Forest Nenets monosyllabic shortening as overwrite

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Intro: FNMS

The centerpiece of this talk is one phenomenon — Forest Nenets monosyllabic shortening (FNMS).

- Forest Nenets (Nenets < Samoyedic < Uralic) — endangered minority language of Russia
- Monosyllabic shortening := erasure of length contrast in favor of shortness in monosyllables

(1) Long $\longrightarrow$ short
ka̮ta [kată] — *ka̮* [kă] ‘ear.POSS.3SG’ — ‘ear’

Short $\longrightarrow$ short
tălka̮t° [tălkăt] — *tăl* [tăl] ‘fur.ABL’ — ‘fur’

Intro: FNMS

FNMS is weird

- MS is a rare case of *overwrite*
  - Initial stressed syllables that belong to roots (vs. affixes) are all protected environments (Beckman 1998)
  - Overwrite happens when an otherwise faithful position loses its privileged status due to positional markedness (Kaplan 2015)
- Acoustically, MS is tricky: monosyllables exhibit a wide range of vowel durations, from 40 to 200+ ms

Intro: FNMS

Plan for today:

- The empirical part
  - Vowel duration data
  - Novel phonological observations: Raddoppiamento sintattico
- The theoretical part
  - FNMS as overwrite

Forest Nenets

Forest Nenets

- Forest Nenets < Nenets < Samoyedic < Uralic
- Data sources:
  - fieldwork in Kharampur and Tarko-Sale (Yamalo-Nenets AO, Russia) in 2023 and 2024
  - descriptions by Sammallahti (1974) and Salminen (2007)

Map on the right from Salminen (2019)

Vowel inventory & syllable structure

- Length distinction only exisits under stress
- Reduction in unstressed syllables:
  - vowel length is neutralized in unstressed syllables
  - contrast between high and mid vowels disappears as well
- Possible syllable structures:
  - CVVC, CVC, CVV, CV under stress
  - CVC, CV elsewhere

Stressed syllables

ĭ i		ŭ u
ĕ e		ŏ o
ăĕ æ	ă a	

Unstressed syllables

	i	u
◌̥	æ	a

Stress

- ✶ Stress falls on odd-numbered non-final syllables

(2) ˈka.ta ‘grandmother’

ˈta.pa.ta ‘to point’

ˈta.pa.ˈta.ŋa ‘point.GFS’

- ✶ Compensatory gemination after open syllables with short vowels

(3) *ˈwă.ta* [wăttă] ‘hook’

ˈd’ĭ.ƛ́i [d’ĭƛ́ƛ́ĭ] ‘moon’

Qualitative reduction

✂ In unstressed syllables, long mid vowels /e o/ become length-neutral /i u/

(4) a. *ˈpʼen°tˌλʼemæ* ‘hit.EVID’

b. *ˈpʼen°tλʼiʔ* ‘hit.CN’

(5) a. *ˈwedʼaʔˌkota* ‘dog.POSS.3SG’

b. *ˈwedʼaʔku* ‘dog’

Monosyllables

- In monosyllables, length contrast disappears (despite stress)
- Optional qualitative reduction
- Therefore, monosyllables are the only context where short mid vowels /ĕ ŏ/ occur

(6) *ka* [kă] ‘ear’

to [tŭ ∼ tŏ] ‘lake’

n′e [n′ĭ ∼ n′ĕ] ‘woman’

★ Short /ĕ ŏ/ correspond to long /e o/ in polysyllabic word forms (Salminen 2007)

(7) *to* [tŭ ∼ tŏ] – *to?kuša* [toʰkŭšă] ‘lake’ – ‘lake.DIM.DIMA’

n′e [n′ĭ ∼ n′ĕ] – *n′eta* [n′etă] ‘woman’ – ‘woman.POSS.3SG’

All kinds of monosyllables are there

All (underlying) syllable structures are observed in monosyllables: CV, CVV, CVC, CVVC.

Syll	**Word**	**Meaning**	**Polysyllabic form**	**Gloss**
CV	*tŭ*	fire	*tŭta* [tŭttă]	fire-POSS.3SG
CVV	*ka*	ear	*kata* [kată]	ear-POSS.3SG
CVC	*tăλ*	fur	*tăλkăt°* [tăλkăt ∼ tăλkătĭ]	fur-ABL
CVVC	*kĕm*	blood	*kemta* [kemtă]	blood-POSS.3SG

Questions for an instrumental study

Not a lot of acoustic data is available on FN.

Questions I set out to answer:

- How do surface vowel durations correspond to the underlying length distinction?
- What is the distribution of duration in unstressed syllables? i.e. what is the “neutral length” like phonetically?
- Once the length-duration link is established, how do monosyllables fit into the picture?

Acoustic data

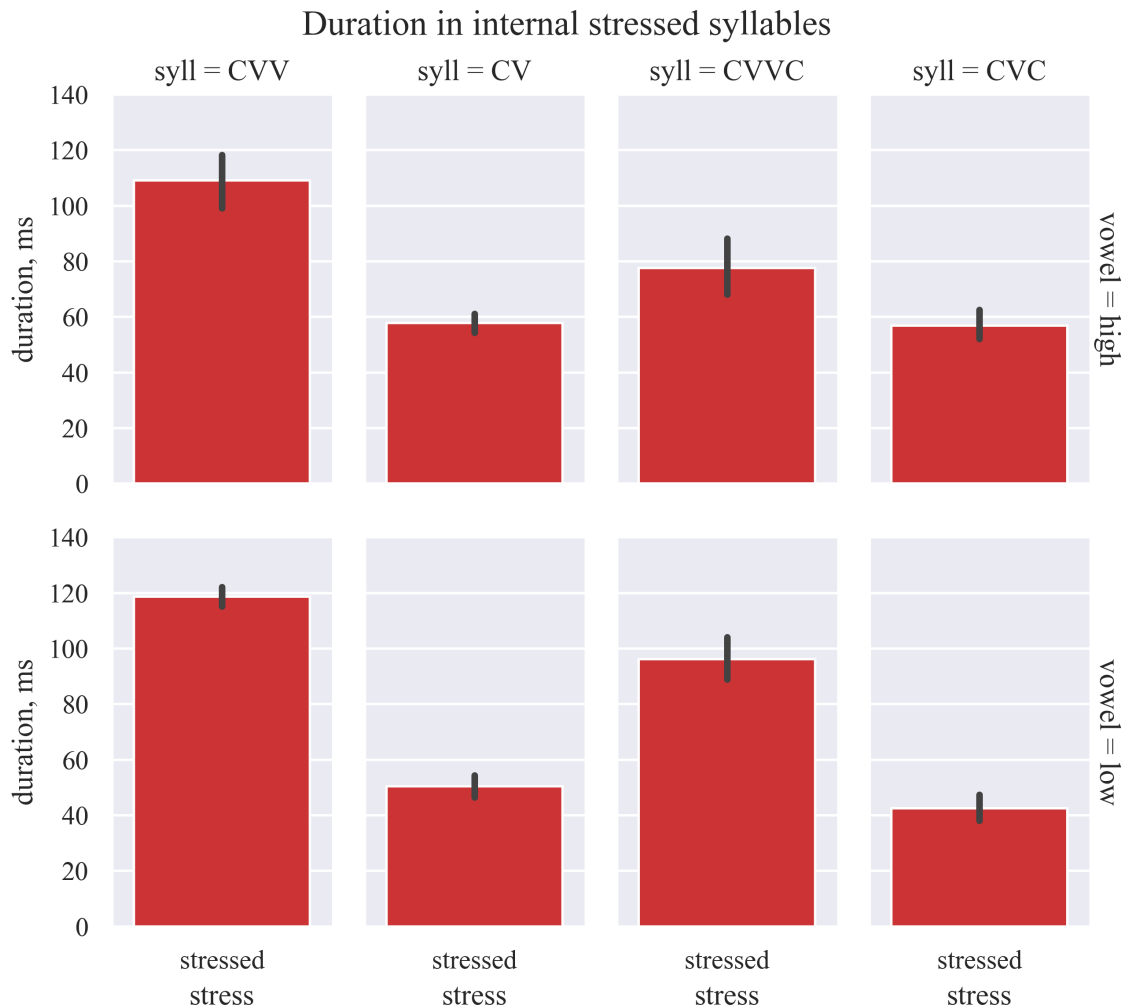
Data sources

Fieldwork in Tarko-Sale (Yamalo-Nenets Autonomous Okrug)

- June–July 2023 and July 2024
- 11 consultants (3 male, 8 female)
- Zoom H1n 48k 16bit
- Manual annotation by me in Praat (Boersma 2021)
- 3906 word tokens

Length-duration relationship under stress

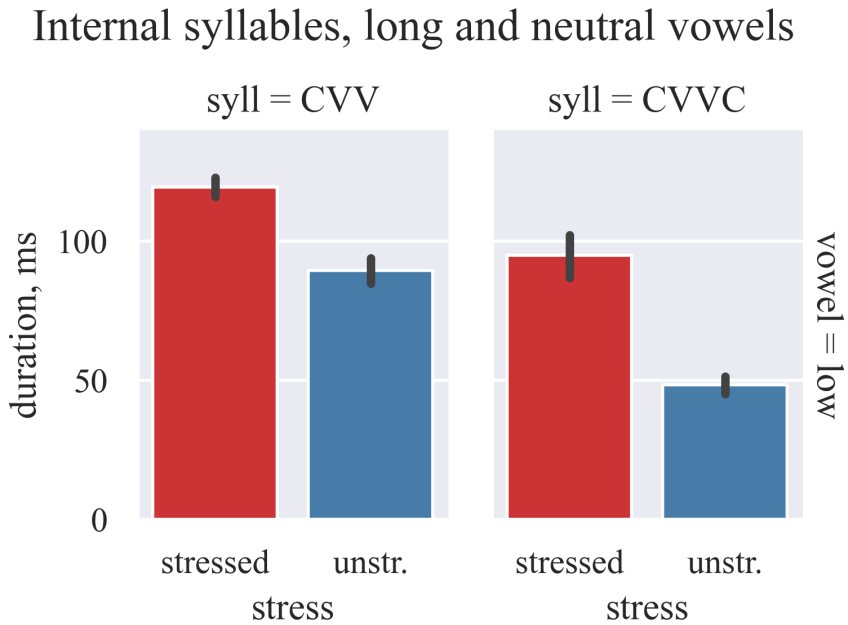
In stressed syllables, expectedly, CVV > CVVC > CV > CVC

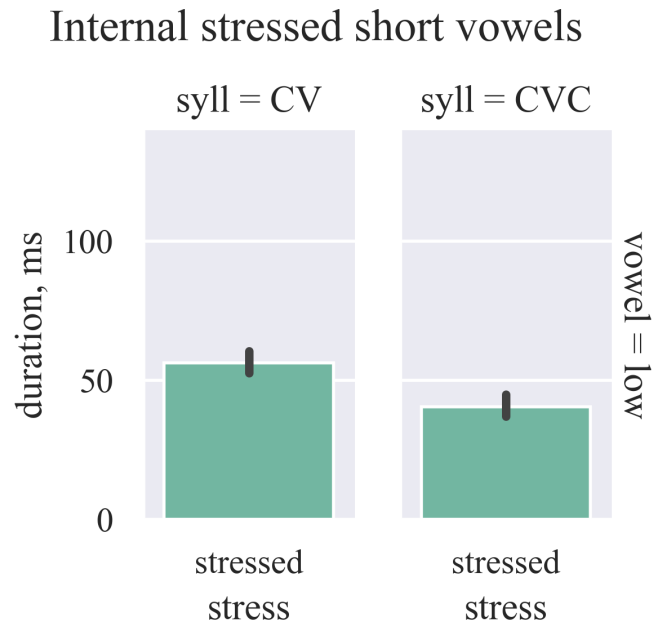


Length neutralization, polysyllabic words

Unstressed vowels (blue in the barplot)

- Long: much longer than neutral
- Short: a little shorter than neutral

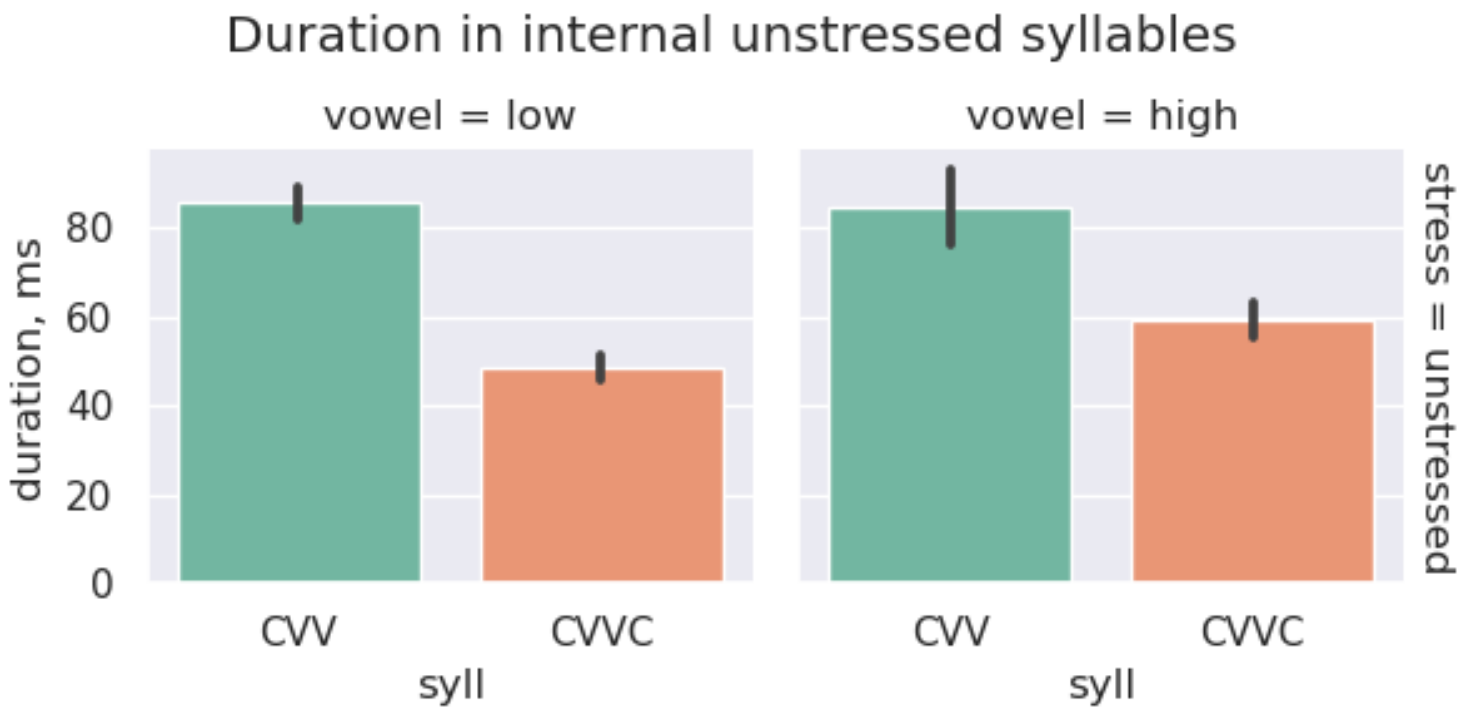




Variable duration in unstressed positions

Unstressed vowels vary significantly in duration

- Between closed and open syllables: closure decreases duration



Durations in polysyllabic words: takeaway

- Long vowels are longer
- Short vowels are shorter
- Both in stressed and unstressed syllables, surface duration is lower with closure
- No effect of vowel quality on duration in my data

Monosyllables

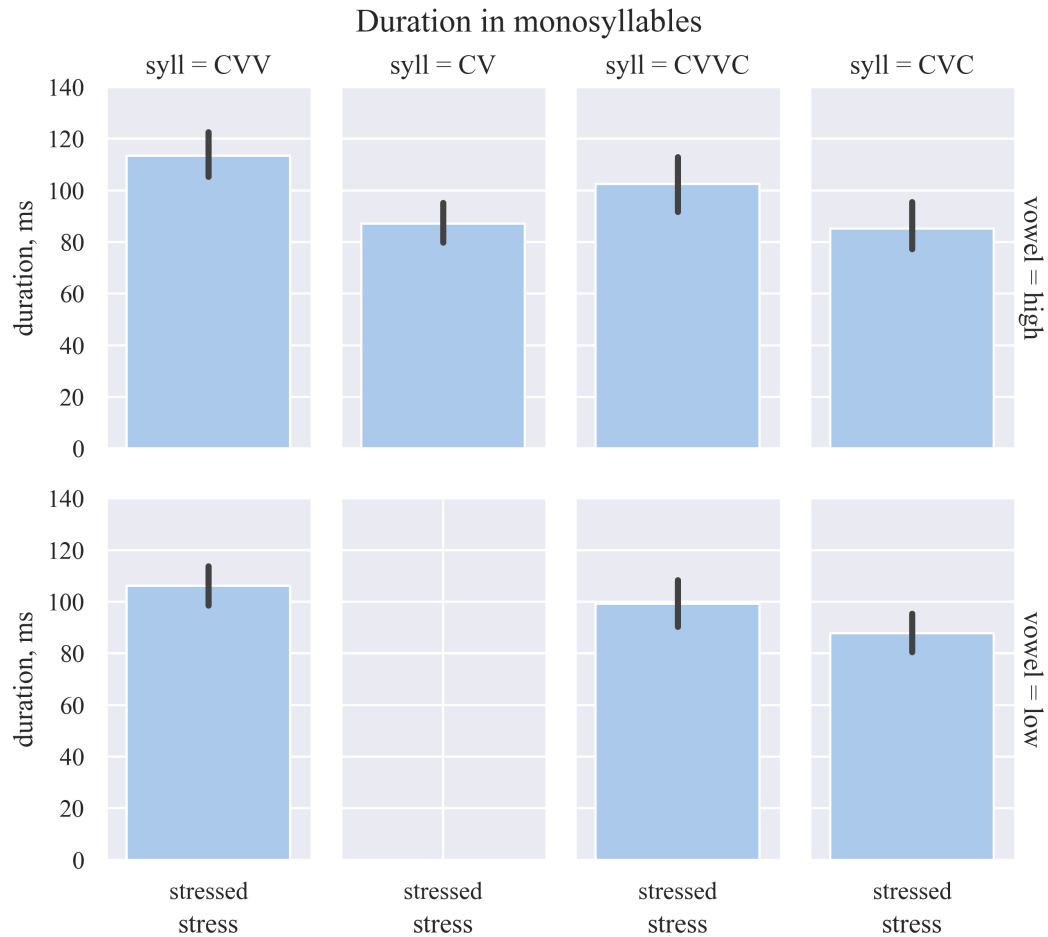
If FNMS is real, we expect the following:

- ♠ **Length neutralization**
  durations of long and short vowels in monosyllables diverge less than in their polysyllabic forms
- ♠ **Shortening**
  - ♥ vowels in monosyllables $\approx$ short word-internal vowels
  - ♥ vowels are shorter in monosyllables than in respective polysyllabic forms

Length neutralization

In monosyllables, durations diverge less than word-internally

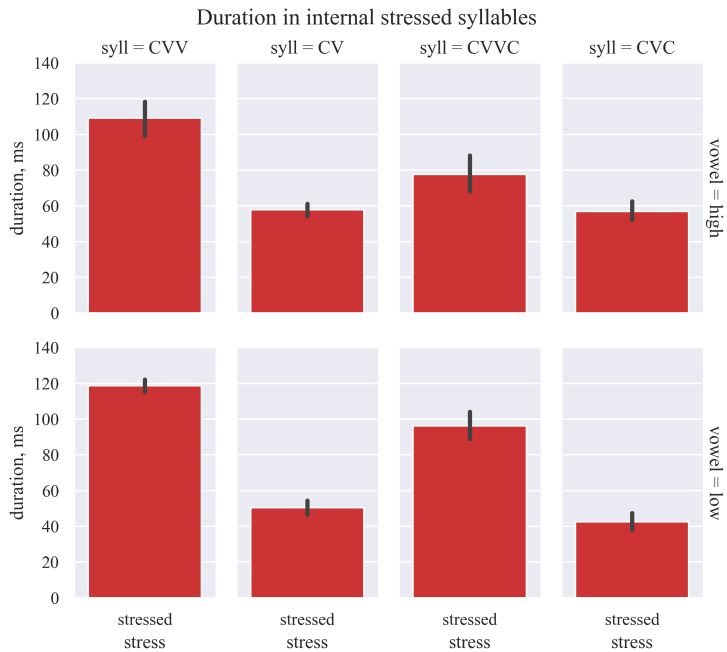
- Neutralization does happen

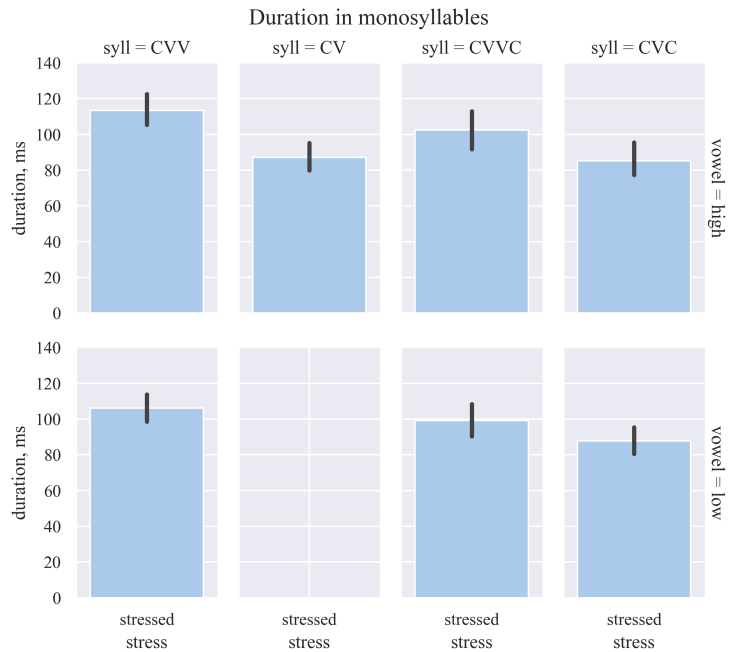


Length neutralization

In monosyllables, durations are less divergent than in stressed internal syllables

- Neutralization does happen
- The resulting neutral length is not short though





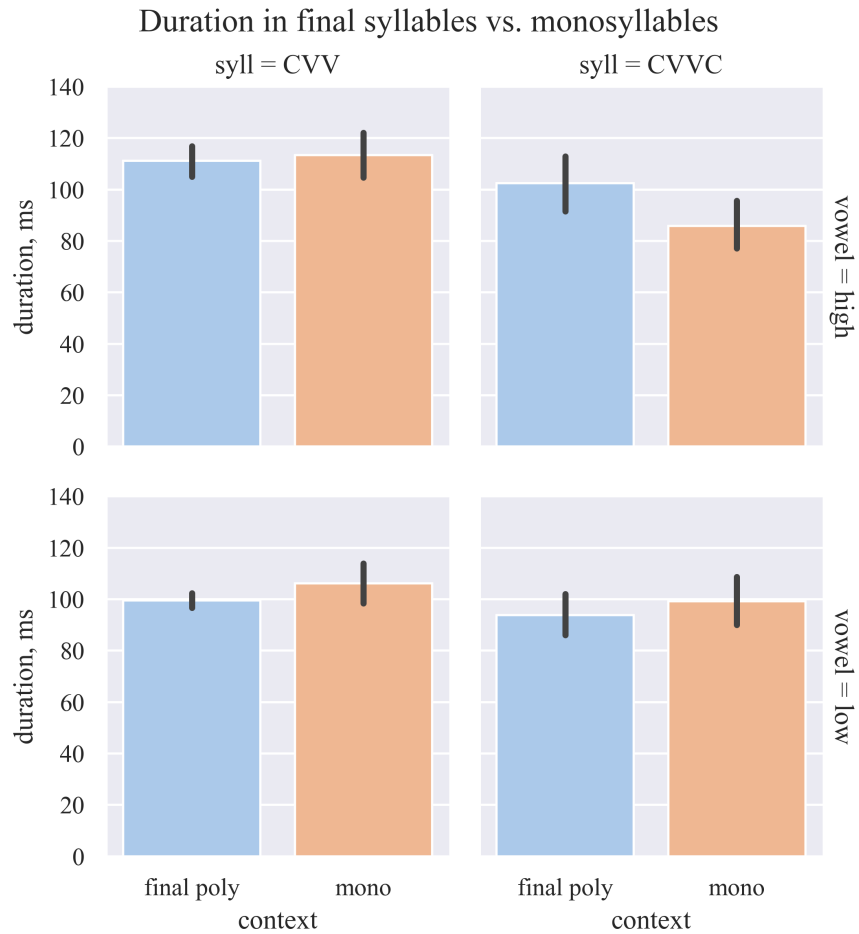
Shortening

There is no SHORTening: vowels in monosyllables are not comparable to short vowels proper

word	segment	mean, ms	std, ms	count
pĭ.lʼa	ĭ	48.08	11.18	5
tĭ	ĭ	105.71	29.06	15
šĭ	ĭ	118.39	13.72	16
ńi.mă.š°	i	134.53	38.06	2

Shortening

Rather than stressed short vowels, vowels in monosyllables resemble those in final syllables



Durations in monosyllables: takeaway

- ☆ Length neutralization: yes
- ☆ Shortening: not exactly

FNMS appears to be a case of neutralization but not necessarily shortening

- ✪ I contend that MS can hypothetically be construed as a mere loss of contrast, not necessarily in the shortening direction
- ✪ There is, however, another fact that supports the shortening story

Phonological addendum: Raddoppiamento

Raddoppiamento sintattico in FN

A subset of FN speakers interviewed do compensatory gemination after stressed open monosyllables

- just like after stressed internal CV in FN
- or like the Italian Raddopiameto Sintattico (Larsen 1998)

(8) a. Raddopiameto Sintattico proper

paltó pulito [paltoppulito] ‘clean coat’
cittá triste [tšittattriste] ‘sad city’

b. Raddopiameto Sintattico in Forest Nenets

tĭ ḿind’a [tĭḿḿind’a] ‘reindeer goes’
d’a kăm°tuma [d’ăkkămtuma] ‘flour poured out’

Raddoppiamento sintattico in FN

FN Raddoppiamento sintattico facts point to the existence of MS as a phonological process, overthrowing several hypotheses at once:

- **MS is a phonetic artifact/isolated form effect**
  In connected speech, the shortening does not disappear but rather becomes more noticeable
- **Monosyllables do not bear stress**
  Monosyllables are indeed stressed because they still receive extra syllabic weight by means of gemination

There are concerns to be addressed in further studies, e.g. the behavior of closed monosyllables

FNMS exists. Now what?

Overwrite

- There is a range of faithful positions that are perceptually or psycholinguistically prominent
  - roots, (root-)initial/stressed syllables, onsets
- Their faithfulness is sometimes overridden
- Central Veneto (Kaplan (2015), citing Walker (2005) et seq.): stressed mid vowels raised before high vowels

(9)

kalˈs-e̲t-o — kalˈs-i̲t-i	‘sock.M.SG — sock.M.PL’
kanˈt-e̲-se — kanˈt-i̲-si-mo	‘sing.1PL — sing.1PL.IPFV.SBJV’
ˈmo̲v-o — ˈmu̲v-i	‘move.1SG — move.2SG’
kanˈto̲r — kanˈtu̲r-i	‘choir singer.M.SG — choir singer.M.PL’

The significance of FNMS

Contrast disappearing in monosyllables is not really expected

- Stressed and initial syllables are among the positions that preserve more contrast than others (Beckman 1998)
- Monosyllables have been observed to resist morphophonological alternations (Becker, Nevins & Levine 2012, Becker, Clemens & Nevins 2017)

Monosyllable privilege

The monosyllable in FN is both a privileged position and a target for neutralization

- The monosyllable is initial
- Therefore, it is stressed and supposed to preserve length and quality contrasts
- However, the monosyllable is also final
- Therefore, both of these distinctions must be erased

Neutralization almost completely wins — only the quality contrast is partially preserved (recall the short mid vowels /ĕ ŏ/)

(10) *xĕλ* [xĕλ ∼ xĭλ] ‘salt’
tŏ [tŏ ∼ tŭ] ‘lake’

Length neutralization in unstressed syllables

First, let us introduce constraints that enforce length neutralization

- Input-output correspondence wrt. length (only exists under stress)
  - IDENT-IO(LENGTH)/STRESSED: length must be identical between input and output in stressed syllables
- No long vowels in unstressed syllables $\Rightarrow$ no contrasts
  - *$\bar{\text{V}}$: assign a violation mark to any occurrence of VV

(11) Ranking of positional constraints on length in FN

IDENT-IO(LENGTH)/STRESSED $\gg$ *$\bar{\text{V}}$ $\gg$ IDENT-IO(LENGTH)

FN: stressed syllable privilege vs. final syllable disadvantage

As mentioned before, the monosyllable hosts a conflict between preservation and neutralization

- The stressed syllable is a position of faithfulness wrt. length
- At the same time, length is marked in the final syllable
- Final VV markedness overrides stressed syllable faithfulness
  - *$\bar{V}$-FINAL: long vowels are prohibited in final syllables

(12) Ranking of positional constraints of length in FN

*$\bar{V}$-FINAL $\gg$ IDENT-IO(LEN)/STR $\gg$ *$\bar{V}$ $\gg$ IDENT-IO(LEN)

Deriving length neutralization

(13) *kata* ‘grandma’

/kata/	*V̄-FINAL	ID-IO(LEN)/STR	*V̄	ID-IO(LEN)
a. [kata]	*		**	
b. [kăta]	*	*	*	*
☞ c. [kată]			*	*
d. [kătă]		*		**

(14) *wăta* ‘hook’

/wăta/	*V̄-FINAL	ID-IO(LEN)/STR	*V̄	ID-IO(LEN)
a. [wata]	*	*	**	*
b. [wăta]	*		*	
c. [wată]		*	*	**
☞ d. [wătă]				*

Deriving MS

(15) *tŭ* ‘fire’

/tŭ/	*V̄-FINAL	ID-IO(LEN)/STR	*V̄	ID-IO(LEN)
a. [tu]	*	*	*	*
☞ b. [tŭ]				

(16) *ka* ‘ear’

/ka/	*V̄-FINAL	ID-IO(LEN)/STR	*V̄	ID-IO(LEN)
a. [ka]	*		*	
☞ b. [kă]		*		*

Extending the typology of overwrite

The case of a protected position being infringed upon by neutralization is referred to by Kaplan (2015) as overwrite

- The known examples of overwrite targeting stressed initial syllables overwhelmingly involve assimilation (Kaplan 2015, Zhang 2020)
- Therefore, FN makes a valuable addition to the typology with a different kind of process — vowel length neutralization

References I

- Becker, Michael, Lauren Eby Clemens & Andrew Nevins. 2017. Generalization of French and Portuguese plural alternations and initial syllable protection. *Natural Language & Linguistic Theory* 35. 299–345.
- Becker, Michael, Andrew Nevins & Jonathan Levine. 2012. Asymmetries in generalizing alternations to and from initial syllables. *Language*. 231–268.
- Beckman, Jill. 1998. *Positional faithfulness*. University of Massachusetts Amherst dissertation.
- Boersma, David, Paul & Weenink. 2021. *Praat: doing phonetics by computer [Computer program]. Version 6.1.39, retrieved 9 February 2021 from http://www.praat.org/*.
- de Lacy, Paul. 2002. *The formal expression of markedness*. University of Massachusetts, Amherst dissertation.
- Kaplan, Aaron. 2015. Maximal prominence and a theory of possible licensors. *Natural Language & Linguistic Theory* 33(4). 1235–1270.

References II

- Kenstowicz, Michael. 1997. Quality-sensitive stress. *Rivista di Linguistica* (9). 157–188.
- Larsen, Bergeton Uffe. 1998. Vowel length, Raddoppiamento Sintattico and the selection of the definite article in Italian. *Langues et grammaire II-III, phonologie*. 87–102.
- Parker, Stephen. 2002. *Quantifying the sonority hierarchy*. University of Massachusetts Amherst.
- Salminen, Tapani. 2007. Notes on Forest Nenets phonology. In Jussi Ylikoski & Ante Aikio (eds.), *Sámit, sánit, sátnehámit. Riepmočála Pekka Sammallahtii miessemánu 21. beaivve 2007*, vol. 253, 349–372. Helsinki: Suomalais-Ugrilainen Seura.
- Salminen, Tapani. 2019. An overview of the progress and challenges of a Forest Nenets grammar project. Talk at Descriptive grammars and typology, University of Helsinki.
- Sammallahti, Pekka. 1974. *Material from Forest Nenets*. Helsinki: Castrenianum.
- Walker, Rachel. 2005. Weak triggers in vowel harmony. *Natural language & linguistic theory* 23(4). 917–989.

References III

 Zhang, Tuo. 2020. *Positional markedness and positional faithfulness: Their overlap and non-overlap.*

Appendix

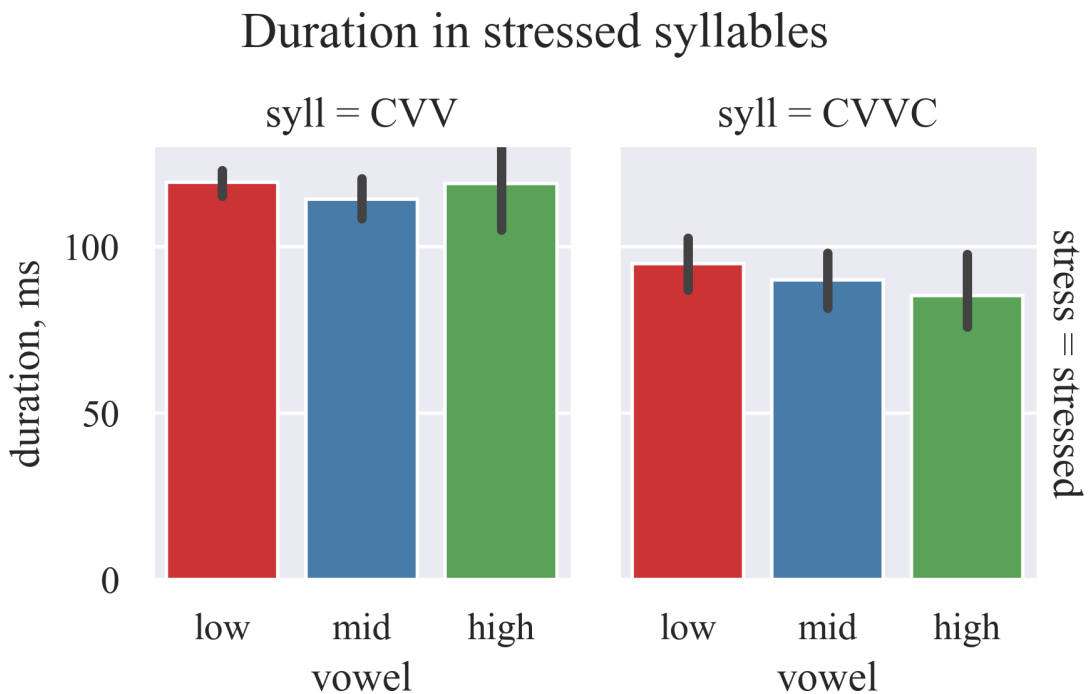
Questionnaire

The questionnaire was balanced to the best of my ability according to several parameters:

- Syllable structure: CV, CVC, CVV, CVVC
- Stress: yes, no
- Syllable count: monosyllable, polysyllabic
- Syllable position: initial, medial, final
- Vowel quality
  - low /a, ă/
  - mid /e, o, ĕ, ŏ/
  - high /i, u, ĭ, ŭ/

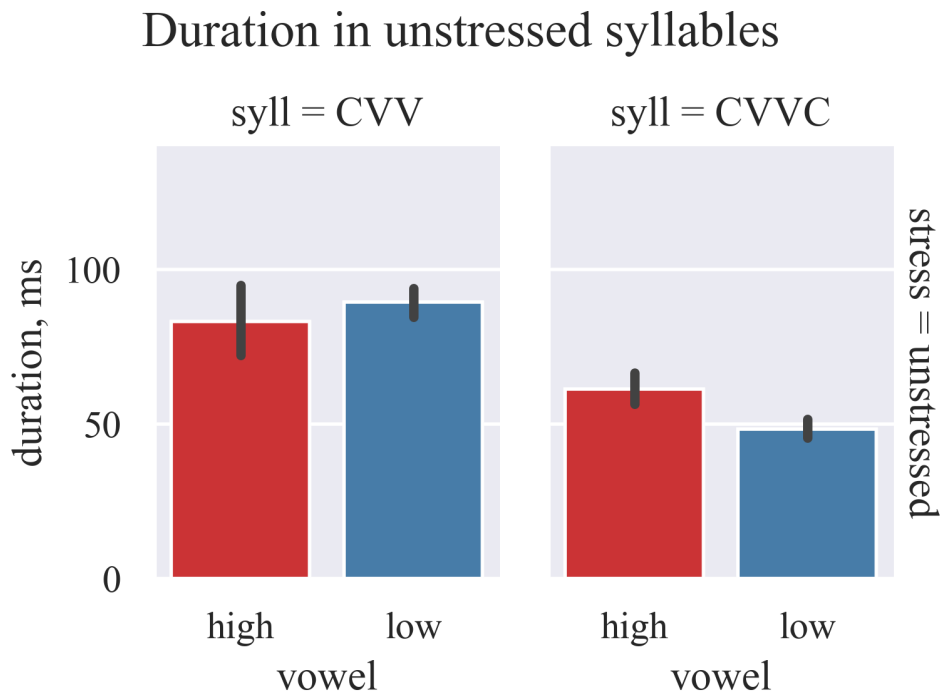
Vowel quality under stress

- Higher rank on the sonority hierarchy corresponds to greater duration (Kenstowicz 1997, de Lacy 2002, Parker 2002)
- We expect low > (mid) > high
- Under stress, vowel quality has no significant bearing on duration

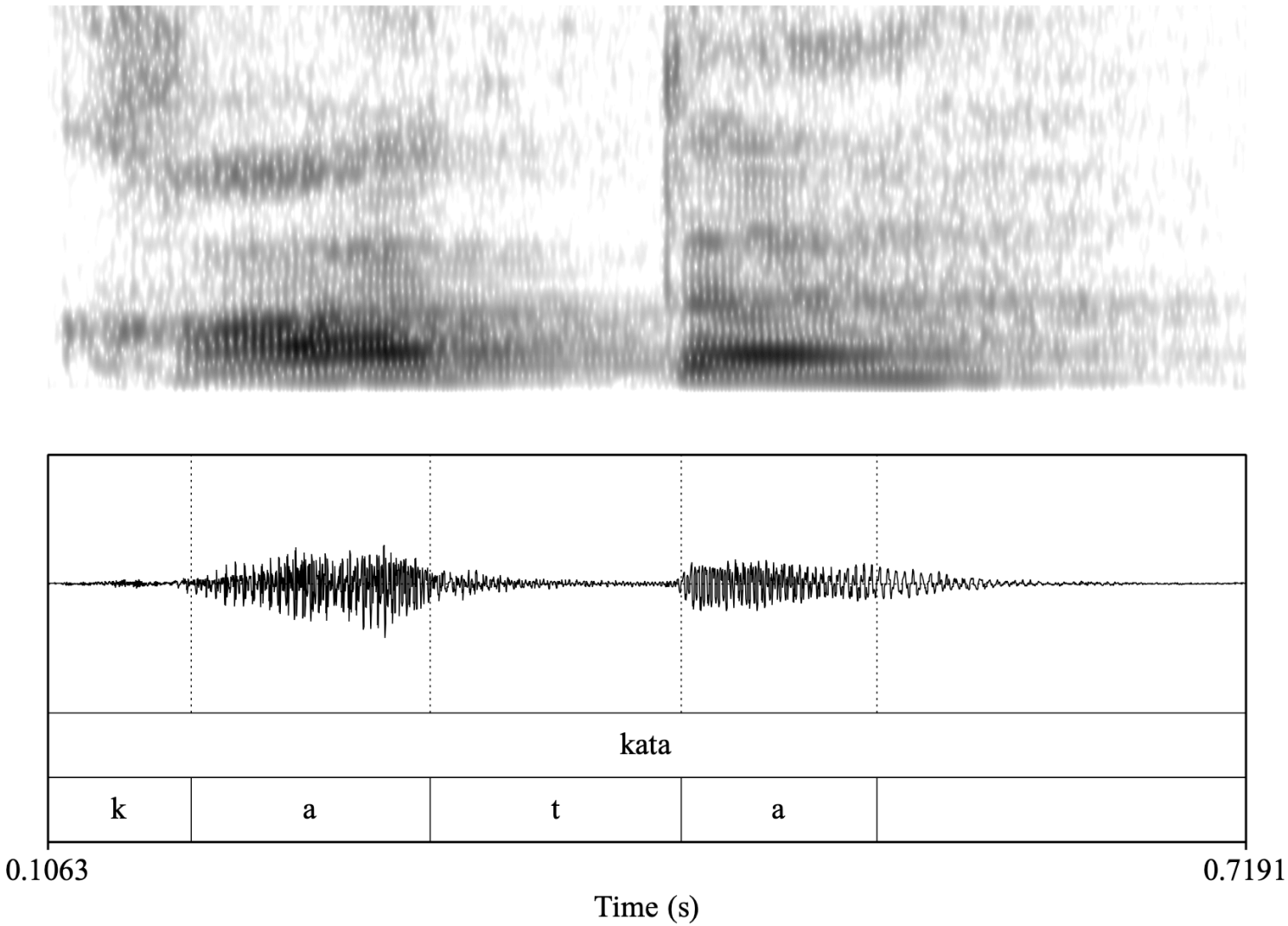


Vowel quality without stress

- In unstressed vowels, vowel quality has no significance either

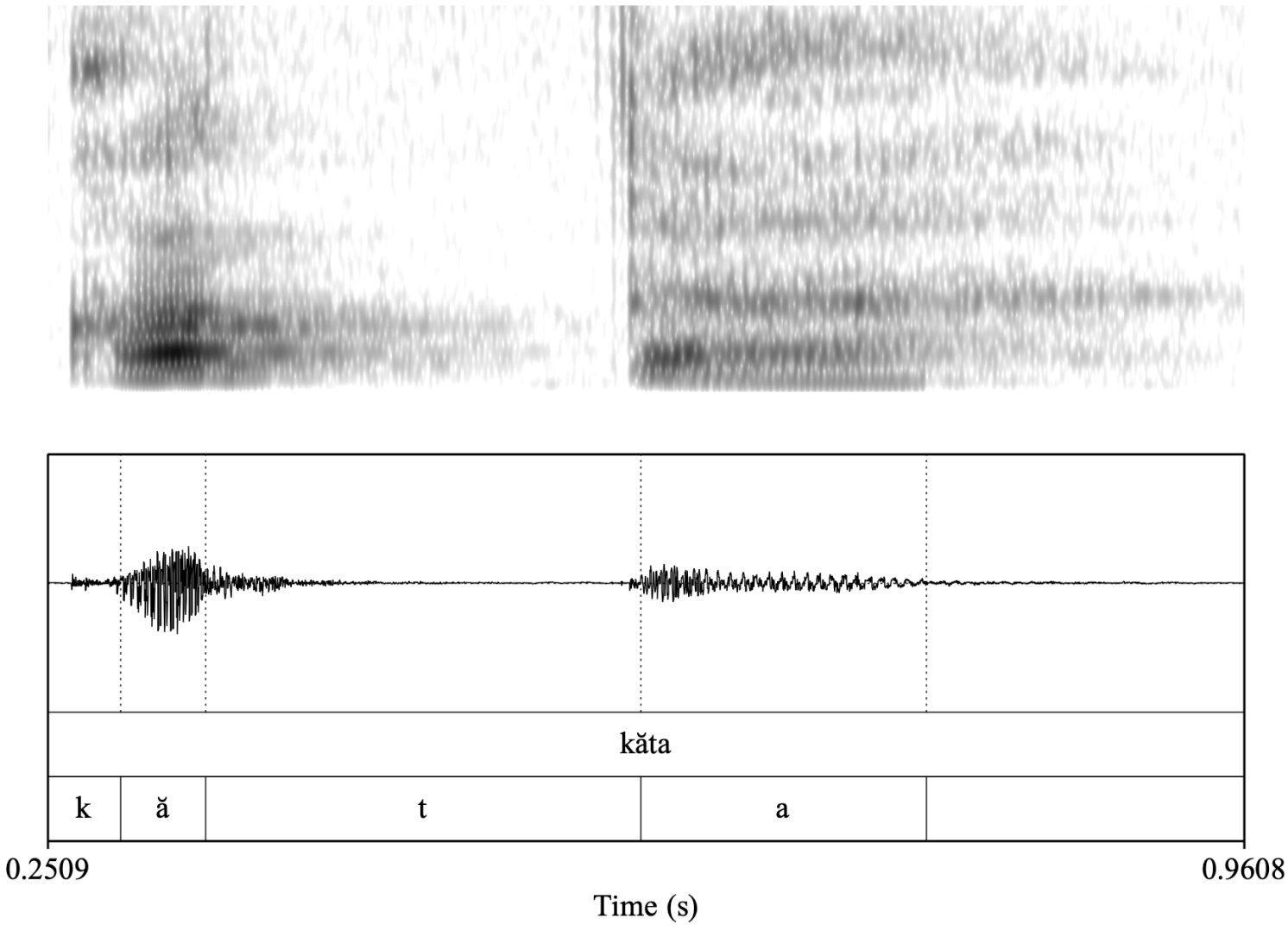


Length-duration relationship under stress: example



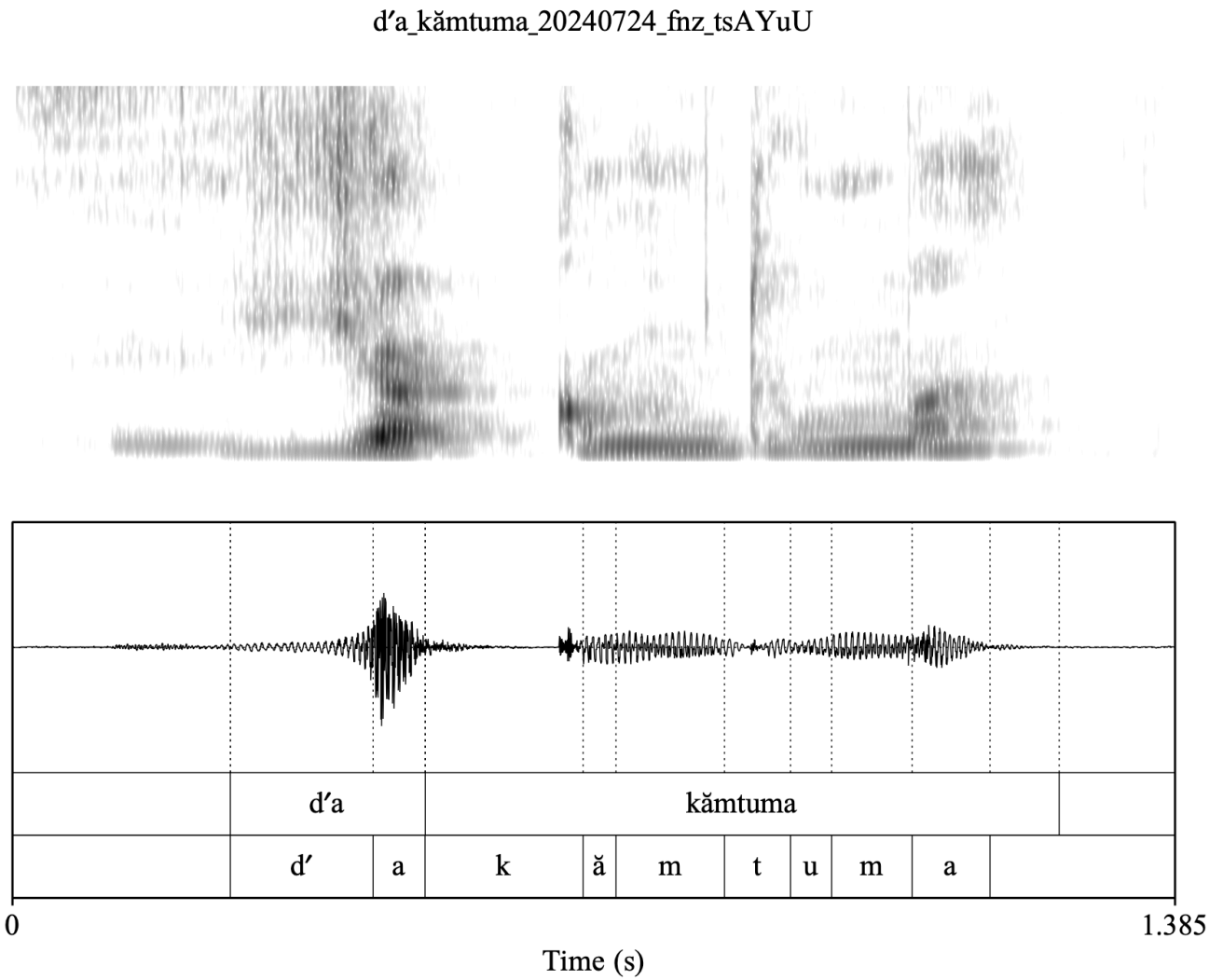
kata ‘grandmother’, tsOKT

Length-duration relationship under stress: example



kăta ‘fingernail’, tsOKT

Raddoppiamento: example



d'a kămtuma 'flour spilled', tsAYuU

Glossing abbreviations

1 first person
3 third person
ABL ablative
CN connegative
DAT dative
EVID evidentiality
POSS possessive
SG singular