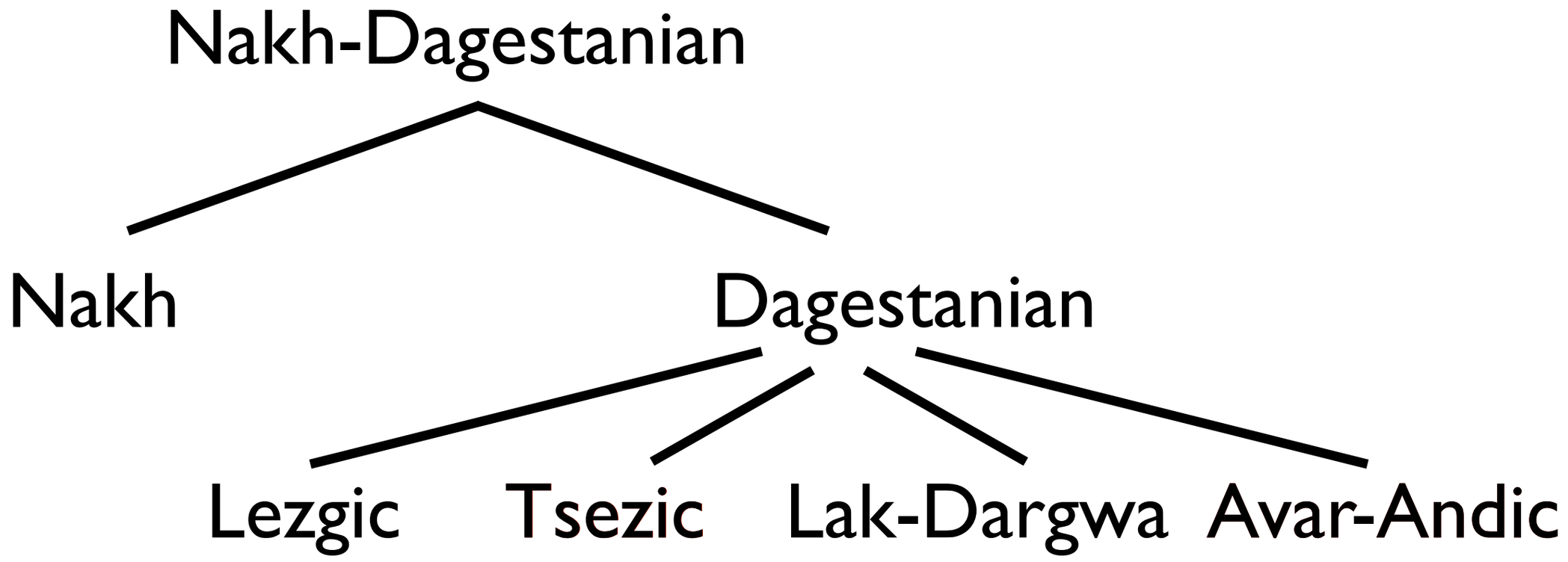
The distribution of glottalization in the languages of the Caucasus

Sven Grawunder & Michael Cysouw
Max Planck Institute for Evolutionary Anthropology, Leipzig






Andi
Godoberi
Bagvalal
Karata
Chamalal
Avar
Tindi
Akhvakh
Tsez
Khvarshi
Hinukh
Hunzib
Bezhta


Nakh-Dagestanian
Nakh
Dagestanian
Lezgic
Tsezic
Lak-Dargwa
Avar-Andic

Glottalisation in Bezhta

		bilabial	dental	alveolar	lateral	velar	uvular
Stops	voiced	b	d			g	
	voiceless	p	t			k	q
	glottalised	p’	t’			k’	q’
Affricates	voiceless		c	č	L		
	glottalised		c’	č’	L’		

Data

- Glottalised consonants in Intercontinental Dictionary Series (IDS), separated for:
  - kind of consonants (place, phonation, gemination)
  - position of consonant in word (initial, medial, final)
- Comparison with dictionaries for Tsez & Avar give almost identical results

http://lingweb.eva.mpg.de/ids

Characterisation of the "type" of a language

- Bezhta:

0-0-0-0-0-1-21-10-4-6-0-0-0-0-0-4-78-24-61-55-0-15-2-7-0-5-119-72-82-64

- Tsez:

0-0-0-0-0-2-23-16-5-2-0-0-0-0-0-3-88-18-56-37-0-2-0-0-0-4-111-45-48-85

How to deal with such "types" ?

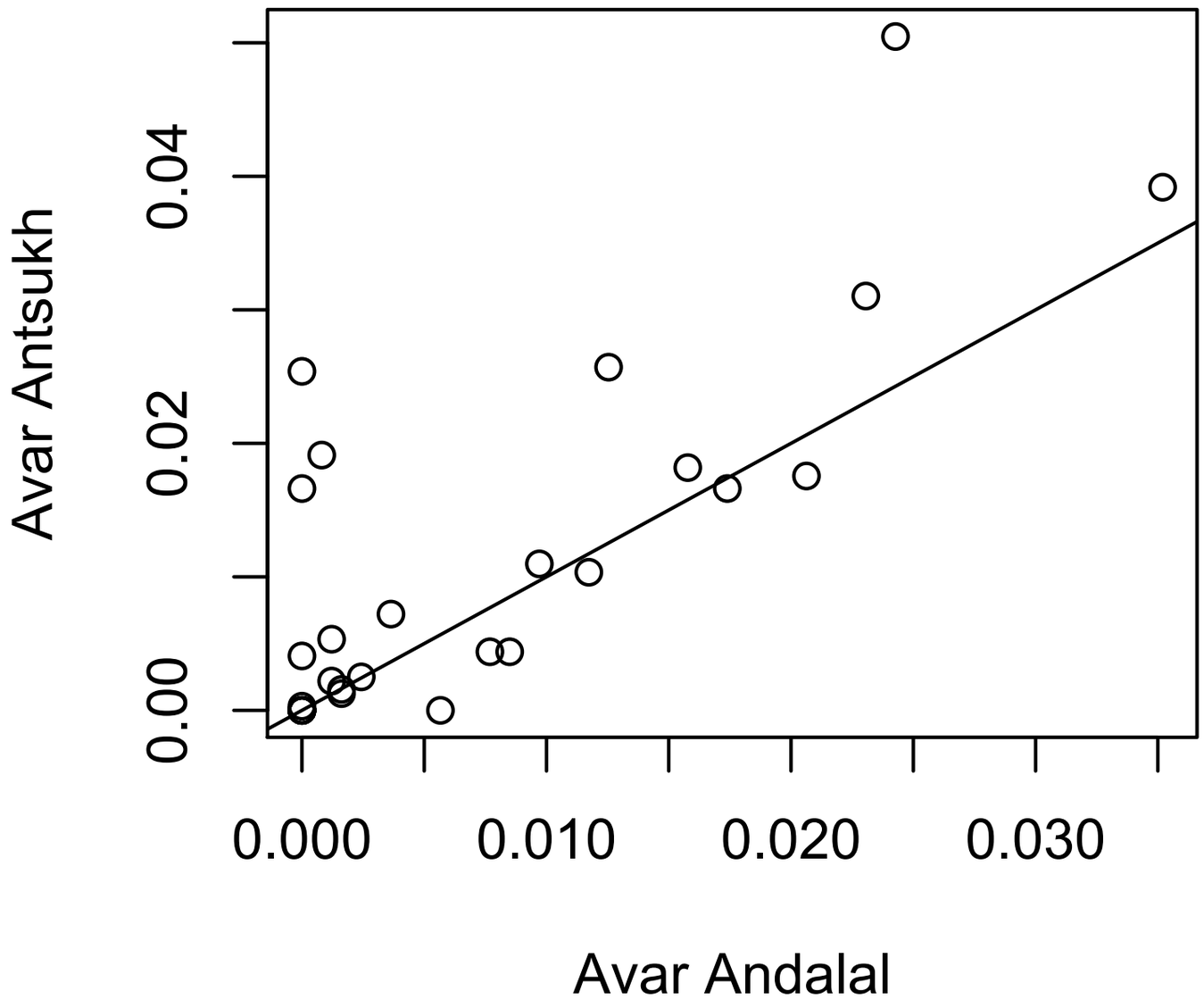
Typologizing languages

- Reduction A:
  Choose a crucial property to group languages into types
- Reduction B:
  Take a point estimator (e.g. the average)
- Do not reduce !

precentage of glottalised consonants

0.32
0.30
0.28
0.26
0.24
0.22
0.20

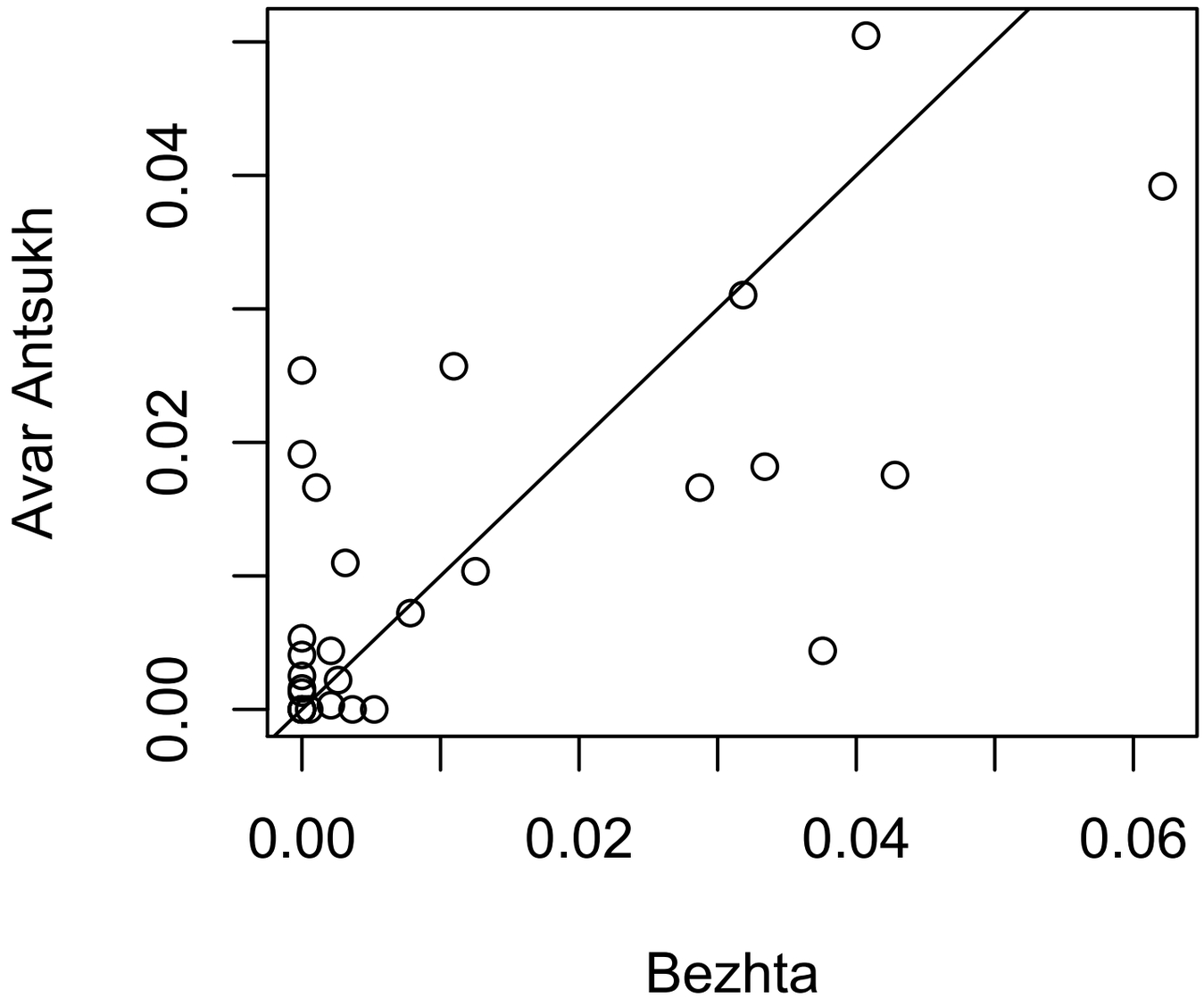
Bezhta
Avar Antsukh
Hunzib
Avar
Khvarshi
Inkhokvari
Akhvakh (Southern)
Tsez
Chamalal
Karata
Godoberi
Avar Andalal


Avar Antsukh
0.00
0.02
0.04
0.000
0.010
0.020
0.030
Avar Andalal

precentage of glottalised consonants

0.32
0.30
0.28
0.26
0.24
0.22
0.20

Bezhta
Avar Antsukh
Hunzib
Avar Khvarshi
Inkhokvari
Akhvakh (Southern)
Akhvakh (Northern)
Tsez
Chamalal
Karata
Godoberi
Avar Andalal


Avar Antsukh
0.00
0.02
0.04
0.00
0.02
0.04
0.06
Bezhta

Compare “types”

- Bezhta:

  0-0-0-0-0-1-21-10-4-6-0-0-0-0-0-4-78-24-6
  1-55-0-15-2-7-0-5-119-72-82-64

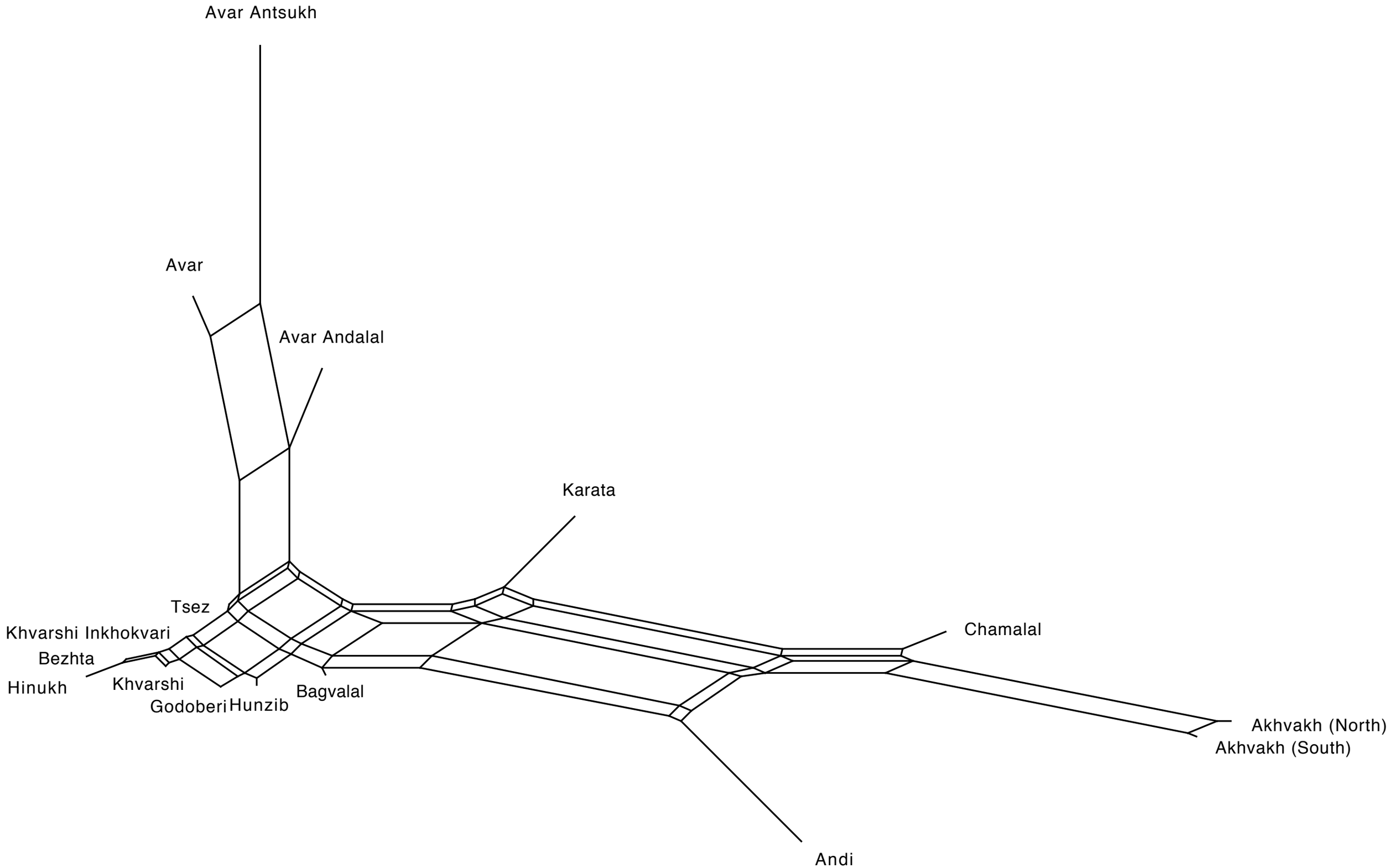
- Tsez:

  0-0-0-0-0-2-23-16-5-2-0-0-0-0-0-3-88-18-5
  6-37-0-2-0-0-0-4-111-45-48-85

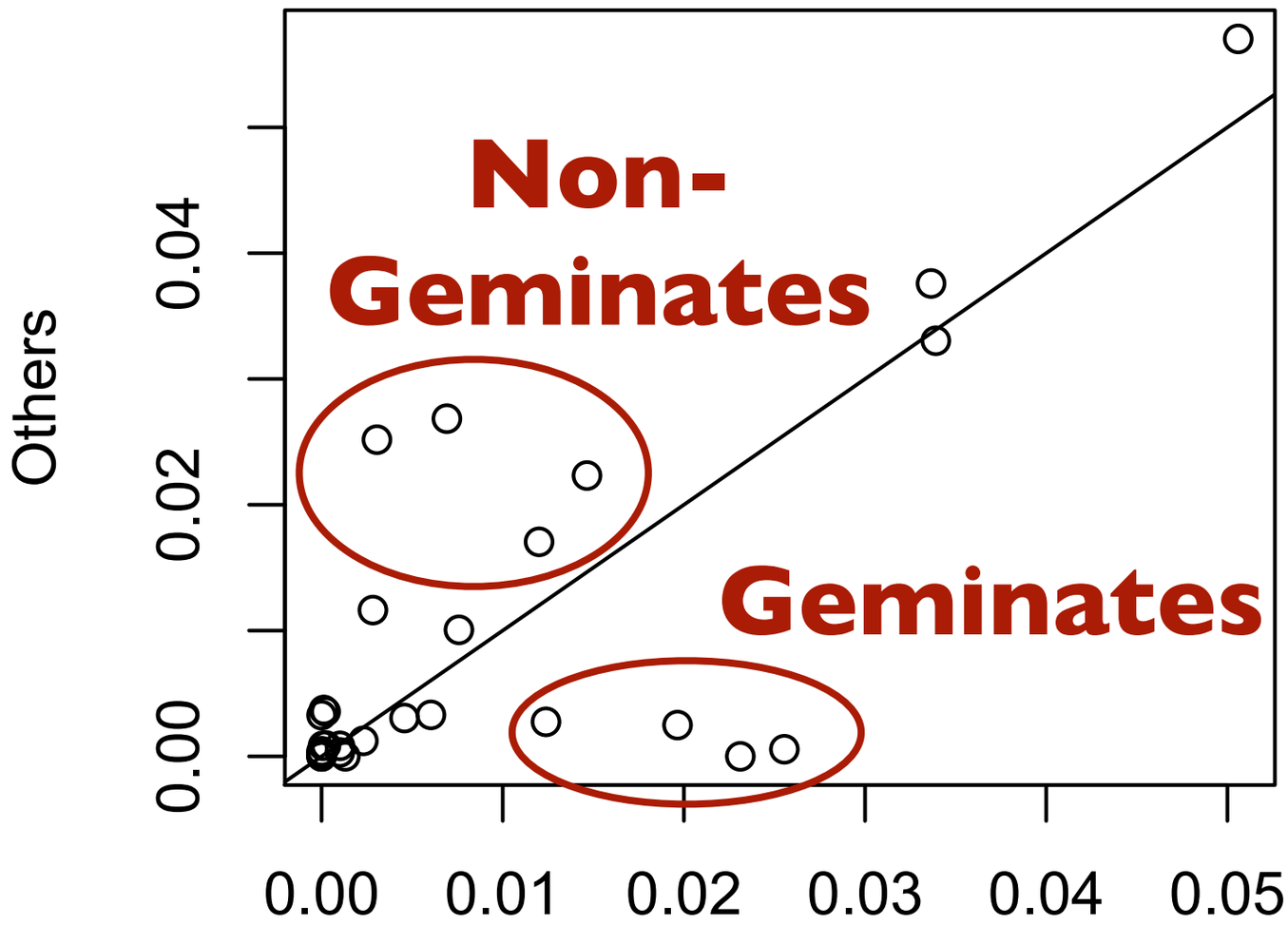
$r = 0.95$

Akhvakh (N)	0.00	0.02	0.27	0.53	0.48	0.55	0.37	0.44	0.15	0.38	0.45	0.37	0.40	0.28	0.42	0.37	0.40
Akhvakh (S)	0.02	0.00	0.27	0.51	0.44	0.49	0.38	0.41	0.15	0.37	0.43	0.38	0.39	0.33	0.40	0.38	0.39
Andi	0.27	0.27	0.00	0.40	0.47	0.31	0.21	0.28	0.18	0.24	0.28	0.25	0.26	0.26	0.26	0.21	0.24
Avar Andalal	0.53	0.51	0.40	0.00	0.21	0.10	0.11	0.07	0.40	0.11	0.11	0.11	0.08	0.26	0.10	0.11	0.08
Avar Antsukh	0.48	0.44	0.47	0.21	0.00	0.14	0.29	0.30	0.37	0.32	0.33	0.32	0.28	0.25	0.31	0.29	0.24
Avar	0.55	0.49	0.31	0.10	0.14	0.00	0.17	0.16	0.34	0.17	0.18	0.20	0.15	0.30	0.18	0.17	0.11
Bagvalal	0.37	0.38	0.21	0.11	0.29	0.17	0.00	0.10	0.19	0.05	0.11	0.04	0.06	0.15	0.06	0.00	0.04
Bezhta	0.44	0.41	0.28	0.07	0.30	0.16	0.10	0.00	0.38	0.04	0.01	0.05	0.02	0.20	0.02	0.10	0.05
Chamalal	0.15	0.15	0.18	0.40									0.31	0.24	0.34	0.19	0.26
Godoberi	0.38	0.37	0.24	0.11									0.02	0.16	0.03	0.05	0.05
Hinukh	0.45	0.43	0.28	0.11	0.33	0.18	0.11	0.01	0.39	0.03	0.00	0.08	0.03	0.23	0.02	0.11	0.07
Hunzib	0.37	0.38	0.25	0.11	0.32	0.20	0.04	0.05	0.26	0.04	0.08	0.00	0.02	0.13	0.03	0.04	0.02
Inkhokvari	0.40	0.39	0.26	0.08	0.28	0.15	0.06	0.02	0.31	0.02	0.03	0.02	0.00	0.15	0.01	0.06	0.02
Karata	0.28	0.33	0.26	0.26	0.25	0.30	0.15	0.20	0.24	0.16	0.23	0.13	0.15	0.00	0.17	0.15	0.15
Khvarshi	0.42	0.40	0.26	0.10	0.31	0.18	0.06	0.02	0.34	0.03	0.02	0.03	0.01	0.17	0.00	0.06	0.03
Tindi	0.37	0.38	0.21	0.11	0.29	0.17	0.00	0.10	0.19	0.05	0.11	0.04	0.06	0.15	0.06	0.00	0.04
Tsez	0.40	0.39	0.24	0.08	0.24	0.11	0.04	0.05	0.26	0.05	0.07	0.02	0.02	0.15	0.03	0.04	0.00

Typology without types


Avar Antsukh
Avar
Avar Andalal
Karata
Tsez
Khvarshi Inkhokvari
Bezhta
Hinukh
Khvarshi
Godoberi
Hunzib
Bagvalal
Chamalal
Akhvakh (North)
Akhvakh (South)
Andi

laterals and uvulars
(in initial/medial position)



organizing linguistic differences

- Include as much as detail as possible in the collection of the data
- Do not reduce this detailed data to make the typology
- Change of perspective from characterizing individual languages to characterizing pairs of languages