

# Slavic languages and (generative) phonology

## Setting the scene

In this course, we adopt the broadly generative perspective on what counts as ‘phonology’. Some of you may be familiar with other traditions, especially those indebted to structuralist frameworks like the Prague School, or one of the Soviet schools of phonology.

### Structuralist phonology

If you would like to know about more structuralist approaches to phonology, the [freely available](#) Stephen R. Anderson. 2021. *Phonology in the twentieth century*. 2nd edn. (History and Philosophy of the Language Science 5). Berlin: Language Science Press. <https://doi.org/10.5281/zenodo.5509618> tells the story in more detail. I offer a more focused overview of Soviet frameworks in Pavel Iosad. 2022. Phonology in the Soviet Union. In B. Elan Dresher & Harry van der Hulst (eds.), *The Oxford history of phonology*, 309–330. Oxford: Oxford University Press; a preprint version is [here](#). I also recommend Eli Fischer-Jørgensen. 1975. *Trends in phonological theory: A historical introduction*. Copenhagen: Akademisk forlag (available online [via this page](#)) for an excellent history that is not written from a generative-centric perspective.

In structuralist phonology, the key notion is the **phoneme**, which may have more than one **allophone**, and the aim of the analyst is to describe an utterance in phonemic terms. Different theoretical frameworks use different approaches on how to phonemicize utterances. The central empirical facts are usually **distributions**, which determine whether a pair of elements belong to the same phoneme or not.

In generative phonology — normally associated with Chomsky & Halle,<sup>1</sup> although we will revisit this — the key aim is to identify the **underlying representation** and the **rules** that derive observed surface representations from them. While distributions play a role, the analytical emphasis is on **alternations**, because they directly demonstrate the action of rules.

<sup>1</sup> Noam Chomsky & Morris Halle. 1968. *The sound pattern of English*. New York: Harper & Row.

## What counts as phonology?

- Distributions
- Allophonic alternations
- Neutralizing alternations
- Morphophonology

*Distributions and allophony: Bulgarian vowels*

Phoneme	Stressed	Unstressed	Alternation
/a/	'glaven 'main'	gle'va 'head'	[a] ~ [ɛ]
/ɛ/	'vrɛme 'time.SG'	vreme'na 'time.PL'	[ɛ] ~ [e]
/ɔ/	'kɔsəm 'hair'	kos'mat 'hairy'	[ɔ] ~ [o]
/i/	'tip 'type'	ti'pət 'type.DEF'	[i]
/u/	'kup'ə 'buy.PRS.1SG'	ku'puvəm 'buy.IPFV.PRS.1SG'	[u]
/ə/	'tək 'bow'	lə'kət 'bow.DEF'	[ɔ] ~ [ə]

For the traditional view, see Tilkov;<sup>2</sup> for a detailed recent empirical study, see Sabev.<sup>3</sup>

The pairs [a] ~ [ɛ], [ɛ] ~ [e] etc. are in **complementary distribution** determined by stress. In structuralist phonology, we say they belong to the same phoneme; the basic variant is the one found in stressed syllables.

In generative phonology, we say that the unstressed variants derive by a **rule** that applies in unstressed position. In stressed syllables, no rule applies and the vowel in the underlying representation surfaces unchanged. Because stress in Bulgarian is mobile, this machinery creates **alternations** where the same morpheme occurs in different shapes depending on where stress falls: [glav] ~ [glɛv], [mɔr] ~ [mor] etc. These are **allophonic**<sup>4</sup> alternations, because the alternating segments do not contrast underlyingly.

<sup>2</sup> Dimitŭr Tilkov (ed.). 1982. *Gramatika na sŭvremenniya bŭlgarskiya knizhoven ezik*. Vol. 1: *Fonetika*. Sofia: Izdatelstvo na Bŭlgarskata akademiya na naukite.

<sup>3</sup> Mitko Sabev. 2023. Unstressed vowel reduction and contrast neutralisation in western and eastern Bulgarian: A current appraisal. *Journal of Phonetics* 99. 1012–1042. <https://doi.org/10.1016/j.wocn.2023.101242>.

<sup>4</sup> Or 'non-neutralizing'

*Neutralizing alternations: Bulgarian soft consonants*

Most Bulgarian consonants come in hard (plain) and soft (palatalized) versions, which contrast before back and central vowels.

Following vowel	Hard	Soft
[a]	baɫ 'ball'	b'ɪaɫ 'white'
[ɔ]	gle'sɔt 'voice.DEF'	gle's'ɪɔt 'read.PRS.3PL'
[u]	kup 'pile'	k'ɪup 'cauldron'
[ɔ]	po'zɔr 'shame'	po'z'ɪɔr 'poseur'

Word-finally, only hard consonants are allowed. Many lexical items alternate accordingly.

Word-final	Prevocalic	Gloss
sən	sə'n'ɪɔt	'dream'

Word-final	Prevocalic	Gloss
kɔn	'kɔnʲət	'horse'
krat	'kralʲət	'king'
vat	'vatət	'rampart'
zvɔn	zvə'nɔt	'peal'
trɔn	'trɔnət	'throne'

These alternations involve the pairs [n] ~ [nʲ], [t] ~ [tʲ], which are otherwise distinct phonemes in the language. These are **neutralizing** alternations. In this case, the outcome of the neutralization is unambiguous: it is the hard consonant. Structuralist schools differ in their analysis of these, but the critical property is that they are obligatory — that is, they occur whenever the context is met. For this reason they can be called **automatic**.

#### *Morphophonological alternations: Bulgarian palatalization*

Before the front vowels [ɛ i], the hard-soft contrast is neutralized. For most consonants, the outcome is analysed as hard.<sup>5</sup>

<sup>5</sup> We will revisit this

Contrast	Neutralization	Gloss
bʲata	bɛli	'white.FEM.SG ~ PL'
banʲa	bani	'bath.SG ~ PL'
nʲama	nemi	'mute FEM.SG ~ PL'
zɛmʲa	zɛmi	'earth.SG ~ PL'

Velar consonants neutralize to soft in the same context, with alternations.

Hard	Soft	Gloss
də'ga	də'gʲi	'arc'
'bitka	'bitkʲi	'battle'
'ɔrex	'ɔrexʲi	'walnut'

But other [i ɛ] suffixes do different things.

Hard	Palatalization I	Palatalization II
vɔtk 'wolf'	'vɔtʲsi 'PL'	'vɔtʲji 'ADJ'
'pɔdvigət 'feat.DEF'	'pɔdvizi 'PL'	pod'vižen 'movable'
siro'max 'pauper'	siro'masi 'PL'	sirome'fjija 'poverty'

In structuralist phonology, such alternations are generally considered **morphophonological**<sup>6</sup> and usually considered to be different in kind to allophony and obligatory neutralization.

<sup>6</sup> Sometimes also **historic**, or **non-automatic** to distinguish from automatic neutralization.

### *Slavic phonology and phonological theory*

All of these types of alternations are pervasive across the Slavic languages. A lot of Western phonological theory was developed in Slavic-speaking countries, and had to deal with all of these issues. I would argue that in fact these properties of the Slavic languages were a key, and perhaps underappreciated, driver in the development of many flavours of phonology — including generative phonology.

#### Slavic phonology or Russian phonology?

As we will see, a lot of theory development has centred Russian. This undoubtedly reflects the dynamics of political and cultural power, and we should reflect on that. Russian is also a relatively conservative language with regard to sound change, and that is in some respects an advantage in the context of phonology, for reasons that will become clear soon. To what extent Russian-focused scholarship has occluded the patterns is a theme we will keep returning to.

### *The beginnings: The Kazan School*

The Kazan phonologists (who were Poles working, at least to start with, in Imperial Russia) are usually credited the idea of the phoneme as an abstract representation distinct from the phonetic substance, but did not yet link it very explicitly to contrast. They did pay a lot of attention to alternations, and especially the distinction between live/automatic and historical/non-automatic, where Polish and Russian provided fertile ground.

### *The St Petersburg (Leningrad) School*

Lev Shcherba is usually credited for developing lexical distinctiveness as the basis for defining the phoneme. He worked in Russia, and focused a lot on Russian; he also had a strong background in Slavic phonology, having written a thesis on a Sorbian dialect. His primary interest was in phonetics: alternations and neutralization were not as central to his theoretical approach.

*Moscow to Prague: Nikolai Trubetzkoy*

## 💡 Phonology and the Prague Circle

Members of the Prague Linguistic Circle, including Trubetzkoy and (especially) Jakobson themselves, had wide-ranging interests beyond phonology and indeed linguistics, but here we focus on the phonology part. For a book-length treatment of the Prague Circle, see Jindřich Toman. 1995. *The magic of a common language: Jakobson, Mathesius, Trubetzkoy, and the Prague Linguistic Circle* (Current Studies in Linguistics 25). Cambridge, MA: MIT Press; I also recommend Patrick Sériot. 2014. *Structure and the whole: East, west and non-Darwinian biology in the origins of structural linguistics*. Trans. from the French by Amy Jacobs-Colas. Berlin: Mouton. Trans. of *Structure et totalité: Les origines intellectuelles du structuralisme en Europe centrale et orientale*. 2nd edn. Limoges: Lambert-Lucas, 2012 for the intellectual background.

Among theoretical phonologists, Nikolai Trubetzkoy is widely seen as the founding father of classic structuralist phonology, for his *Principles of phonology*.<sup>7</sup> His interests were strongly focused on Slavic philology generally: a new historical grammar of the Slavic languages was his unfinished *magnum opus*.<sup>8</sup> Trubetzkoy's intellectual background is linked to Moscow, where he trained before leaving the country.

A notable feature of Trubetzkoy's approach is the strict separation between allophonic alternation, automatic neutralization (implemented by positing underspecified *archiphonemes*), and morphophonology, considered to be a separate component of grammar. The theory of non-automatic alternations remained relatively underdeveloped,<sup>9</sup> but it is clear that for him it is different in kind from automatic phonology.

*Moscow to Prague to Harvard: Roman Jakobson*

Another product of Moscow, Jakobson was Trubetzkoy's close collaborator in Prague, where he stayed until the start of the war. He made significant contributions to the analysis of Russian, Czech, and Serbo-Croatian phonology within the Praguian mould. After the war, he moved to the US and developed his theory in new directions.

In earlier work, Jakobson, like Trubetzkoy, was interested in the relationship of elements within an individual system. This can be seen in his highly influential *Remarks on the phonological development of Russian compared to the other Slavic languages*,<sup>10</sup> which offered an early example of Praguian phonological analysis and has been hugely influential in the synchronic and

<sup>7</sup> Nikolai S. Trubetzkoy. 1939. *Grundzüge der Phonologie* (Travaux du Cercle linguistique de Prague 7). Prague.

<sup>8</sup> see also Nikolai S. Trubetzkoy. 1954. *Altkirchenslavische Grammatik: Schrift-, Laut- und Formenlehre*. Rudolf Jagoditsch (ed.). Wien: In Kommission bei Rudolf M. Rohrer.

<sup>9</sup> but see Nikolai S. Trubetzkoy. 1934. *Das morphologische System der russischen Sprache* (Travaux du Cercle linguistique de Prague 5.2). Prague: Jednota československých matematiků a fyziků.

<sup>10</sup> Roman Jakobson. 1929. *Remarques sur l'évolution phonologique du russe comparée à celle des autres langues slaves* (Travaux du Cercle linguistique de Prague 2). Prague: Jednota československých matematiků a fyziků. Trans. as *Remarks on the phonological evolution of Russian in comparison with the other Slavic languages*. Trans. by Ronald F. Feldstein. Cambridge, MA & London: The MIT Press, 2018.

diachronic phonological analysis of the Slavic languages ever since.

Later, Jakobson became interested in information theory and the notion of ‘efficiency’.<sup>11</sup> This led him towards developing more abstract analyses that were not limited to observing surface patterns of contrast and neutralization. A key moment was the publication of *Russian conjugation*.

<sup>11</sup> see B. Elan Dresher & Daniel Currie Hall. 2022. Developments leading towards generative phonology. In B. Elan Dresher & Harry van der Hulst (eds.), *The Oxford history of phonology*, 372–395. Oxford: Oxford University Press.

### *The Russian conjugation moment*

The traditional analysis of Slavic verbal inflection posits two stems (the infinitive stem and the present-tense stem) for each verb. Their distribution across the paradigm is seen as purely morphological. How the shapes of the two stems are related is also not predictable: it is a lexical property of the verb.

Table 7: Russian verbal paradigm: *plakat’* ‘to cry’

Infinitive stem		Present-tense stem			
Infinitive		plaka-t’		1SG	plač-u
	SG.M	plaka-l		2SG	plač-e-š
Past tense	SG.F	plaka-l-a	Present tense	3SG	plač-e-t
	SG.N	plaka-l-o		1PL	plač-e-m
Past participle	PL	plaka-l-i		2PL	plač-e-te
		plaka-vš-		3PL	plač-ut
		(za)plaka-	Imperative	2SG	plač
		nn-	Present participle		plač-ušč-

- In some verbs, the infinitive stem is formed by adding a vowel to the present-tense stem: *plakat’* ~ *plaču*
- In other verbs, the infinitive stem is formed by truncation of the present-tense stem: *dela-t’* ~ *delaj-u* ‘do’
- In yet others, both end in a consonant: *nes-ti* ~ *nes-u* ‘carry’

#### ! Jakobson’s big generalization

The general case:

- The ‘infinitive’ stem ends in a vowel and precedes consonant-initial suffixes
- The ‘present-tense’ stem ends in a consonant and precedes vowel-initial suffixes

All forms are derived from a single stem by applying a sequence of rewrite rules, notably deletion of a vowel before a vowel and deletion of a

consonant before a consonant.

Verb	Infinitive stem	Present-tense stem
'cry'	plaka-ti → plakat	plaka-u → plaču
'do'	delaj-ti → delat'	delaj-u → delaju
'carry'	nes-ti → nesti	nes-u → nesu

The palatalization  $k \rightarrow \check{c}$  (and others like it) occurs before a deleted stem vowel

This analysis has two properties of historic importance:

- The alternations in question sit firmly within the 'historic' (morphophonological) sphere: European structuralists did not really consider this to be phonology<sup>12</sup>
- Efficiently capturing generalizations takes precedence over sticking to surface patterns

#### *Riga to Harvard to MIT: Morris Halle*

Morris Halle worked under Jakobson, and some of his earliest work is directly developing Jakobson's new approaches, such as his *Old Church Slavonic conjugation*. The approach based on rewrite was front and centre in his *Sound pattern of Russian*, a work now not much read, but often seen as a precursor to the *Sound pattern of English*.

With the basic structure of the verbal paradigm being very similar across the Slavic languages, the Jakobsonian generalization was widely applicable to other languages. In applying the method to Old Church Slavic, Halle<sup>13</sup> discovered more rules that unified apparently disparate stems. Crucially, what such rules often did was reproduce the diachronic development.

Verb	Stem	Infinitive	PRS.1SG	AOR.3SG
'cut'	rěza-	rěza-ti	rěža-ǫ	rěza-s → rěza
'know'	znaj-	znaj-ti	znaj-ǫ	znaj-s → zna
'lead'	ved-	ved-ti → vesti	ved-ǫ	ved-e-s → vede
'cook'	pek-	pek-ti → pešti	pek-ǫ	pek-e-s → peče
'curse'	klъn-	klъn-ti → klęti	klъn-ǫ	klъn-s → klę
'blow'	dъm-	dъm-ti → dǫti	dъm-ǫ	dъm-s → dǫ

#### *Expanding the scope of phonology*

Arguably the more famous innovation by Halle was the analysis of voicing assimilation in Russian, originally presented in a talk entitled *On the phonetic rules of Russian* and reproduced in Halle.<sup>14</sup>

<sup>12</sup> It is probably not a coincidence that in this paper, written soon after his move to the US, Jakobson approvingly cites Bloomfield, who dealt with morphophonology in the languages of North America using rewrite rules. For more on the links between generative phonology and North American 'descriptivism', see John A. Goldsmith. 2008. Generative phonology in the late 1940s. *Phonology* 25(1). 37–59. <https://doi.org/10.1017/s0952675708001395>.

<sup>13</sup> Morris Halle. 1951. The Old Church Slavonic conjugation: With an appendix on the Old Russian conjugation. *Word* 7(2). 155–167. <https://doi.org/10.1080/00437956.1951.11659400>.

<sup>14</sup> Morris Halle. 1959. *The sound pattern of Russian: A linguistic and acoustical investigation*. 's Gravenhage: Mouton.

Russian shows final devoicing and voicing assimilation of obstruents across word boundaries. In most cases, the alternations we observe involve segments that are otherwise different phonemes: they are automatic neutralizing alternations. The affricates [tʃ] and [tʂ] lack phonemic voiced counterparts, but still undergo assimilation: for these segments, the alternations are allophonic. However, they are patently the same process, so splitting them into two alternations — one neutralizing and one allophonic — misses the generalization.

Gloss	Word-final	Prevo-calic	Assimilation context	Alternation
'cat'	kɔt	ke'tʲi	kɔd bʲi	/t/ ~ /t/ ~ /d/
'code'	kɔt	'kɔdʲi	kɔd bʲi	/t/ ~ /d/ ~ /d/
'night'	nɔtʃʲ	'nɔtʃʲi	nɔdʒʲ bʲi	/tʃʲ/ ~ /tʃʲ/ ~ /tʃʲ/ [dʒʲ]

It is commonly assumed that this was the killer argument against the 'taxonomic phoneme', which convinced phonologists (in North America at least) that derivational accounts aiming to capture generalizations without regard to surface contrast or phonemic status are superior to earlier approaches.

This is a little bit of a myth: see Anderson<sup>15</sup> on the contemporary reception of Halle's work, Kiparsky<sup>16</sup> on the fact that the duplication identified by Halle was well known prior to his analysis, and Dresher & Hall<sup>17</sup> on the wider repercussions. Still, Halle's analysis of Russian remains central to the history of the field.

### ! The big analytical innovation

- Premise: the grammar consists of rewrite rules
- Premise: rewrite rules handle historical alternations, live neutralizing alternations, and allophony
- Premise: rules responsible for allophony manipulate phonological units
- Conclusion: rewrite rules manipulate phonological units

### *The classic generative approach to Slavic phonology*

For the rest of the week, we will look at some specific examples of how Slavic languages were analysed by generative phonologists from the early 1960s onwards.

- Large premium on **generality** and **economy**
- Wide empirical scope: aim for a comprehensive analysis of all kinds of patterns within the same system

<sup>15</sup> Stephen R. Anderson. 2000. Reflections on "On the Phonetic Rules of Russian". *Folia Linguistica* 34(1-2). 11-28. <https://doi.org/10.1515/flin.2000.34.1-2.11>.

<sup>16</sup> Paul Kiparsky. 2018. Formal and empirical issues in phonological typology. In Larry M. Hyman & Frans Plank (eds.), *Phonological typology* (Phonetics and Phonology 23), 54-106. Berlin: De Gruyter.

<sup>17</sup> B. Elan Dresher & Daniel Currie Hall. 2020. The road not taken: *The Sound Pattern of Russian* and the history of contrast in phonology. *Journal of Linguistics* 57(2). 405-444. <https://doi.org/10.1017/s0022226720000377>.



- In practice: underlying representations that reproduce earlier historical stage, rules that recap the diachronic development

### 💡 Diachrony and synchrony

In many ways, this is not really surprising: today's irregular morphology is often yesterday's regular sound change, so an economical account that captures all the generalization often **is** the diachronic one.

This was **a feature, not a bug!** The fact that underlying representations stuck closely to earlier stages was treated as a discovery: URs changed more slowly than surface representations.

## The received analysis

### From Slavic phonology to generative phonology

- Further work on Slavic itself<sup>18</sup>
- Programmatic development of the approach<sup>19</sup>
- Incorporation of links to new syntactic theories through notions like immediate constituency analysis and the cycle<sup>20</sup>
- Chomsky & Halle<sup>21</sup> as the crystallization of the generative approach to phonology

### i Was SPE a paradigm shift?

SPE is often treated as ushering in a Kuhnian scientific revolution — a paradigm shift that made what came before it largely irrelevant to the conduct of 'normal science'. Is it true?

From a Slavic perspective, SPE most certainly did not cut short the development of the Trubetzkoy — Jakobson — pre-SPE Halle line. In the guise of a 'morpho-phonological' approach, it remained arguably the mainstream view of phonology in Slavonic studies departments in North America for a long time, and remains strong even now. For some reflections from the Slavic side, see Michael S. Flier. 1974. Lightner on Russian phonology. *Russian Linguistics* 1(3–4). 295–311. <https://doi.org/10.1007/bf02551680>, Michael Shapiro. 1974. Morphophonemics as semiotic. *Acta Linguistica Hafniensia* 15(1). 29–49. <https://doi.org/10.1080/03740463.1974.10414880>, or Roland Sussex. 1976. On the notions "underlying structure" and "process" in modern Slavic linguistics. *International Journal of Slavic Linguistics and Poetics* 22. 19–24. For views from the generative side, see Christina Y. Bethin. 2006. Slavic phonology in the United States. *Glossos* 8. [http://slaviccenters.duke.edu/uploads/media\\_items/8be](http://slaviccenters.duke.edu/uploads/media_items/8be)

<sup>18</sup> Morris Halle. 1963. O pravilakh russkogo spryazheniya (predvaritel'noe soobshchenie). In *American contributions to the Fifth International Congress of Slavists, Sofia, September 1963*. Vol. 1: *Linguistic contributions*, 113–132. The Hague: Mouton; Theodore M. Lightner. 1963. Preliminary remarks on the morphophonemic component of Polish. In *Research Laboratory on Electronics quarterly progress report 71*, 220–234. Massachusetts Institute of Technology. HDL: [1721.1/53919](https://hdl.handle.net/1721.1/53919); Theodore M. Lightner. 1965. *Segmental phonology of Modern Standard Russian*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

<sup>19</sup> Morris Halle. 1962. Phonology in generative grammar. *Word* 18(1–3). 54–72. <https://doi.org/10.1080/00437956.1962.11659765>.

<sup>20</sup> Halle, "O pravilakh russkogo spryazheniya (predvaritel'noe soobshchenie)"; Theodore M. Lightner. 1967. On the phonology of Russian conjugation. *Linguistics* 5. 35–55. <https://doi.org/10.1515/ling.1967.5.35.35>.

<sup>21</sup> Chomsky & Halle, *SPE*.

[thin.original.pdf](#) (29 June, 2017) and Darya Kavitskaya. 2017. Some recent developments in Slavic phonology. *Journal of Slavic Linguistics* 25(2). 387–414. <http://www.jstor.org/stable/26535071>.

All week, I will argue that most non-specialist phonologists who have dealt with Slavic have really dealt with the Jakobson-Halle-Lightner version of it, and this is something we should problematize more.

### *Lightner vs. Modern Standard Russian*

To give you a sense of this approach, here is the general picture of the Russian vowel system in Lightner.<sup>22</sup>

<sup>22</sup> Lightner, “Segmental phonology of Modern Standard Russian”.

If this looks familiar to you from Slavic historical phonology... you’re not wrong.

Surface vowel	Underlying vowel	Comment
[i]	/ī/ /ū/	Fronting in some contexts
[ɨ]	/ū/ /ou/	
[u]	/eu/ /oN/	Source of surface [C <sup>l</sup> u] When nasal is syllable-final
	/ě/	When not → [o]
[e]	/ĩ/ /ē/	By the Lower rule for yers, when not → [o]   When not alternating with o
	/ǒ/	
[o]	/ũ/ /ĩ ě/	By the Lower rule for yers When subject to e → o
	/ō/	
[a]	/ē/ /eN iN/	In cases like <i>kričat</i> ‘shout’ /krīk-ē-tī/ When nasal is syllable-final; source of surface [C <sup>l</sup> a]

Here are some underlying representations:

SR	UR	Gloss
žog	gǫg-l-ũ	burn-PST-SG.M
žgla	gǫg-l-ō	burn-PST-SG.F
pisat’	pīs-ō-tī	write-INF
pišu	pīs-ō-ě-m	write-PRS.1SG
načat’	nō-kīn-tī	begin.PFV-INF

SR	UR	Gloss
načnĕt	nō-kĭn-ě-t	begin.PFV-PRS.1SG
načĭnat'	nō-kĭn-ō-tĭ	begin.IPFV-INF

And here is a real derivation:

1. Pre-cyclic rule:  $/(pl\ddot{o}t+i+i)+m/ \rightarrow ((pl\ddot{o}t+i+u)+m)$
2. First cycle:  $(pl\ddot{o}t+i+u) \rightarrow (pl\ddot{o}t+ju) \rightarrow (pl\ddot{o}t^j+j+u)$
3. Second cycle:  $(pl\ddot{o}t^j+j+u+m) \rightarrow (pl\ddot{o}t^j+\ddot{u}+m) \rightarrow (pl\ddot{o}t^j+j+\ddot{u}) \rightarrow (pl\ddot{o}č'j\ddot{u}) \rightarrow [pl\ddot{a}č'j\ddot{u}]$

Although this seems extreme, the basic idea proved remarkably resilient. Tomorrow, we look at consonant palatalization.

## References

- Anderson, Stephen R. 2000. Reflections on “On the Phonetic Rules of Russian”. *Folia Linguistica* 34(1-2). 11–28. <https://doi.org/10.1515/flin.2000.34.1-2.11>.
- Anderson, Stephen R. 2021. *Phonology in the twentieth century*. 2nd edn. (History and Philosophy of the Language Science 5). Berlin: Language Science Press. <https://doi.org/10.5281/zenodo.5509618>.
- Bethin, Christina Y. 2006. Slavic phonology in the United States. *Glossos* 8. [http://slaviccenters.duke.edu/uploads/media\\_items/8bethin.original.pdf](http://slaviccenters.duke.edu/uploads/media_items/8bethin.original.pdf) (29 June, 2017).
- Chomsky, Noam & Morris Halle. 1968. *The sound pattern of English*. New York: Harper & Row.
- Dresher, B. Elan & Daniel Currie Hall. 2020. The road not taken: *The Sound Pattern of Russian* and the history of contrast in phonology. *Journal of Linguistics* 57(2). 405–444. <https://doi.org/10.1017/s0022226720000377>.
- Dresher, B. Elan & Daniel Currie Hall. 2022. Developments leading towards generative phonology. In B. Elan Dresher & Harry van der Hulst (eds.), *The Oxford history of phonology*, 372–395. Oxford: Oxford University Press.
- Dresher, B. Elan & Harry van der Hulst (eds.). 2022. *The Oxford history of phonology*. Oxford: Oxford University Press.
- Fischer-Jørgensen, Eli. 1975. *Trends in phonological theory: A historical introduction*. Copenhagen: Akademisk forlag.
- Flier, Michael S. 1974. Lightner on Russian phonology. *Russian Linguistics* 1(3-4). 295–311. <https://doi.org/10.1007/bf02551680>.
- Goldsmith, John A. 2008. Generative phonology in the late 1940s. *Phonology* 25(1). 37–59. <https://doi.org/10.1017/s0952675708001395>.

- Halle, Morris. 1951. The Old Church Slavonic conjugation: With an appendix on the Old Russian conjugation. *Word* 7(2). 155–167. <https://doi.org/10.1080/00437956.1951.11659400>.
- Halle, Morris. 1959. *The sound pattern of Russian: A linguistic and acoustical investigation*. 's Gravenhage: Mouton.
- Halle, Morris. 1962. Phonology in generative grammar. *Word* 18(1–3). 54–72. <https://doi.org/10.1080/00437956.1962.11659765>.
- Halle, Morris. 1963. O pravilakh russkogo spryazheniya (predvaritel'noe soobshchenie). In *American contributions to the Fifth International Congress of Slavists, Sofia, September 1963*. Vol. 1: *Linguistic contributions*, 113–132. The Hague: Mouton.
- Iosad, Pavel. 2022. Phonology in the Soviet Union. In B. Elan Dresher & Harry van der Hulst (eds.), *The Oxford history of phonology*, 309–330. Oxford: Oxford University Press.
- Jakobson, Roman. 1929. *Remarques sur l'évolution phonologique du russe comparée à celle des autres langues slaves* (Travaux du Cercle linguistique de Prague 2). Prague: Jednota československých matematiků a fyziků. Trans. as *Remarks on the phonological evolution of Russian in comparison with the other Slavic languages*. Trans. by Ronald F. Feldstein. Cambridge, MA & London: The MIT Press, 2018.
- Kavitskaya, Darya. 2017. Some recent developments in Slavic phonology. *Journal of Slavic Linguistics* 25(2). 387–414. <http://www.jstor.org/stable/26535071>.
- Kiparsky, Paul. 2018. Formal and empirical issues in phonological typology. In Larry M. Hyman & Frans Plank (eds.), *Phonological typology* (Phonetics and Phonology 23), 54–106. Berlin: De Gruyter.
- Lightner, Theodore M. 1963. Preliminary remarks on the morphophonemic component of Polish. In *Research Laboratory on Electronics quarterly progress report 71*, 220–234. Massachusetts Institute of Technology. HDL: [1721.1/53919](https://hdl.handle.net/1721.1/53919).
- Lightner, Theodore M. 1965. *Segmental phonology of Modern Standard Russian*. Cambridge, MA: Massachusetts Institute of Technology dissertation.
- Lightner, Theodore M. 1967. On the phonology of Russian conjugation. *Linguistics* 5. 35–55. <https://doi.org/10.1515/ling.1967.5.35.35>.
- Sabev, Mitko. 2023. Unstressed vowel reduction and contrast neutralisation in western and eastern Bulgarian: A current appraisal. *Journal of Phonetics* 99. 1012–1042. <https://doi.org/10.1016/j.wocn.2023.101242>.
- Sériot, Patrick. 2014. *Structure and the whole: East, west and non-Darwinian biology in the origins of structural linguistics*. Trans. from the French by Amy Jacobs-Colas. Berlin: Mouton. Trans. of *Structure et totalité: Les origines intellectuelles du structuralisme en Europe centrale et orientale*. 2nd edn. Limoges: Lambert-Lucas, 2012.
- Shapiro, Michael. 1974. Morphophonemics as semiotic. *Acta Linguistica Hafniensia* 15(1). 29–49. <https://doi.org/10.1080/03740463.1974.10414880>.

- Sussex, Roland. 1976. On the notions “underlying structure” and “process” in modern Slavic linguistics. *International Journal of Slavic Linguistics and Poetics* 22. 19–24.
- Tilkov, Dimitŭr (ed.). 1982. *Gramatika na sŭvremenniya bŭlgarskiya knizhoven ezik*. Vol. 1: *Fonetika*. Sofia: Izdatelstvo na Bŭlgarskata akademiya na naukite.
- Toman, Jindřich. 1995. *The magic of a common language: Jakobson, Mathesius, Trubetzkoy, and the Prague Linguistic Circle* (Current Studies in Linguistics 25). Cambridge, MA: MIT Press.
- Trubetzkoy, Nikolai S. 1934. *Das morphonologische System der russischen Sprache* (Travaux du Cercle linguistique de Prague 5.2). Prague: Jednota československých matematiků a fyziků.
- Trubetzkoy, Nikolai S. 1939. *Grundzüge der Phonologie* (Travaux du Cercle linguistique de Prague 7). Prague.
- Trubetzkoy, Nikolai S. 1954. *Altkirchenslavische Grammatik: Schrift-, Laut- und Formenlehre*. Rudolf Jagoditsch (ed.). Wien: In Kommission bei Rudolf M. Rohrer.