The speakers of minority languages **are more multilingual**

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Typology of small-scale multilingualism

Laboratoire Dynamique du Langage, Lyon, France

Presentation is available here: **tinyurl.com/y6jjp38y**

Multilingualism in Daghestan

The Republic of Daghestan is an area of high language density and diversity.

- three language families (the estimated number of languages ranges from 30 to 45):
  - East Caucasian (Nakh-Daghestanian),
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- linguae francae: **Avar**, **Azeri**, **Kumyk**, **Russian** (in XX century)

Multilingualism in Daghestan

- More than forty languages spoken in Daghestan
- Widespread multilingualism
- Multilingual repertoires were village specific:
  - each village had its own set of second languages
  - occasional knowledge of additional languages was rare
- Multilingualism was distributed unevenly across villages – some were very higly multilingual, some were almost monolingual

Problem setting

Question:

What influences the richness of language repertoire?

Hypothesis:

The number of speakers plays a role
("Numbers count: a larger culture is likely to be a dominant culture"
– [Thomason 2001: 6]

The aim

To test quantitatively whether the size of language group influences the number of languages they speak

Our data

Data obtained during interviews on language usage from about 15 fieldtrips (see [Dobrushina 2013] for methodology details) and collected into **Atlas of Multilingualism in Daghestan** [Dobrushina et al. 2017]:

- field trips to 17 clusters of villages (2 to 4 villages per cluster); totality of 54 villages
- 24 languages (Russian excluded)

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- 3210 people born between 1900 and 1959
  - 1564 females (48.7%)
  - 1646 males (51.3%)
- variable containing the number of second languages spoken by each speaker

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- 3210 people born between 1900 and 1959
  - 1564 females (48.7%)
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- variable containing the number of second languages spoken by each speaker
- we grouped all languages into three categories according to the number of speakers at the present time
  - **big** — 100 000 speakers and more
  - **medium** — 10 000–30 000 speakers
  - **small** — one village languages, 1 000–2 000 speakers

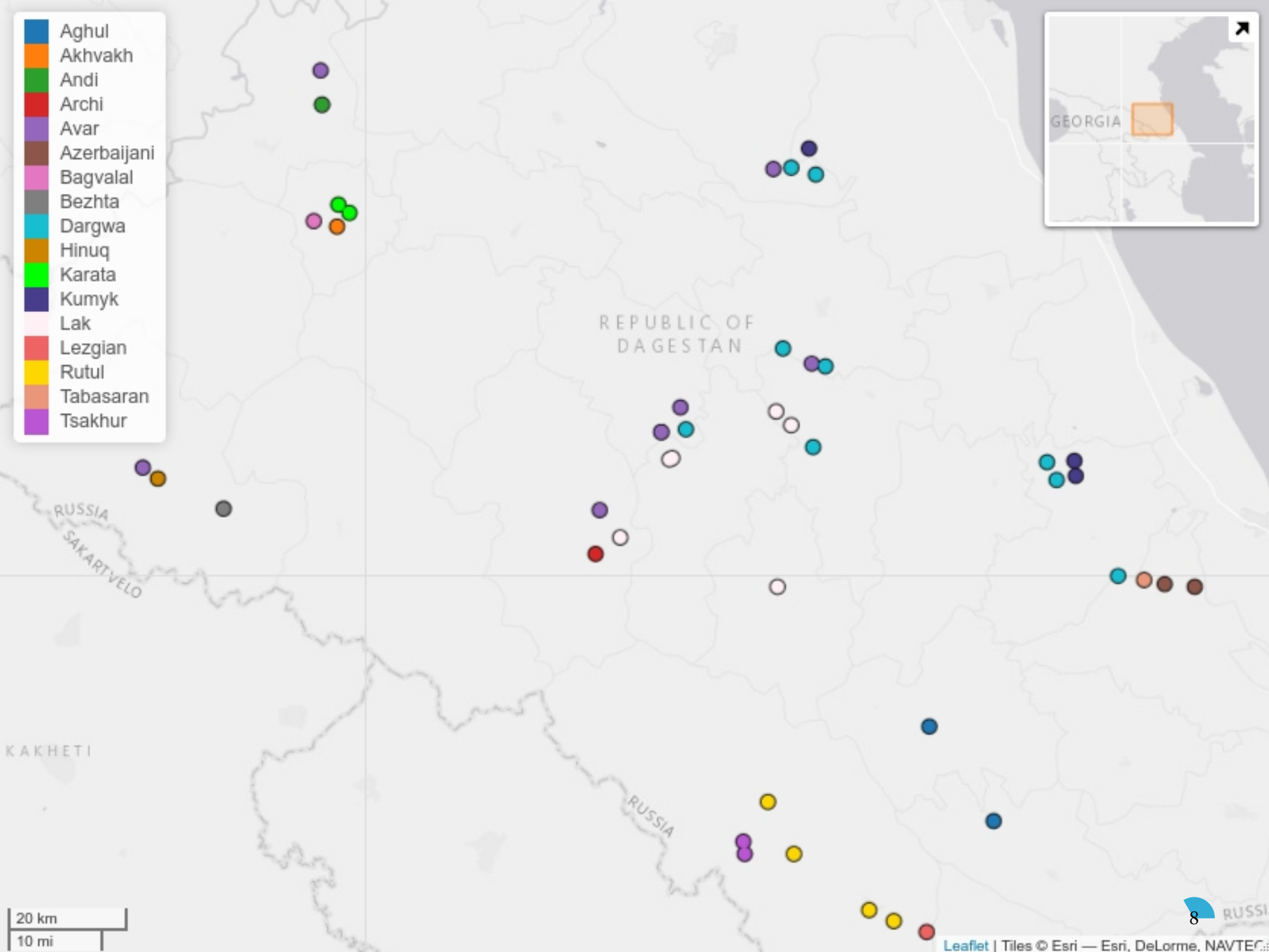
Retrospective family interviews, [Dobrushina 2013]

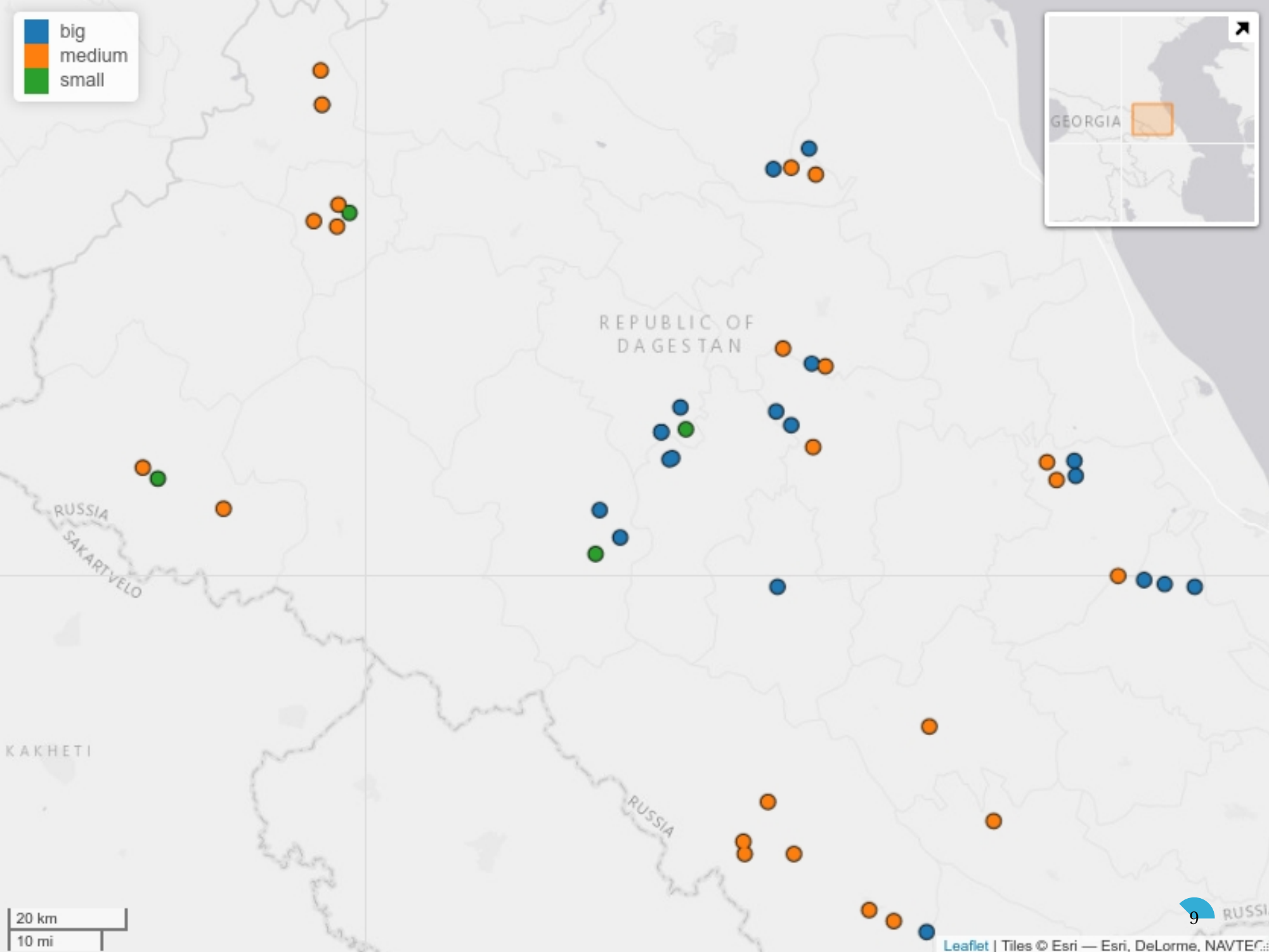
- Rate of bilingualism at the community level is taken to be a proxy for the intensity of language contact
- Short interviews about language repertoire of locals are taken
- The respondent reports the data not only about himself but also about all his elder relatives whom ((s)he thinks) (s)he remembers

Name	Akaj
Born in	Chabanmakhi
The interviewer was talking to	Umaidat
Family relation to the respondent	Father of Umaidat
Years of birth and death	1900 - 1973
Native language	Kadar Dargwa
Education and living outside the village	worked as a mason, also in other villages
Did he read the Koran?	Yes, could not translate
Did he speak Avar?	yes
Did he speak Kumyk?	yes
Did he speak Russian?	yes
Did he speak any other languages?	no
Literate in	Arabic, Cyrillic

Why retrospective?

- From the establishment of Soviet schools in the 1930s, Russian quickly spread over Daghestan as L2
- Traditional patterns of language contact have been almost completely substituted by Russian as a lingua franca


Aghul
Akhvakh
Andi
Archi
Avar
Azerbaijani
Bagvalal
Bezhta
Dargwa
Hinuq
Karata
Kumyk
Lak
Lezgian
Rutul
Tabasaran
Tsakhur
GEORGIA
REPUBLIC OF DAGESTAN
RUSSIA
SAKARTVELO
KAKHETI
RUSSIA
20 km
10 mi
Leaflet | Tiles © Esri — Esri, DeLorme, NAVTEQ


big
medium
small
GEORGIA
REPUBLIC OF
DAGESTAN
RUSSIA
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20 km
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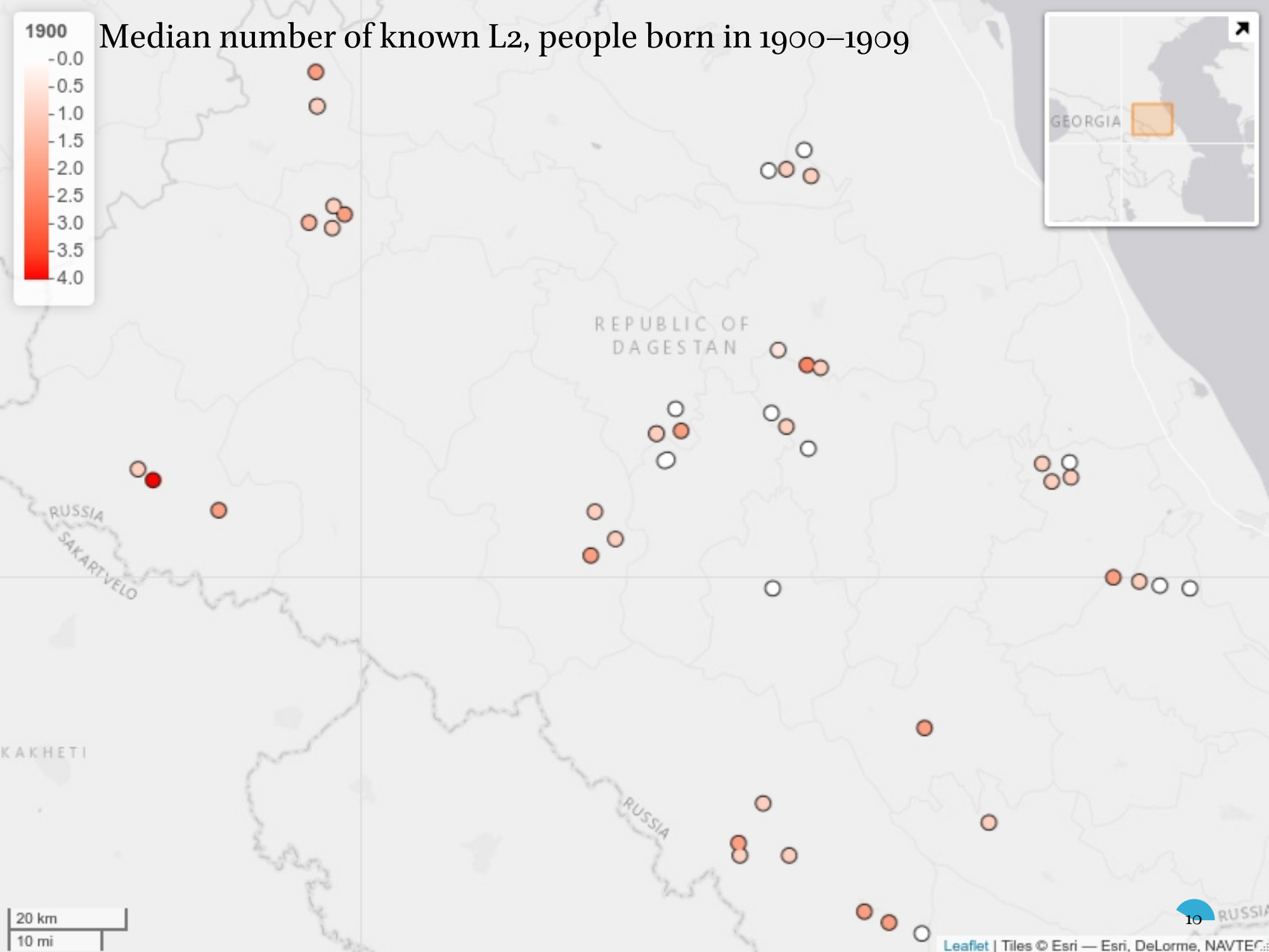
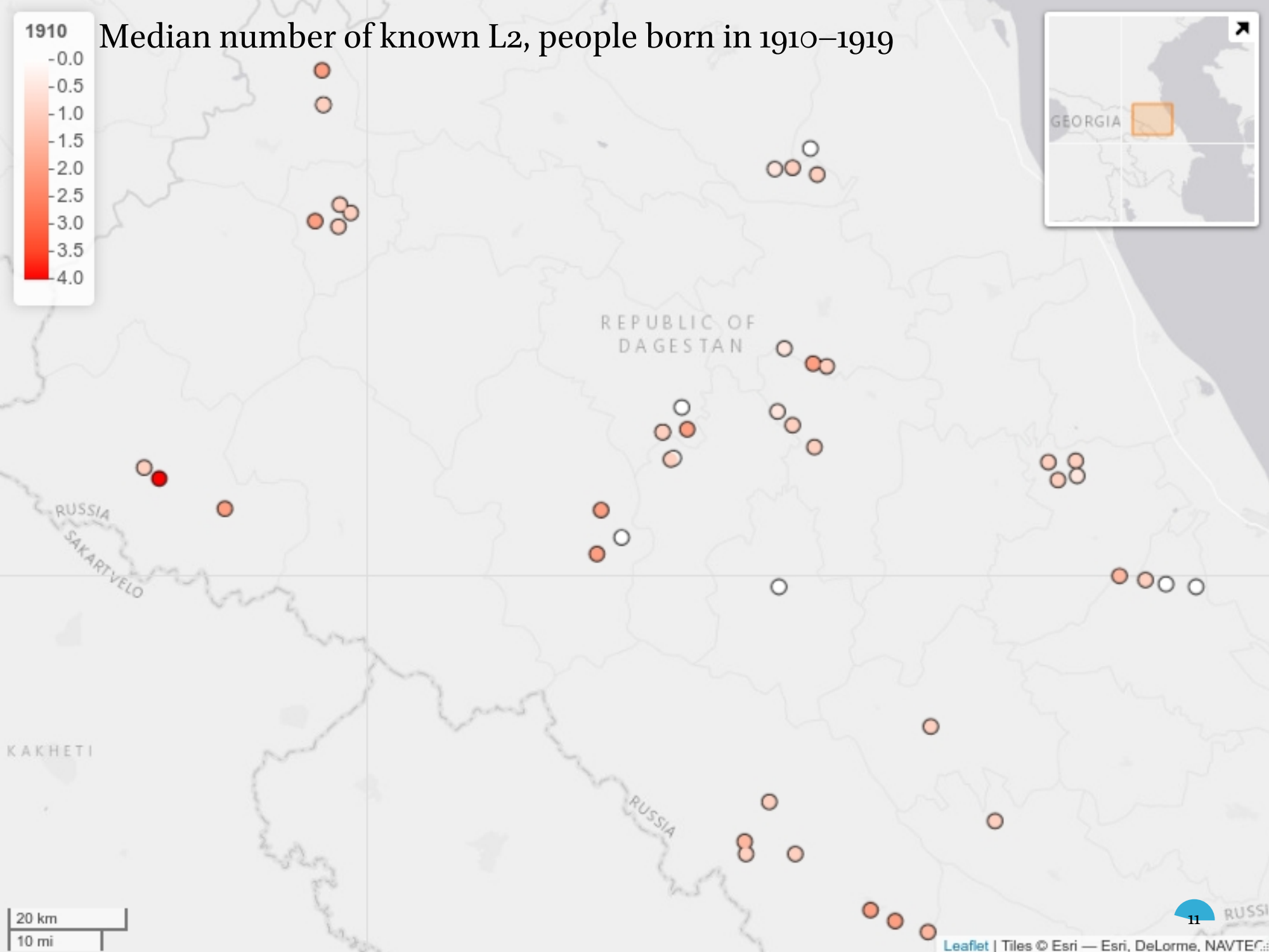
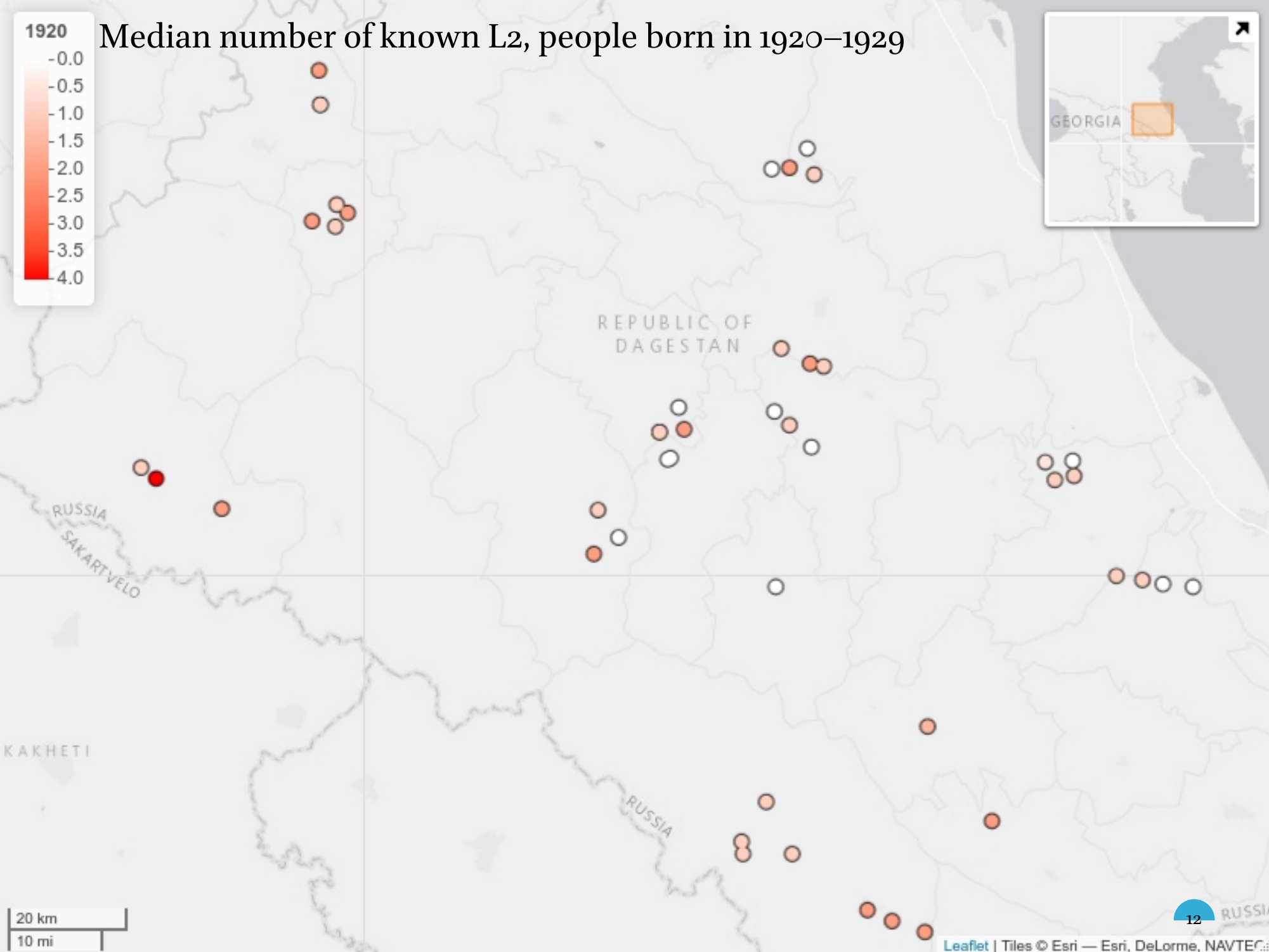

1900
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Median number of known L2, people born in 1900–1909
GEORGIA
REPUBLIC OF DAGESTAN
RUSSIA
SAKARTVELO
KAKHETI
RUSSIA
20 km
10 mi
Leaflet | Tiles © Esri — Esri, DeLorme, NAVTEQ


1910
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Median number of known L2, people born in 1910–1919
GEORGIA
REPUBLIC OF DAGESTAN
RUSSIA
SAKARTVELO
KAKHETI
RUSSIA
20 km
10 mi
Leaflet | Tiles © Esri — Esri, DeLorme, NAVTEQ


1920
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Median number of known L2, people born in 1920–1929
GEORGIA
REPUBLIC OF DAGESTAN
RUSSIA
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RUSSIA
20 km
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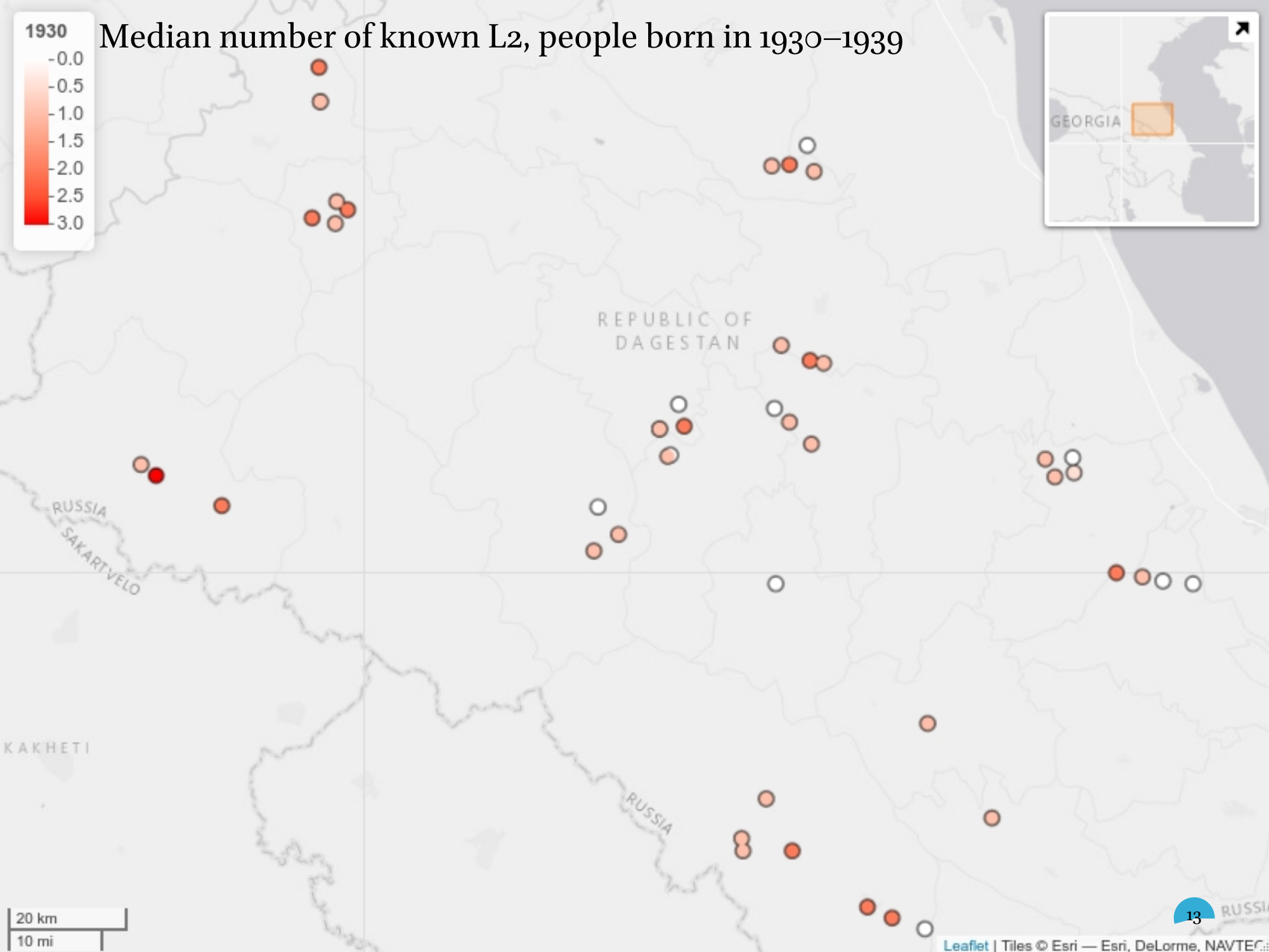
1930
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Median number of known L2, people born in 1930–1939
GEORGIA
REPUBLIC OF DAGESTAN
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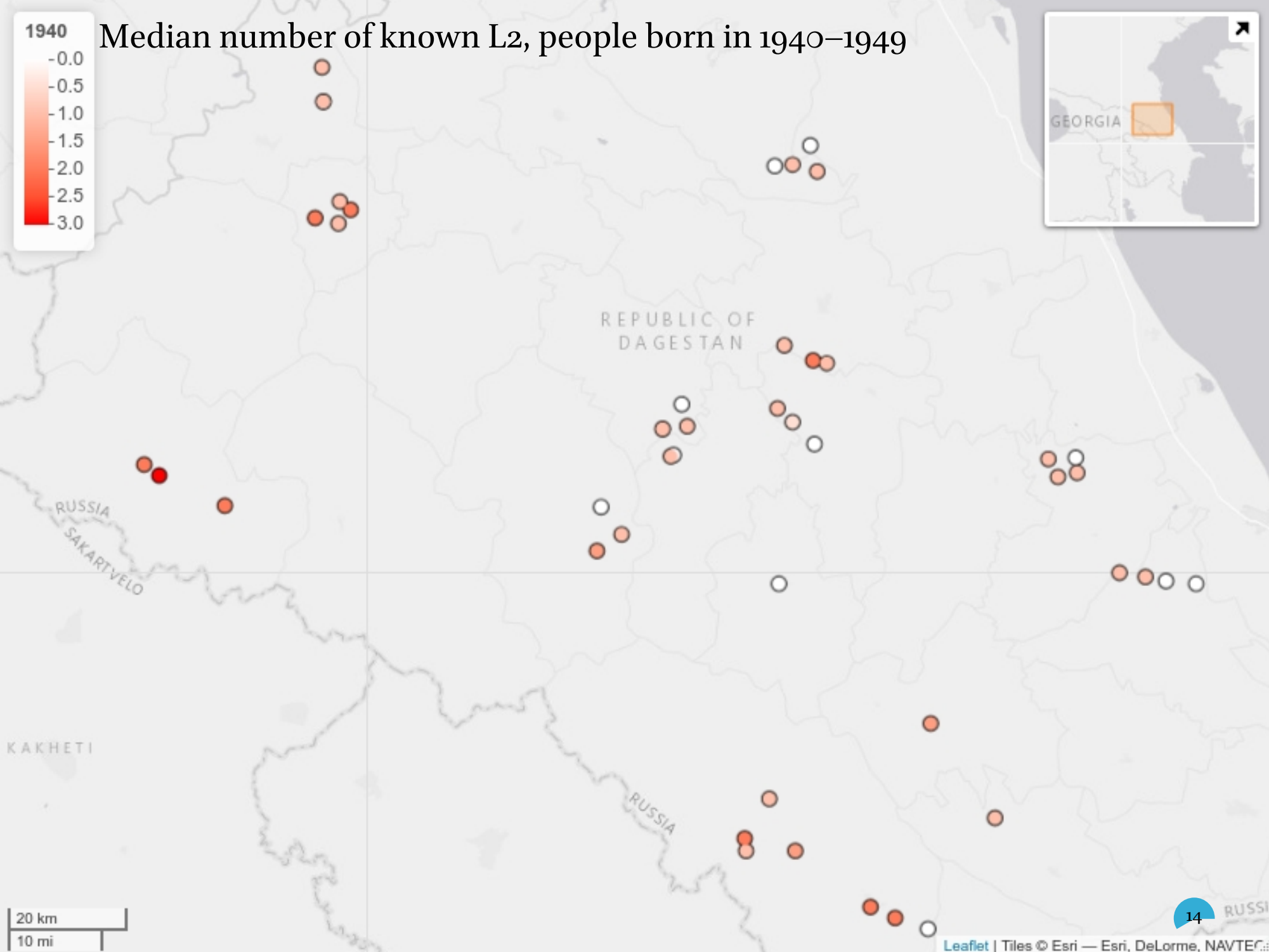
1940
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Median number of known L2, people born in 1940–1949
GEORGIA
REPUBLIC OF DAGESTAN
RUSSIA
SAKARTVELO
KAKHETI
RUSSIA
20 km
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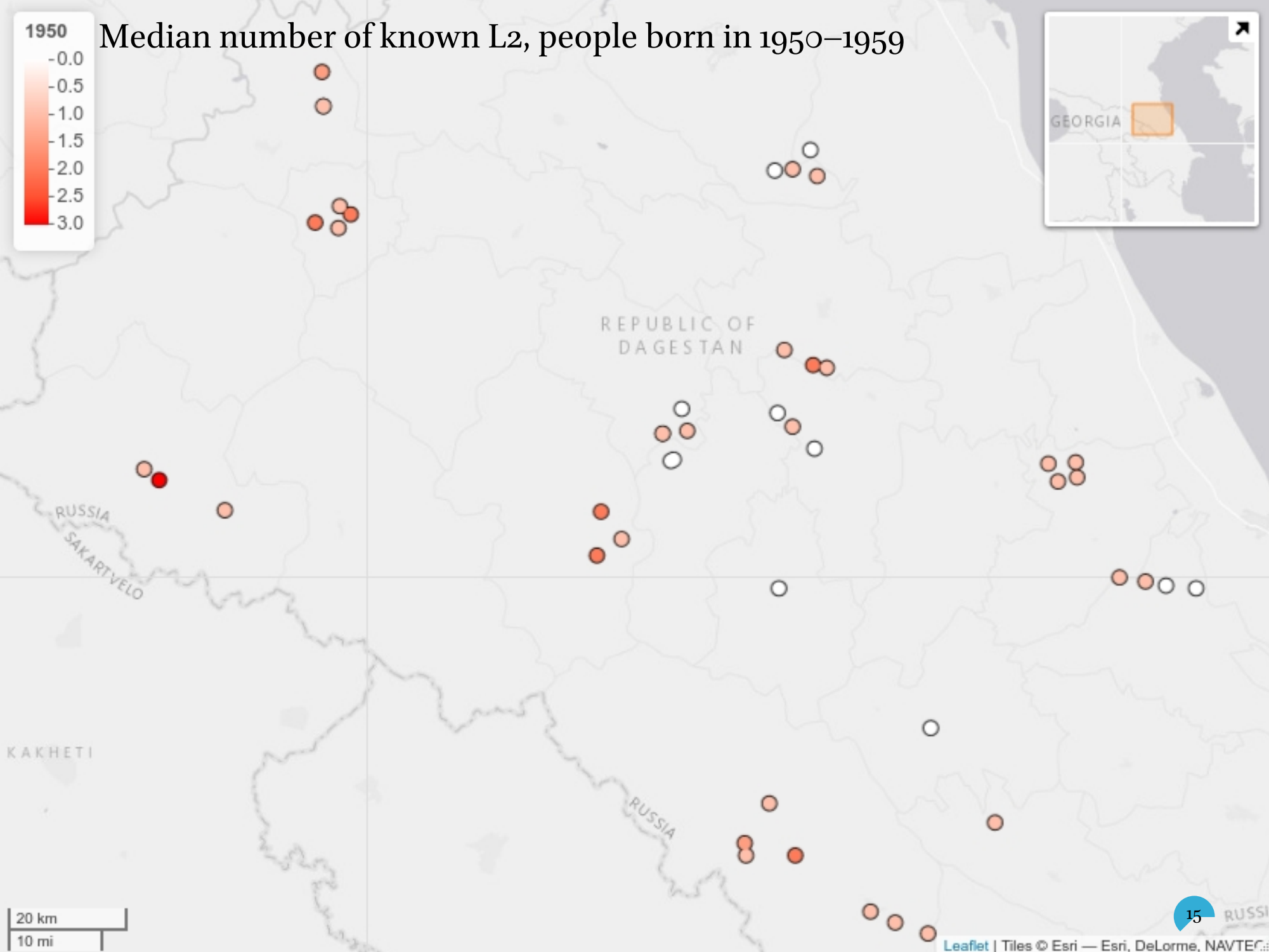
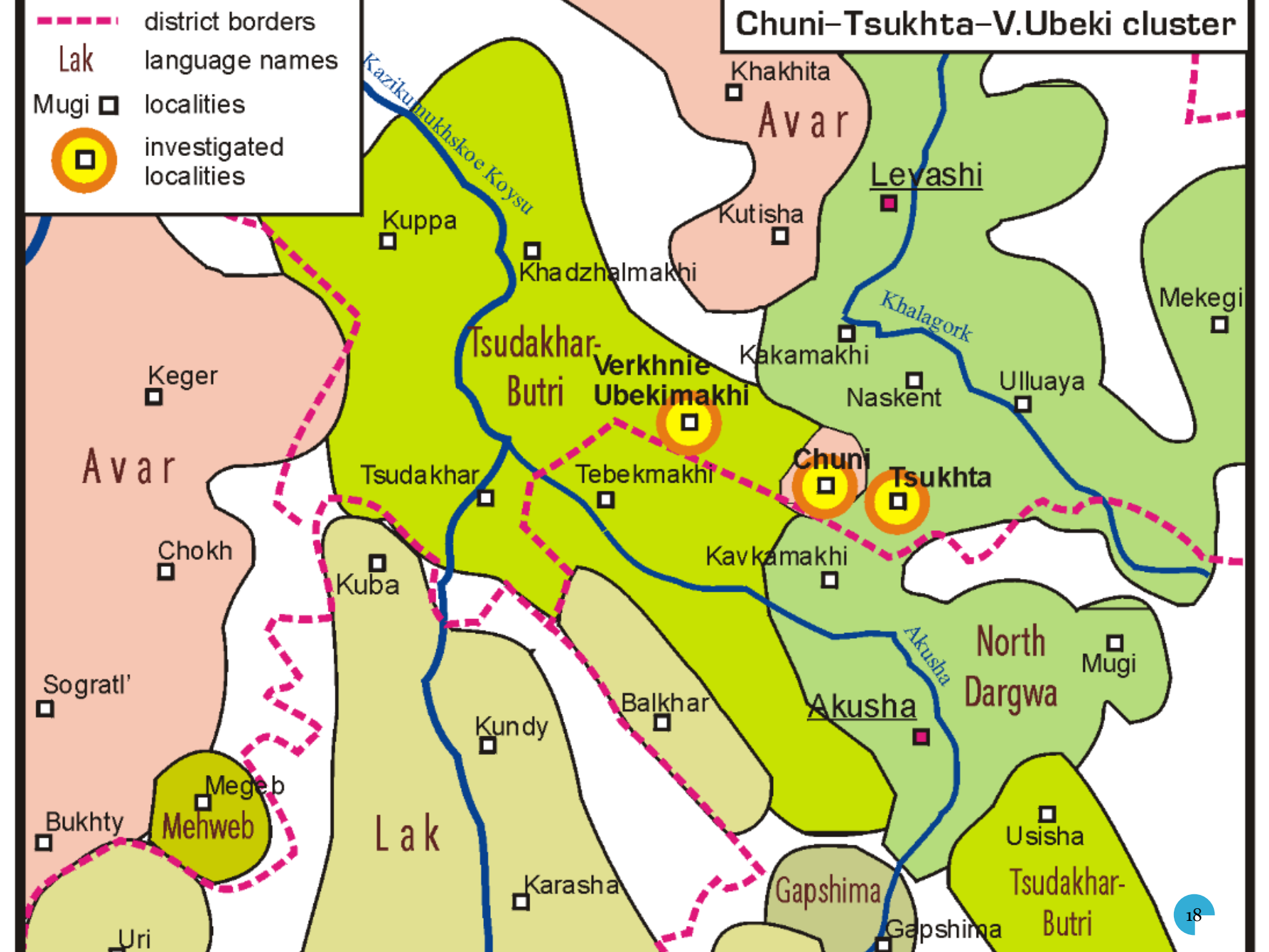

1950
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Median number of known L2, people born in 1950–1959
GEORGIA
REPUBLIC OF DAGESTAN
RUSSIA
SAKARTVELO
KAKHETI
RUSSIA
20 km
10 mi
Leaflet | Tiles © Esri — Esri, DeLorme, NAVTEQ

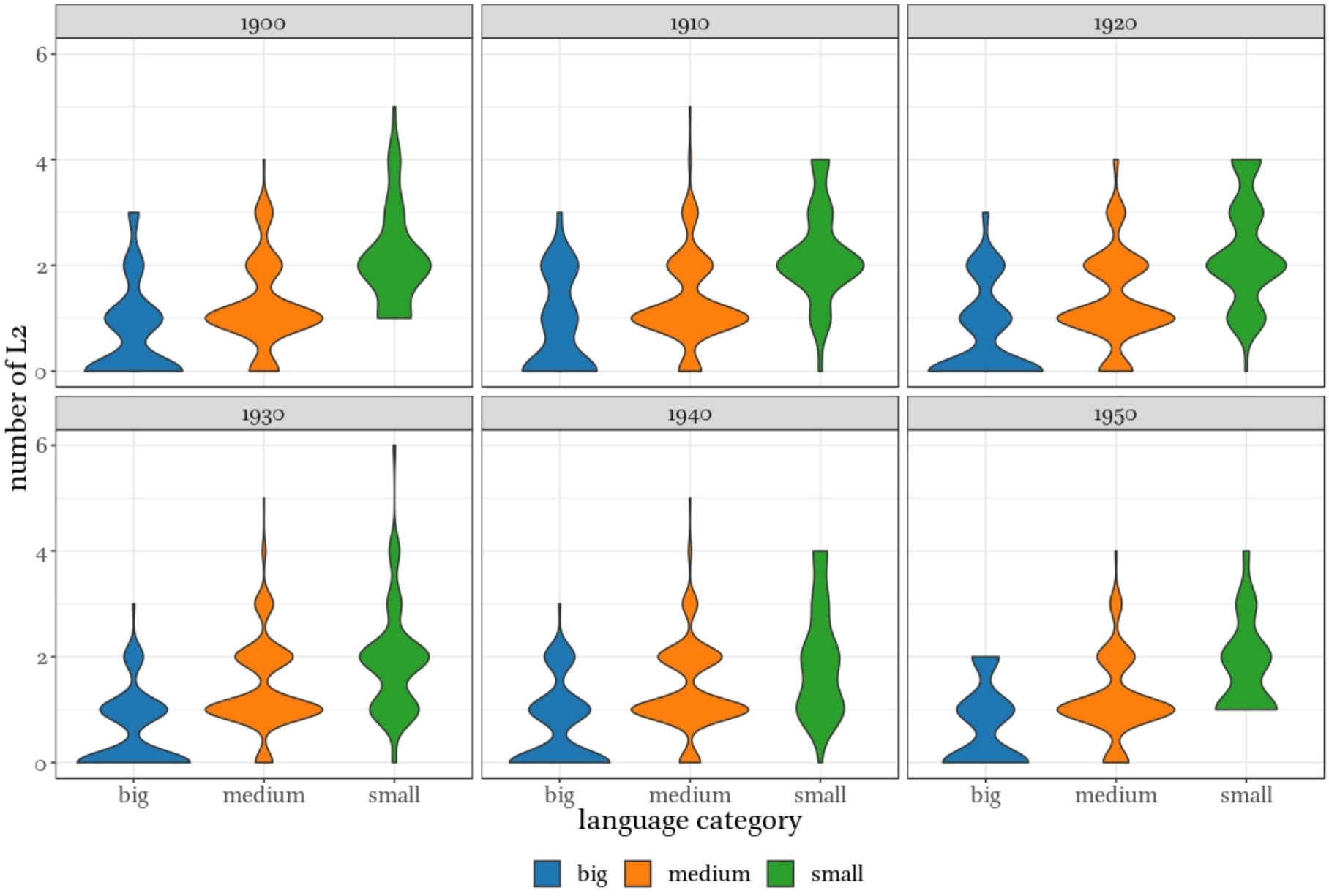

big Balkhar
big Chitab
big Chuni
big Darvag
big Dorgeli
big Durangi
big Dyubek
big Ersi
big Khlyut
big Kizhani
big Kuli
big Mukar
big Obokh
big Shalib
big Shangoda
big Tsulikana
big Tumenler
big Uri
big Yangikent
medium Bezhta
medium Burkikhan
medium Chabanmakhi
medium Chankurbe
medium Chumli
medium Dzhavgat
medium Gel'mets
medium Ikhrek
medium Karata
medium Khpyuk
medium Kiche
medium Kidero
medium Kina
medium Mallakent
medium Mikik
medium Rikvani
medium Rutul
medium Shukty
medium Tad-Magitl'
medium Tlibisho
medium Tsukhta
medium Upper Ubekimakhi
medium Zilo
small Archib
small Hinuq
small Megeb
small Tukita
ratio
0.00
0.25
0.50
0.75
1.00
1900
1920
1940
decade
number of L2
0
1
2
3
4
5
6

What's going on in Chuni?

- Chuni is an Avar village
- Avar is the biggest Nakh-Daghestanian language (about 700 000)
- Other Avar villages in our sample are close to being monolingual (Chittab, Durangi, Kizhani, Obokh)
- Chuni is an Avar enclave surrounded by Dargwa varieties (Akusha Dargwa and Tsudakhar Dargwa)
- Being a linguistic minority, Chuni people speak both languages


district borders
Lak language names
Mugi localities
investigated localities
Chuni–Tsukhta–V.Ubeki cluster
Kazikumukhskoe Koysu
Khakhita
Avar
Levashi
Kutisha
Kuppa
Khadzhalmakhi
Mekegi
Khalagork
Kakamakhi
Tsudakhar-Butri
Verkhnie Ubekimakhi
Naskent
Ulluaya
Keger
Avar
Chuni
Tsukhta
Tsudakhar
Tebekmakhi
Chokh
Kavkamakhi
Kuba
North Dargwa
Mugi
Akusha
Sogratl'
Balkhar
Kundy
Megeb
Mehweb
Bukhty
Lak
Usisha
Karasha
Gapshima
Tsudakhar-Butri
Uri
Gapshima

Number of L2 in each village by decade and language category



Poisson Mixed Effects Model

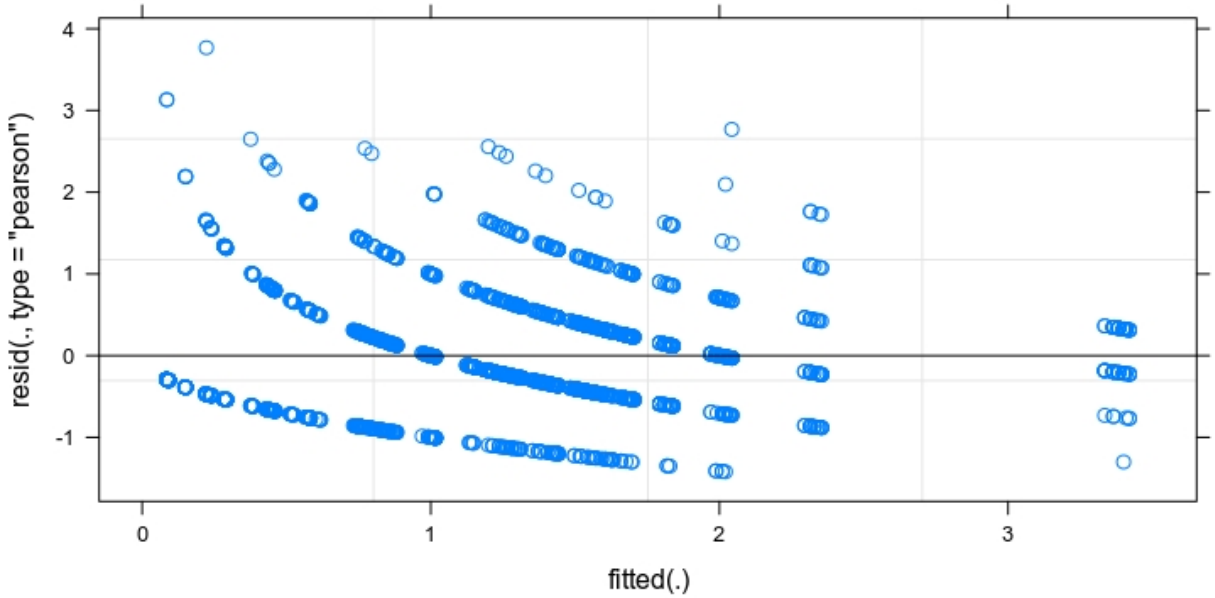
```
Generalized linear mixed model fit by maximum likelihood (Laplace Approximation)
 Family: poisson  ( log )
Formula: sum_langs ~ status + (1 | residence.en) + (1 | decade)
   Data: df

     AIC      BIC   logLik deviance df.resid
  7502.1   7532.5  -3746.1   7492.1     3195

Scaled residuals:
    Min      1Q  Median      3Q     Max
-1.4215 -0.4501 -0.1821  0.3202  3.7685

Random effects:
 Groups       Name        Variance  Std.Dev.
 residence.en (Intercept) 0.3679222 0.60657
 decade       (Intercept) 0.0004188 0.02046
Number of obs: 3200, groups:  residence.en, 46; decade, 6

Fixed effects:
             Estimate Std. Error z value   Pr(>|z|)
(Intercept)    0.7151     0.3052   2.343     0.0191 *
statusmedium  -0.5011     0.3311  -1.514     0.1301
statusbig     -1.5692     0.3412  -4.599 0.00000424 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects:
            (Intr) sttsmd
statusmedim -0.921
statusbig   -0.893  0.824

# Overdispersion test
       dispersion ratio = 0.4329
  Pearson's Chi-Squared = 1383.2471
                p-value = 1.0000

No overdispersion detected.
```

SMALL is stat. s. from o

MEDIUM is NOT stat. s. from SMALL

BIG is stat. s. from SMALL

Poisson Mixed Effects Model: Residuals



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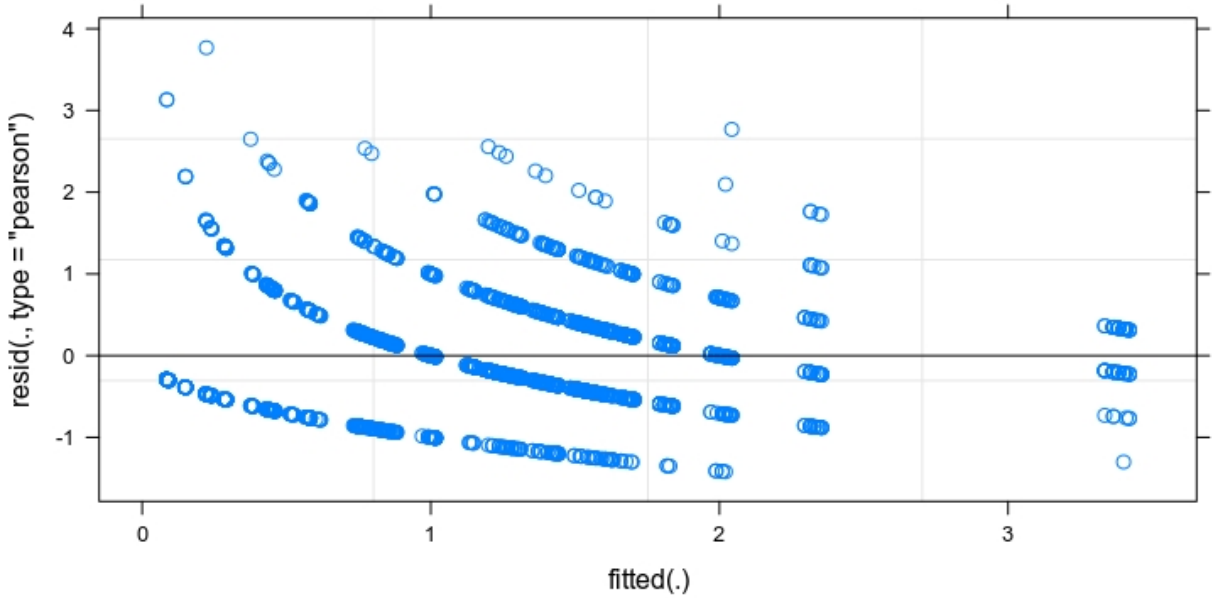
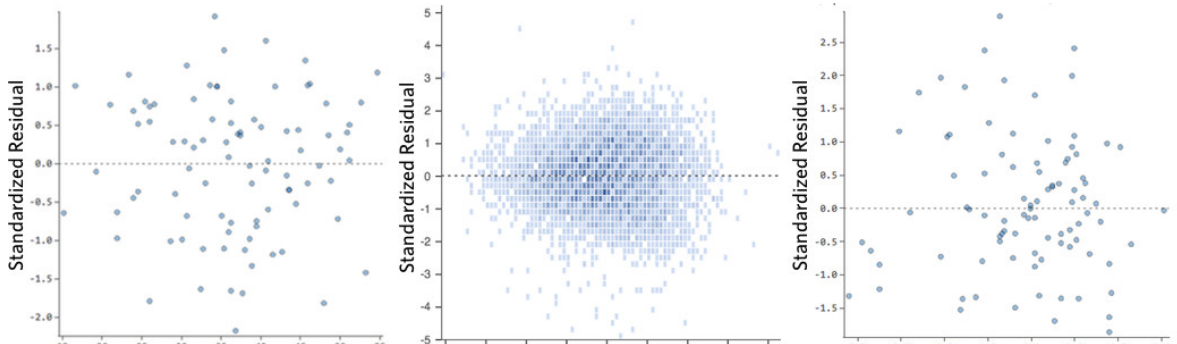


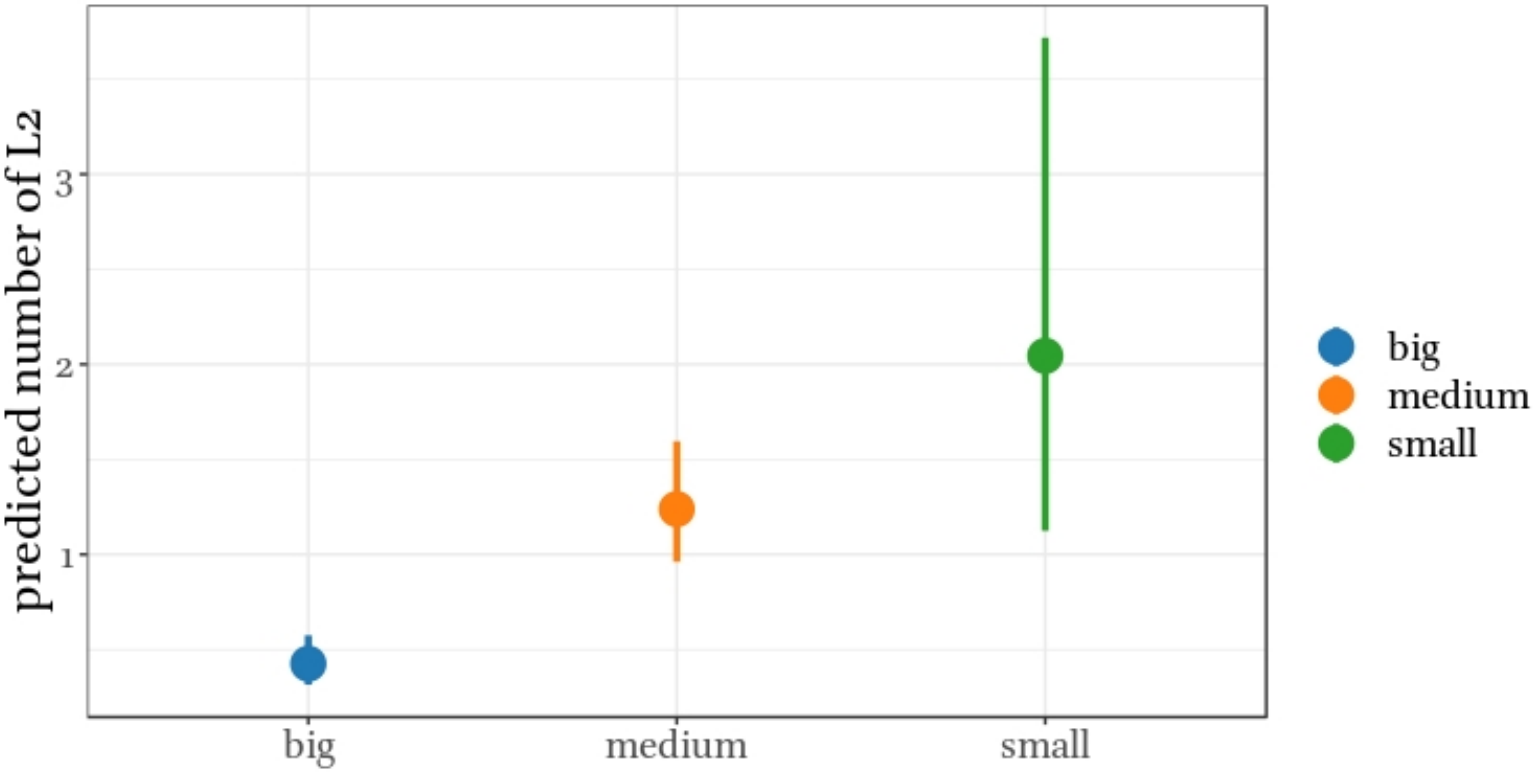
Statistical model is not ideal…Compare with some examples of "good" plots:

from `http://docs.statwing.com/interpreting-residual-plots-to-improve-your-regression/`



Conclusions:

- The variable language size is statistically significant.
- The obtained coefficients could be interpreted as follows:



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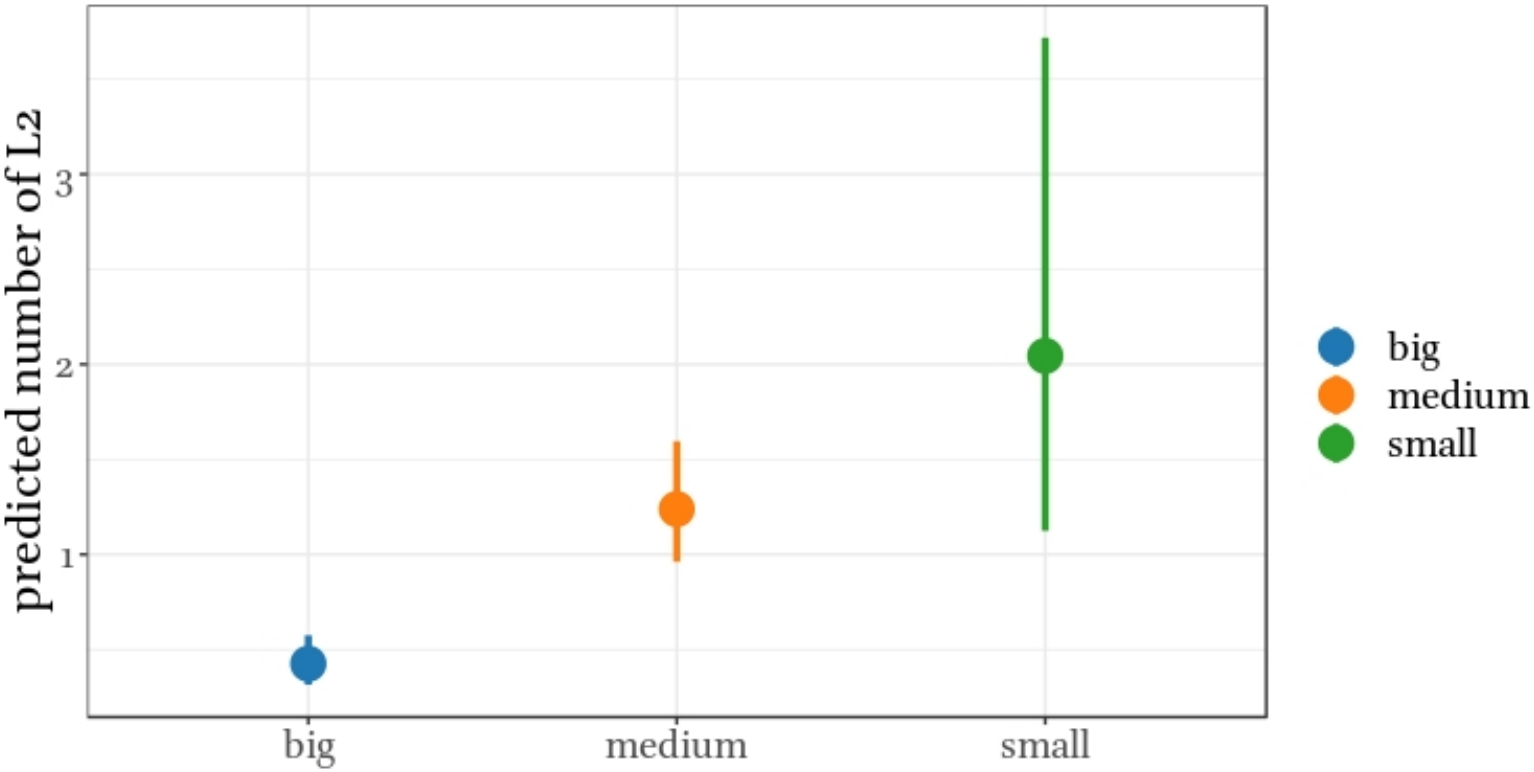

- Special case: Chuni

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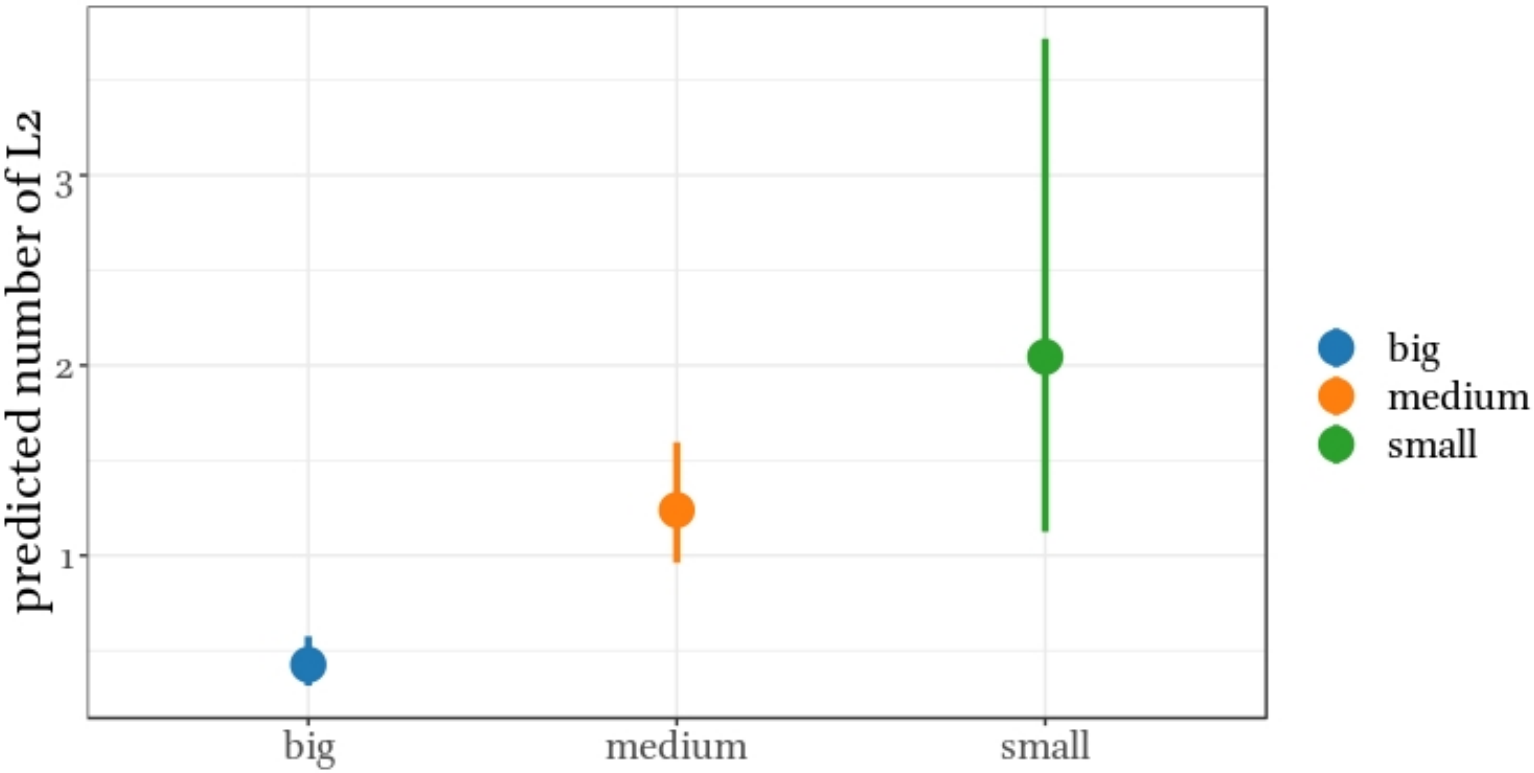

- Special case: Chuni
- This is not only the case with Daghestanian languages:
  - Circassians in Arabic comunities in Israel [Kreindler et al. 1995]
  - Abaza in Circassian comunities in Russia (personal observations)

Send us a letter!

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agricolamz@gmail.com

Presentation is available here: **tinyurl.com/y6jjp38y**

All visualisation and statistical analysis were made in R version 3.5.3 [R Core Team 2019] with packages `ggplot2` [Wickham 2016], `lme4` [Bates et al. 2015], `lingtypology` [Moroz 2017]

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