



**LACIM**

European research network on linguistics and  
languages of the Anatolia-Caucasus-Iran-  
Mesopotamia area



HUNGARIAN RESEARCH CENTRE FOR LINGUISTICS

glottothèque

languages of Anatolia, Caucasus, Iran, Mesopotamia

Georgian

Word stress

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visit glottothèque at: <https://spw.uni-goettingen.de/projects/lacim/>

# Roadmap

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## Goals

- Word stress in Georgian (existing findings)
- Word stress in the languages of the Caucasus (future directions)

## Contents

- Traditional descriptions of stress in Georgian
  - Recent experimental results
  - Theoretical import
  - Resources for future work on word stress in the languages of the Caucasus
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# Word stress

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- In many languages, the existence of word stress is self-evident
- Stress placement in a given word is clear
- (e.g., because it gives rise to minimal pairs)

*récord* (n.) – *recórd* (v.)

*pérmit* (n.) – *permít* (v.)

*présent* (n.) – *presént* (v.)

...

- In other languages, it is not so.
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# Word stress in Georgian

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- Native speakers have **no consistent intuitions** about stress placement
- **No minimal pairs** based on stress
- No agreement in the literature as to the location or existence of word stress in Georgian

# Word stress in Georgian

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Di- and trisyllabic words:

initial stress

Longer words:

initial?

antepenultimate?

penultimate?

+ secondary stress?

# Selected literature

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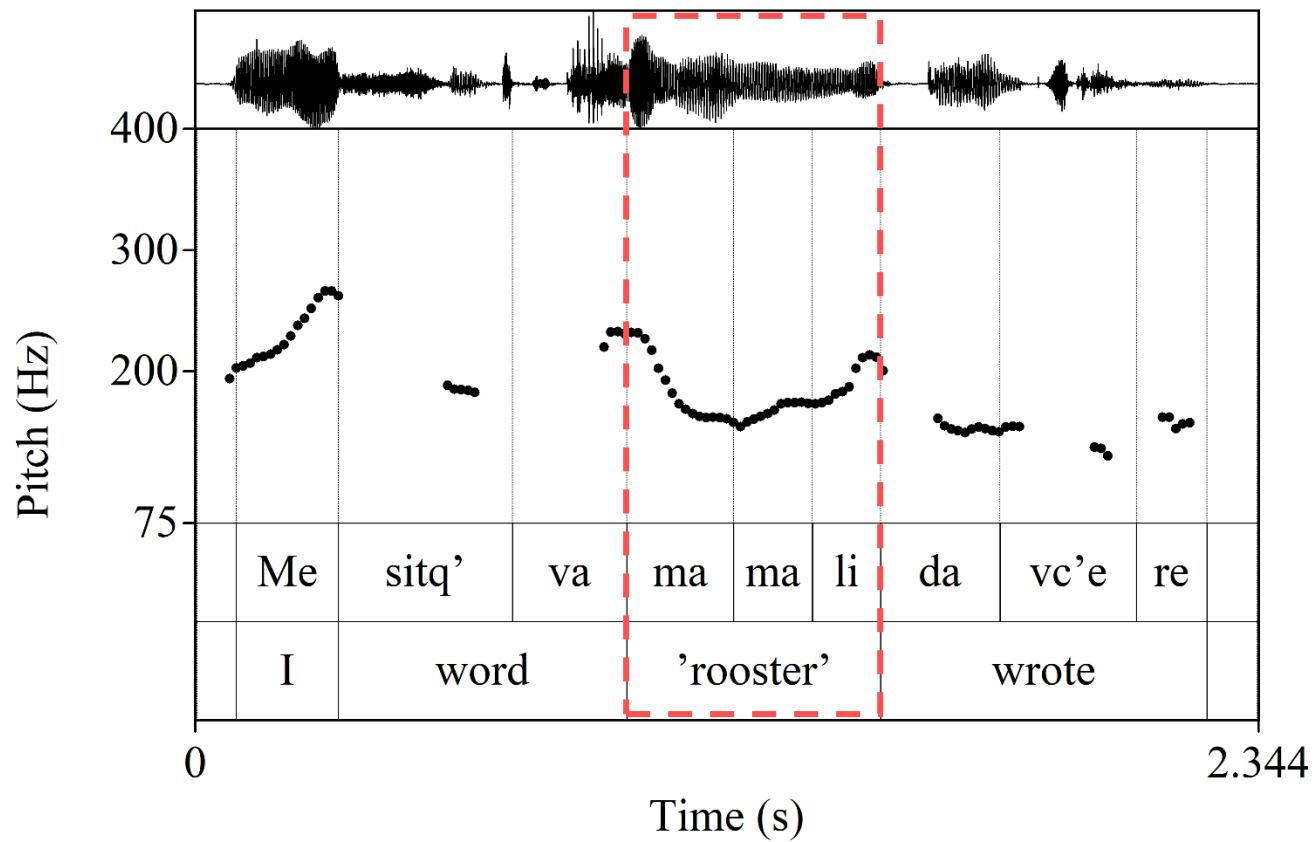
- Tschenkeli (1958): **initial** stress in di- and trisyllabic words, in longer words also often **initial**, though with less certainty.
- Ioseliani (1840): **antepenultimate** stress.
- Dirr (1904), Janašvili (1906), Akhvlediani (1949): **initial** stress in di- and trisyllables, **antepenultimate** in longer words;
- Aronson (1990:18): in words of 2-4σ, stress falls on the **antepenult** or the **initial** syllable; in longer words, both the **initial** syllable and the **antepenult** are stressed.

# Acoustic manifestation of stress

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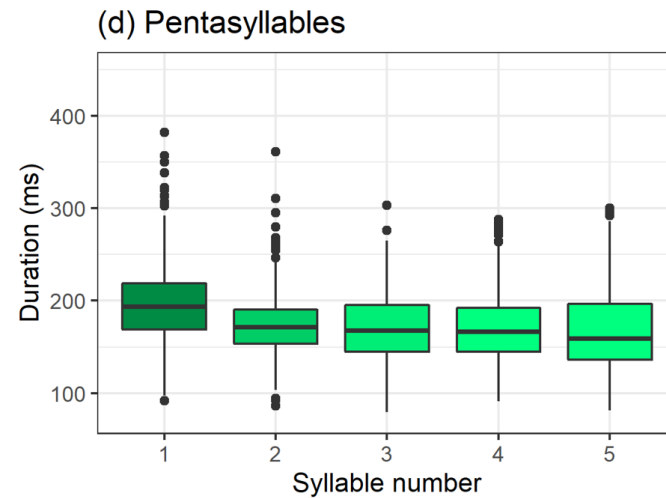
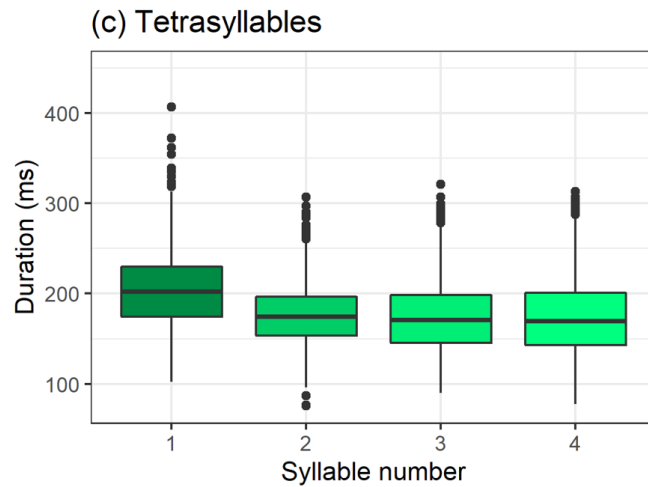
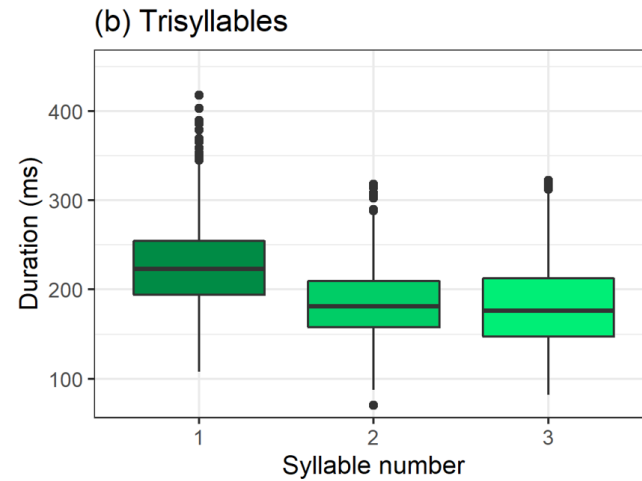
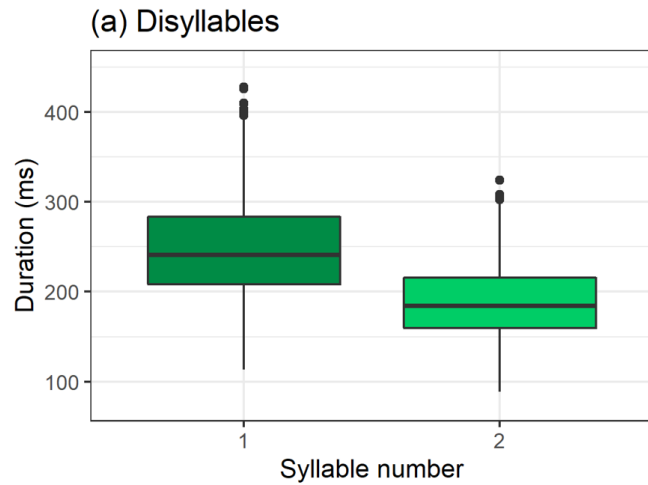
1. **Duration**: stressed syllables/vowels are often greater in duration than unstressed ones
2. **Intensity**: stressed vowels typically have greater intensity than unstressed ones
3. **Pitch/fundamental frequency**: stressed vowels may be marked by particular patterns of **fundamental frequency**

# Georgian: experimental findings

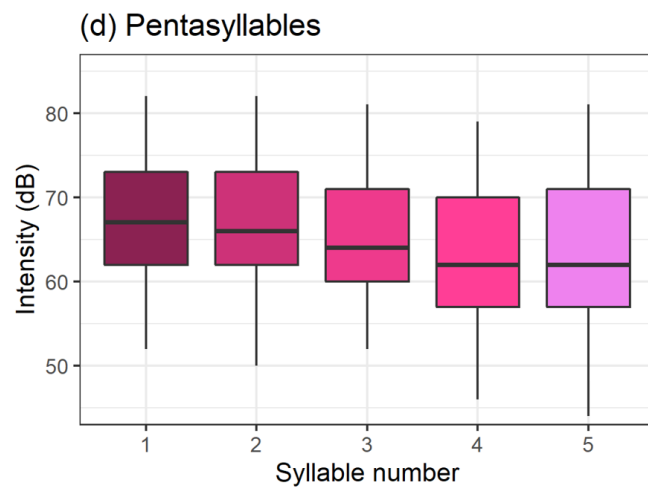
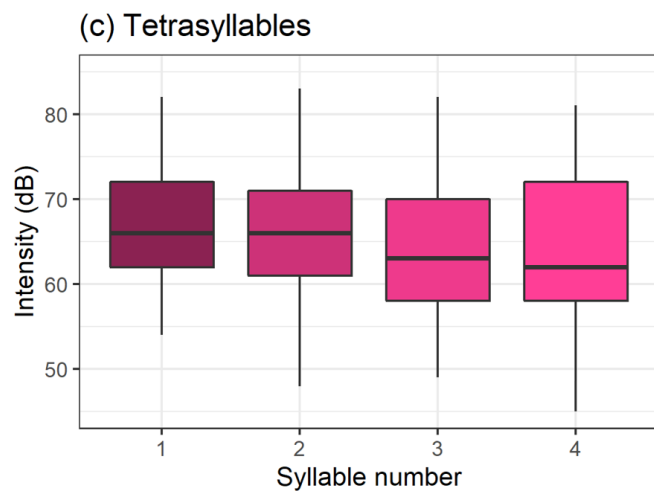
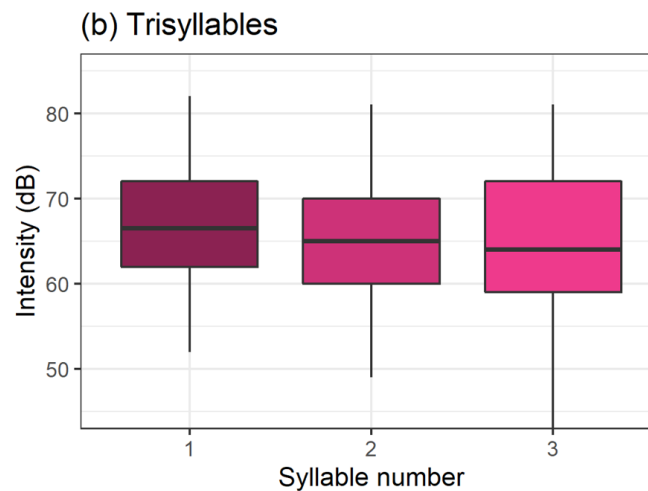
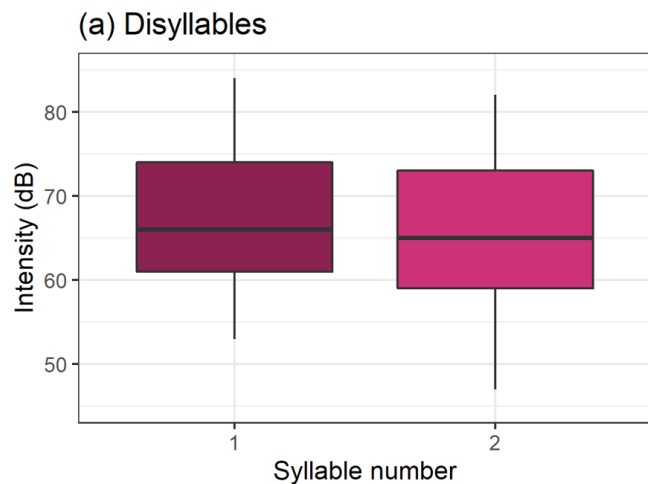




# Georgian: duration

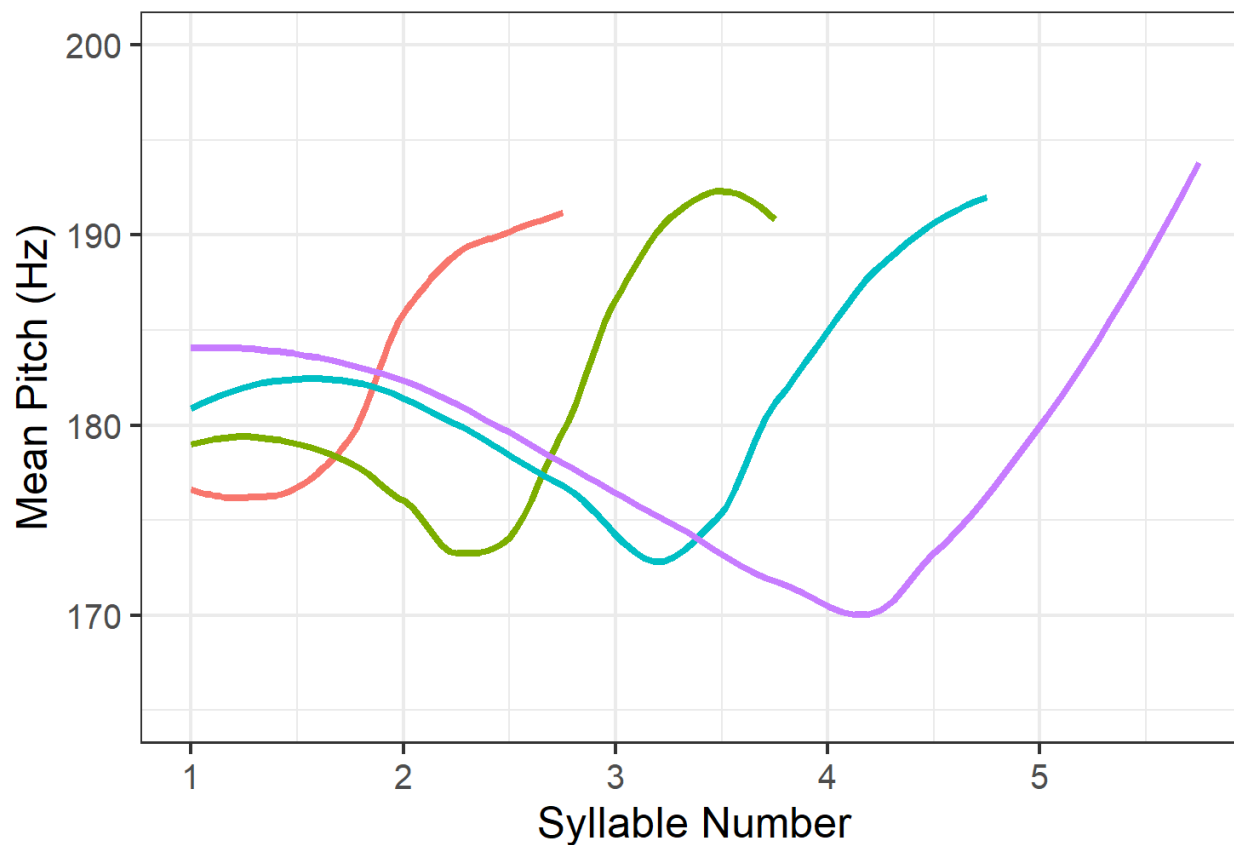


# Georgian: intensity



# Georgian: fundamental frequency

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Number of Syllables — 2 — 3 — 4 — 5

# Georgian stress: conclusions

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- Initial syllable has greatest duration
  - Initial syllable has greatest intensity
  - Fundamental frequency facts are more complex – and also related to **phrasal intonation**
- ⇒ There is evidence for **initial** word stress, marked by duration, intensity, and fundamental frequency
- ⇒ (Fundamental frequency patterns also mark phrasal intonational contours)

(Borise & Zientarski 2018; Borise, submitted)

# Other languages of the Caucasus

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Other **Kartvelian** languages, in which stress facts still await thorough experimental investigation:

- Svan
- Laz
- Mingrelian/Megrelian

...as well as many other **languages of the Caucasus!**

# Language Map of the Caucasus

## Northeast Caucasian

- Agul
- Akhvakh
- Andi
- Archi
- Avar
- Bagvalal
- Bezhta
- Botlikh
- Budukh
- Chamalal
- Dargwa
- Dido
- Ghodoberi
- Hinukh
- Hunzib
- Karata
- Khinalugh
- Khvarshi
- Kryz
- Lak
- Lezgin
- Rutul
- Tabassaran
- Tindi
- Tsakhur
- Udis

## Northwest Caucasian

- Abaza
- Abkhaz
- Adyghe
- Cherkess
- Kabardin

## South Caucasian

- Georgian
- Mingrelian
- Svan

## Indo-European

- Armenian
- Judeo-Tat
- Kurdish
- Moldavian
- Ossetian
- Russian
- Talysh
- Tat

## Nakh

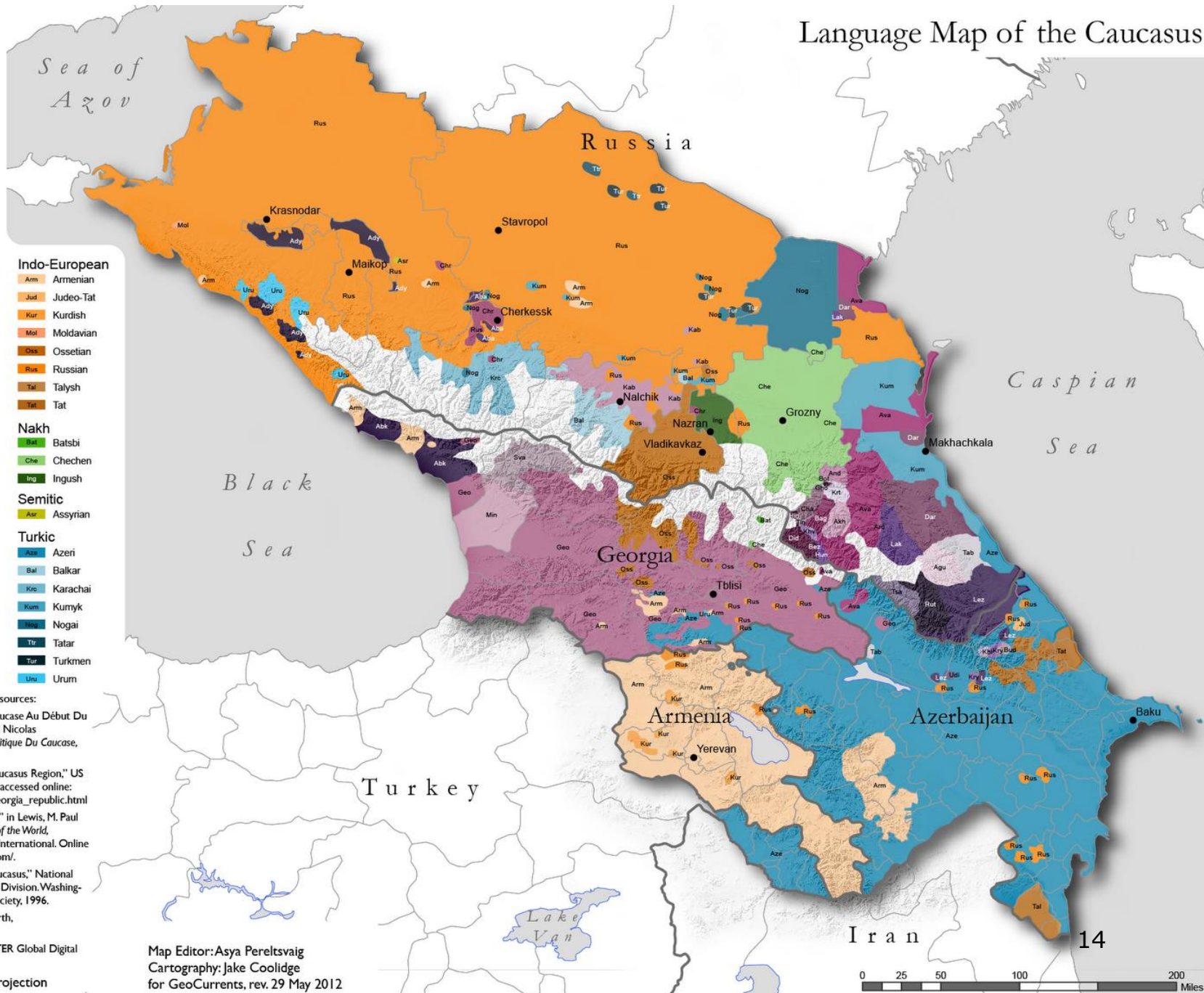
- Batsbi
- Chechen
- Ingush

## Semitic

- Assyrian

## Turkic

- Azei
- Balkar
- Karachai
- Kumyk
- Nogai
- Tatar
- Turkmen
- Urum



Map compiled from the following sources:

"La Composition Ethnique Du Caucase Au Début Du XXle Siècle" in Radvanyi, Jean and Nicolas Beroutchachvili, 2009. *Atlas Géopolitique Du Caucase*, 2009, Paris: Éditions Autrement.

"Ethnolinguistic Groups in the Caucasus Region," US Central Intelligence Agency, 1995, accessed online: [http://www.lib.utexas.edu/maps/georgia\\_republic.html](http://www.lib.utexas.edu/maps/georgia_republic.html)

"Languages of Russian Federation," in Lewis, M. Paul (ed.), 2009. *Ethnologue: Languages of the World*, Sixteenth edition, Dallas, Tex.: SIL International. Online version: <http://www.ethnologue.com/>.

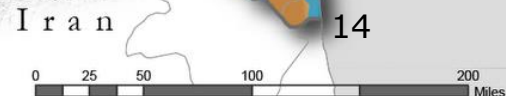
"A Fortress of Languages: The Caucasus," National Geographic Society, Cartographic Division, Washington, D.C.: National Geographic Society, 1996.

Base data provided by Natural Earth, <http://www.naturalearthdata.com>.

Terrain data derived from the ASTER Global Digital Elevation Model, version 2.

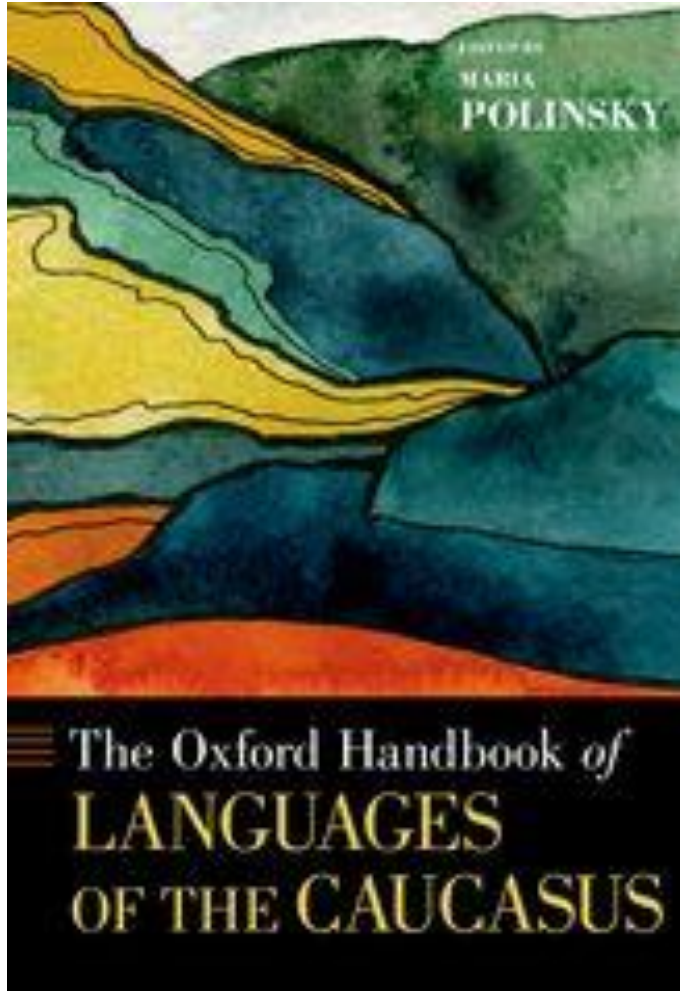
Albers Equal-Area Conic Projection

Map Editor: Asya Pereltsvaig  
Cartography: Jake Coolidge  
for GeoCurrents, rev. 29 May 2012



# Stress facts in the languages of the Caucasus

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- Ch. 16 *Word Stress*
- Ch. 17 *Tone and Intonation*

# Questions to ask

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- Does a language have word stress?
- What is its **distribution**?
- How is it marked **acoustically**?
- How does the expression of stress interact with **phrasal intonation**?



# Methodology: overview

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Roettger, T. & Gordon, M. (2017). Methodological issues in the study of word stress correlates. *Linguistics Vanguard*, 3(1), 20170006.

<https://doi.org/10.1515/lingvan-2017-0006>

Based on a survey of 110 (sub-) studies on 75 languages, desiderata for research on the acoustics of stress are identified:

- descriptions of employed methods
- speech material design
- sample sizes
- statistical considerations

# Acoustic cues cross-linguistically

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Gordon, M. & Roettger, T. (2017). Acoustic correlates of word stress: A cross-linguistic survey. *Linguistics Vanguard*, 3(1), 20170007.

<https://doi.org/10.1515/lingvan-2017-0007>



Best of luck!

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Borise, Lena. 2020. Tone and Intonation in the Languages of the Caucasus. In Maria Polinsky (ed.), *Handbook of the Languages of the Caucasus*, 729–756. Oxford ; New York: Oxford University Press.

Borise, Lena. 2020. Word Stress in the Languages of the Caucasus. In Maria Polinsky (ed.), *Handbook of the Languages of the Caucasus*, 757–782. Oxford; New York: Oxford University Press.

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Ioseliani, Platon. 1840. *P'iruel-dats'q'ebitni k'anonni kartulis ghramat'ik'isa*. Tbilisi: I. da D. Arzanovta St'amba.

Gordon, Matthew & Timo Roettger. 2017. Acoustic correlates of word stress: A cross-linguistic survey. *Linguistics Vanguard* 3(1). <https://doi.org/10.1515/lingvan-2017-0007>.

Roettger, Timo & Matthew Gordon. 2017. Methodological issues in the study of word stress correlates. *Linguistics Vanguard* 3(1). <https://doi.org/10.1515/lingvan-2017-0006>.

Tschenkeli, K. 1958. *Einführung in die georgische Sprache*. Zürich: Amirani Verlag.

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# this lecture

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<https://spw.uni-goettingen.de/projects/lacim/>

Anatolia, Caucasus, Iran, Mesopotamia  
grammatical snippets online