Russian speakers use inflectional knowledge in choosing the diminutives of nonce words

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FDSL 17
November 20, 2024

Outline

Introduction

Russian nouns may select a number of different diminutives, and this choice is sensitive to its phonological (and other) properties (Gouskova et al., 2015; Kapatsinski, 2010; Magomedova, 2017; Magomedova & Slioussar, 2017; Polivanova, 2008 [1967])

I show: the diminutive is also sensitive to a noun's *inflectional* properties

- in the lexicon: nouns with certain *inflectional stress patterns* and *plural suffix* prefer a certain diminutive suffix
- nonce word study: speakers' choice of diminutive is influenced by these factors

Introduction

Part of a growing body of evidence (Copot & Bonami, 2023; Tabachnick, 2024) that speakers learn statistical correlations between related forms, even beyond inflection (cf. Ackerman & Malouf, 2013)

- This morphological knowledge should not be encoded in *lexical representations* or *formal morphological grammar*
- Instead, it belongs in a separate *pattern-matching mechanism* where speakers learn generalizations over lexical representations, like gradient versions of redundancy rules (Bermúdez-Otero, 2013; Jackendoff, 1975)

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Stress patterns

Russian nouns show a number of *stress patterns*:

	stress pattern *example*	stem ‘bus’	suffix ‘pencil’	mobile ‘hair’
SG	nominative	avtóbus	karandáʂ	vólos
	dative	avtóbus-u	karandaʂ-ú	vólos-u
PL	nominative	avtóbus-i	karandaʂ-í	vólos-i
	dative	avtóbus-am	karandaʂ-ám	volos-ám

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- Fixed stem stress is by far the most common
- Masculine inanimate nouns (the object of study) have somewhat common fixed suffix stress and two much less common mobile patterns (Brown et al., 1996)

Plural allomorphy

A minority of nouns within this inflection class take plural *-a*:

	example	‘hair’	‘city’
SG	nominative	vólos	górod
	dative	vólos-u	górod-u
PL	nominative	vólos-ɨ	gorod-á
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(NOTE: Things are more complicated than presented)

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- . . . Including the nominative plural (as do some monosyllabic stems with plural *-ɨ*)

Diminutive selection

Masculine nouns select for one (or more) of three basically productive diminutive suffixes:

example	'novel'	'package'	'staff'
nominative singular	román	pakʲét	pósox
dative plural	román-am	pakʲét-am	pósox-am
diminutive	román-tʃʲik	pakʲét-ʲik	posoʂ-ók

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-ók has some special (not unique) morphophonological properties:

- always stressed, even when it "shouldn't" be (*stress-dominant*)
- triggers palatalization alternation in preceding velars

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- *-ʲik* preferred by nouns ending in clusters and dispreferred by nouns ending in sonorants (Gouskova et al., 2015; Magomedova, 2017; Polivanova, 2008 [1967])
- nouns ending in velars almost always take *-ók* (Gouskova et al., 2015; Kapatsinski, 2010; Magomedova, 2017; Magomedova & Slioussar, 2017; Polivanova, 2008 [1967])
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- monosyllables disprefer *-tʃʲik* (Gouskova et al., 2015) ...
- *-ók* has a more pejorative flavor, while *-ʲik* is more affectionate (Magomedova, 2017)
- *-tʃʲik* (the newest form) is becoming more productive, while *-ók* (the oldest form) is becoming less productive (Magomedova, 2017; Magomedova & Slioussar, 2017)

Diminutive selection

Previous studies show that a noun's choice of diminutive is correlated with various properties:

- nouns with suffix or mobile stress prefer *-ók* (Gouskova et al., 2015; Polivanova, 2008 [1967])
- nouns with plural *-a* prefer *-ók*

Outline

Corpus study

Corpus study of masculine inanimate nouns in Zaliznjak (1977), diminutives from the Russian National Corpus

- 8,178 nouns, of which 1,250 (15.3%) are attested with diminutives – more frequent nouns more likely to appear with diminutives

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Numbers should be taken with a grain of salt

- forms are occasionally mis-lemmatized
- *-ʲik*, *-tʃʲik* (mostly animate), and *-ók* (often inanimate) all have non-diminutive uses and/or homographs (Guzmán Naranjo, 2019)

Distribution of diminutives

-ók is slightly less common than *-ʲik* overall . . .

	attested diminutive					
	none	*-tʃʲik*	*-ʲik*	*-ók*	*multiple*	*% -ók*
	6928	347	435	369	99	32.1%

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stress	*none*	*-tʃʲik*	*-ʲik*	*-ók*	*multiple*	*% -ók*
stem	6477	339	345	141	44	17.1%
suffix	384	8	78	153	32	64.0%
mobile	67	0	12	75	23	86.2%

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stress and plural	*attested diminutive*					
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suffix	384	8	78	153	32	64.0%
-i/ɨ	*383*	*7*	*78*	*153*	*32*	*64.3%*
-a	*1*	*1*	*0*	*0*	*0*	*0.0%*
mobile	67	0	12	75	23	86.2%
-i/ɨ	*32*	*0*	*9*	*36*	*16*	*80.0%*
-a	*35*	*0*	*3*	*39*	*7*	*92.9%*

- But it's predominant among nouns with some or all stressed inflectional suffixes
- And even more predominant among nouns with plural *-a*

Predictions

If speakers learn and productively apply statistical regularities from their language's lexicon (e.g. Albright & Hayes, 2003; Copot & Bonami, 2023; Ernestus & Baayen, 2003; Gouskova et al., 2015; Hayes et al., 2009; Tabachnick, 2024)

- Russian speakers should use diminutive *-ók* more often in words with stressed suffixes
- Russian speakers should use diminutive *-ók* even more often in words with stressed plural *-a*

Outline

Task

Nonce word presented twice, visually in frame sentences and auditorily:

- singular: мимголь
  [mʲɪmgólʲ]
- plural: мимголи / мимголи / мимголя
  [mʲɪmgólʲɪ] [mʲɪmgɐlʲí] [mʲɪmgɐlʲá]

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Must select diminutive, presented visually with frame sentence and auditorily:

- diminutive: мимгольчик / мимголик / мимголек
  [mʲɪmgólʲtʃʲɪk] [mʲɪmgólʲɪk] [mʲɪmgɐlʲók]

Details

- 87 disyllabic stress-final stimuli from Gouskova et al. (2015) and rerecorded
- 114 Russian-speaking participants from Prolific (6 more discarded for technical or linguistic issues)
- 40 trials each, one stimulus discarded → 4,509 trials
- 15 stem stress *-i*, 15 suffix stress *-i*, 10 suffix stress *-a*

(NOTE: Most masculine inanimate *-a* plural nouns have non-final stress)

Results

		selected diminutive			
stress	*plural*	*-tʃ ik*	*-ʲik*	*-ók*	*% -ók*
stem	*-i/ɨ*	573	547	570	33.7%
suffix	*-i/ɨ*	461	456	780	46.0%
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Same pattern as the lexicon (though less extreme, as is common for nonce words studies):

- preference for *-ók* in nouns with stressed plural suffix
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- preference for *-ók* in nouns with stressed plural suffix
- stronger preference for *-ók* when this plural suffix is *-a*
- *-ók* is not necessarily less productive, as previously claimed – previous studies underrepresented nouns that favor *-ók* (which may themselves be less productive)

Outline

Morphological knowledge in the grammar

- The correlation between diminutive *-ók* and plural *-a* (and suffix/mobile stress) is a component of speakers' morphological knowledge
- Generative morphosyntacticians tend to put such correlations into the symbolic grammar
- We shouldn't do that!

Hard-coding the correlation

Typical proposal: Plural *-a* and diminutive *-ók* are indexed by the same diacritic (or share a morphosyntactic representation)

- $\sqrt{\text{CITY}} \leftrightarrow \text{gorod}_{\text{A}}$
- NOM, PL $\leftrightarrow$ á / A ___
- DIM $\leftrightarrow$ ók / A ___

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plural	*-tʃʲik*	*-ʲik*	*-ók*
-i/ɨ	346	431	325
-a	1	3	39

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Problems:

- Theoretical: leads to awkward duplication of VIs
- Empirical: hard-coded default predicts much stronger experimental effect of *-a* → *ók*

Extragrammatical generalization

Better alternative: Plural *-a* and diminutive *-ók* are indexed by different diacritics (or morphosyntactic representations)

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Speakers keep track of *patterns in underlying forms* of varying strength and use them when needed to productively extend to new forms (e.g. Albright & Hayes, 2003; Ernestus & Baayen, 2003; Gouskova et al., 2015; Halle & Marantz, 2008; Hayes et al., 2009)

- A $\rightarrow$ O (nouns with plural *-a* prefer *-ók*)

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- A $\rightarrow$ O (nouns with plural *-a* prefer *-ók*)
- [dorsal]# $\rightarrow$ O (nouns ending in velars prefer *-ók*)

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- $\text{A} \rightarrow \text{O}$ (nouns with plural *-a* prefer *-ók*)
- $[\text{dorsal}]\# \rightarrow \text{O}$ (nouns ending in velars prefer *-ók*)

For new forms, speakers probabilistically assign features to underlying forms

- $[\text{mɪmgɐlʲá}] \rightarrow /\text{mimgolʲ}_{\text{A}}/ \rightsquigarrow /\text{mimgolʲ}_{\text{A, O}}/ \rightarrow [\text{mɪmgɐlʲók}]$

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Summary

- Diminutive selection in Russian is known to be sensitive to various *phonological* properties of masculine nouns (usually gradient, not categorical)
- To this we can add two inflectional properties preferring diminutive *-ók*:
  - Some or all inflectional suffixes stressed
  - Beyond this, minority (stressed) NOM/ACC plural *-a*
- These are cognitively real regularities constituting an important part of Russian speakers' morphological knowledge
- It does not behoove us to "hard-code" this knowledge into lexical representations or the morphological grammar
- Instead, they belong to a class of gradient generalizations over lexical items that are applied when needed to "fill out" incomplete lexical entries

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