Syntactically conditioned word-initial voicing in Poshkart Chuvash

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Introduction: Phonological phrase

- Prosodic Hierarchy (Selkirk 1986; Nespor, Vogel 1986/2007):

Utterance

Intonational phrase

Phonological phrase   ←   External sandhi phenomena are standard criteria, however qualitative data prevails in the literature.

(Clitic group – Nespor, Vogel)

We hope to contribute to the discussion.

Phonological / prosodic word

Foot

A few recent cross-linguistic studies concerned with (non-)convergence of the criteria, see among others (Schiering et al. 2010; Tallman 2020).

Syllable

Introduction: Voicing in Chuvash

- **Word-internal voicing**
  - after vowels or sonorants (or *v*), before vowels ([VR] ‿ [V]);

(1) /jɨtə/ [jɨdə] 'dog'
  - Standard Chuvash:
    - usually described as phonologically irrelevant (complementary distribution between voiced and unvoiced consonants);
  - Poshkart Chuvash:
    - probably phonematic (i.e. a historical shift) for the studied dialect (Maksim Fedotov, p.c.);
    - occurred in most (though not all) contexts of phonetic voicing in Standard Chuvash.

Introduction: Voicing in Chuvash

- Word-initial voicing ([VR]#_[V])

(2) *pørtɕë* 'his house'

petʲə-n børtɕ-ë (Petya-GEN house-P_3) 'Petya's house'

- no known contexts which demand or prohibit the voicing;

- a lot of variation in speech.

- No word-final voicing:

(3) *torat / *torad iltɕë* (branch took) 'he took a branch'

Materials: The field corpus of oral texts

- Only the speakers of Poshkart dialect;
- About 2 hours long;
- A large part of the corpus was recorded and transcribed by a native speaker, Veronika Mikhailovna Philippova;
- Glossed and aligned in ELAN by Natalia Logvinova.

Preliminary study 1: phonetics

- A subset of occurrences examined in Praat;

- Proportion voiced;

- "Undoubtably unvoiced" vs. "undoubtably voiced":
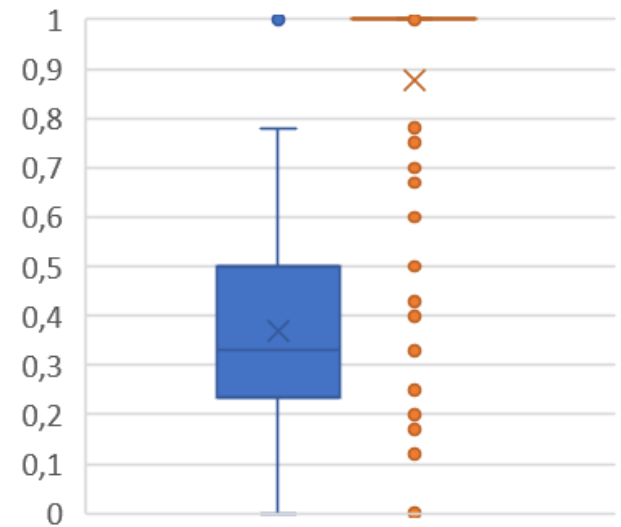
- Our data, grouped according to the perceived consonants:

- Not a perfect fit, but a decent correlation → we rely on our perception in the rest of the study.
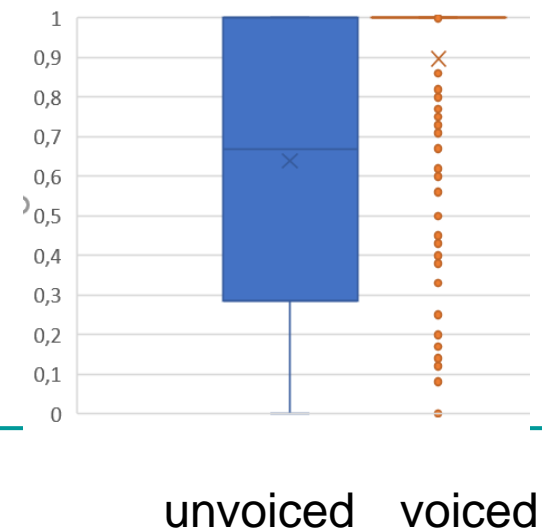
unvoiced   voiced

Preliminary study 2: consonant classes

Class	Consonant	Proportion voiced = 1	Proportion voiced < 1	ratio of 1's
	p / b	90	53	**0.6**
Plosives	t / d	149	56	**0.7**
	k / g	106	45	**0.7**
Affricate	tɕ / dʑ	12	23	**0.3**
	x / g	9	44	0.2
Fricatives	ɕ / ʑ	5	71	0.1
	s / z	1	26	0.0
	ʂ / ʐ	0	6	0.0

Our data

- Typologically expected? WALS 4: plosives allow voicing more frequently.

Materials: our sample

- Excluded:
  - **Fricatives** (see above);
  - Unassimilated Russian **loanwords**. Some of them tend to retain initial voicing in any position;
  - Long pauses (0.3 seconds and longer).

→ 1230 data points

Results: (no) dependency

- Voicing tends not to occur if there's **no dependency** relation between the words, even though such examples exist;

  *…mënle **g**ile   ̧citmelle*

  how   to_home   arrive.DEB

  'How can I arrive home?'

Dependency	Voiced	Unvoiced	% voiced
No	19	185	9%
Yes	356	542	40% (13 to 100 per cent depending on the relationship)

Results: Nominal domains

- **More voicing* in the contexts, involving a closed class of lexemes (numerals, postpositions);**
  - Alternatively: in the contexts, involving arguments/subcategorization?

Syntactic context	Unvoiced	Voiced	Ratio voiced
Adjunct (adjective / noun / demonstrative…) + noun	35	21	0.4
Numeral + noun	0	11	1.0
Noun + postposition	4	50	0.9

* Fisher's exact test, p < 0.01

Results: Clauses

- Copulas *por* (EX), *pol* 'be' tend to get voiced both in the predicate and in existential clauses*;
- Otherwise, subjects are less likely to get voiced than the predicates*

Syntactic context	Unvoiced	Voiced	Ratio voiced
Subject + lexical predicate	50	29	0.4
Object + predicate	66	122	0.6
Subject + COP	2	35	0.9
Predicate + COP	1	26	1.0

* Chi-square, $p \ll 0.01$

Results: Clauses

- Postverbal arguments and adverbials tend not to get voiced?*

Syntactic context	Unvoiced	Voiced	Ratio voiced
XV	166	225	0.6
VX	18	9	0.3

* Chi-square, p ~ 0.01

Results: Complex sentences

- ## Simultaneity converbs cause voicing much more frequently than anteriority converbs*
  - ### They are more frequent and participate in serialization and grammaticalized constructions;
- ## The verb *te* 'say' strongly tends to get voiced.

Syntactic context	Unvoiced	Voiced	Ratio voiced
Converb of anteriority + verb	7	1	0.1
Converb of simultaneity + verb	41	110	0.7
Direct/reported speech + *te* 'say'	8	78	0.9
Infinitive + verb	11	38	0.8

* Fisher's exact test, $p < 0.01$

Summary

- Across different syntactic contexts, **frequent** items tend to get voiced (postpositions, copulas, *te* 'say') or cause voicing (numerals).
  - Cf. also (Ryzhkova, ms.): under serialization, the most frequent head verb (*kaj* 'go') gets initial voicing more frequently, regardless of its meaning;
- The structures, associated with tighter syntactic cohesion:
  - objects > subjects;
  - usually placed constituents > right-moved constituents;
  - complement clause (infinitive) > adverbial clause (anteriority converbs)

Discussion

- Challenges for Prosodic Phonology along the lines of (Nespor, Vogel 1986/2007):

  - More than two groups according to frequency → varying degrees of phonological and syntactic integration?

  - Frequency-related tendencies → the effect has access to lexical information, even though phonological phrases are expected to be a post-lexical domain;

  - XV is a better context for voicing than VX, counter the predictions by Nespor and Vogel (1986/2007) for a left-branching language;

Discussion

- Frequency-related phenomena can easily be accounted for within a usage-based approach, cf. e.g. (Bybee 2001) for an account of French liaison;

- Syntactic cohesion-related phenomena could either be
  - also indirectly related to frequency (cf. the suggestion by Bybee 2011), or
  - iconicity-based, cf. Givón (1991) for a study of pausation as related to iconicity.

Plans

- Work in progress, all comments are very welcome.