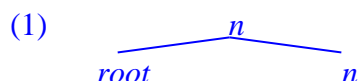


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### 1. INTRODUCTION: THE ARCHITECTURE OF DECLENSION CLASS AND $\Phi$

The now-standard DM assumption: roots have no lexical category (see Josefsson 1995, 1997, 1998, 2001, Marantz 2001, Arad 2003, Embick and Marantz 2006, Embick and Noyer 2007)



$\Phi$ -features are those of the **inherent** properties of an NP that are reflected in its **agreement** (and anaphora)

The **declension class** of a noun (a.k.a. its *word class*), while being inherent, only affects the morphological realization of the case morphology of the noun itself

Usually phi-features are assumed to be linked to dedicated loci in the extended NP:

- Gender & animacy: introduced by the head noun (or by nP/GenP)
- Number: determined by the presence of number morphology (NumP)
- Person: exclusively property of pronouns (i.e., of D°)
- Definiteness: correlated with D°

The actual picture is more complicated:

- gender: mixed agreement requires gender higher in the NP
- number: pluralia tantum are lexically determined

Do we need two mechanisms of engendering phi-features: in the syntax and in the lexicon?

#### 1.1. Background: the Russian $\Phi$

**Animacy:** governs the accusative case syncretism: accusative surfaces as genitive for animate nouns and as nominative for inanimate nouns in the plural of all declension classes and in the singular for nouns ending in a consonant on the surface (type *ž*, a.k.a. the second declension)

- singular neuter and *-ž* nouns are inanimate irrespective of their denotation
- nouns denoting supernatural or human beings, dolls (including marionettes) and animals are animate (even if their denotatum isn't, e.g., *pokojnik*, *mertvec* 'a dead person')
- all other nouns are inanimate

**Gender:** the Russian gender system is a mixed one (Corbett 1991) with the following default gender assignment rules:

- nouns denoting males are masculine
- nouns denoting females are feminine
- declinable nouns of the declension class *ž* are masculine
- declinable nouns of the declension classes *a* and *ī* are feminine
- declinable nouns of the declension class *o* are neuter
- animate indeclinable nouns are masculine (with some exceptions)
- inanimate indeclinable nouns are neuter (again, with some exceptions)
- the gender of indeclinable initialisms (not acronyms) is determined by the gender of the head

Individual words can be lexically specified with a given gender, overriding assignment from the declension class (e.g., *koala* 'koala' is masculine whereas *panda* 'panda' is feminine)

**Number:** NPs denoting plural individuals are plural, but plurality can also be specified in the lexical entry (*pluralia tantum*; for both count and mass nouns)

**Summary:** two potential sources of a phi-feature: lexical specification and semantics. Lexical specification can in fact come in two forms:

- declension class (for gender and arguably for number)
- featural specification (feature assignment to a particular lexical item)

When is the connection between the declension class and gender established?

- Picallo 1991, 2005: gender is introduced in the functional projection GenP
- Kihm 2005, Lowenstamm 2007, Percus 2011, Kramer 2012: gender is introduced on  $n^o$

If correct, the Distributed Morphology approach puts phi-features squarely in the syntax

## 1.2. Background: Russian declension classes

Some confusion in terminology: for some authors (including me) the *-a-* declension class is I and the *-Ø-* (consonant-final) declension class is II, and for others it's the other way around

But everyone agrees that four declension classes should be distinguished (with the neuter *-o-* declension class counting as the fourth one in addition to the traditional Russian three)

For inanimate nouns the declension class usually determines the gender (but crucially, not the other way around):

- (2) declension → gender (with some exceptions)
- a. nouns of the declension class *-ŷ-* are masculine
  - b. nouns of the declension classes *-a-* and *-ŷ-* are feminine
  - c. nouns of the declension classes *-o-* are neuter

Müller 2004, Alexiadou and Müller 2008: these four declension classes actually arise from a combination of two binary features (useful to describe syncretism patterns; see also Börjesson 2006 for Slovene):

- (3) *Decomposition of inflection classes in Russian:  $[\pm\alpha]$ ,  $[\pm\beta]$*

I:	$[+\alpha, -\beta]$	<i>zavod<sub>m</sub></i> ('factory')
II:	$[-\alpha, +\beta]$	<i>komnat<sub>f</sub></i> ('room'), <i>muščin<sub>m</sub></i> ('man')
III:	$[-\alpha, -\beta]$	<i>tetrad'<sub>f</sub></i> ('notebook')
IV:	$[+\alpha, +\beta]$	<i>mest<sub>n</sub></i> ('place')

Underlying generalization:  $+\alpha$  are only distinguished in the direct cases (hence treated as one declension class in traditional Russian grammars);  $-\alpha$  are predominantly feminine;  $+\beta$  are vowel-final in the nominative;  $-\beta$  are, on the opposite, consonant-final in the nominative. A&M do not rely on gender in their Vocabulary Insertion rules and do not deal properly with genitive plural (see below)

Where is the declension class established?

Oltra Massuet 2000, Müller 2004, Embick and Halle 2005, Alexiadou and Müller 2008, etc.: it's a diacritic feature (or features) on the root

Acquaviva 2009: root-licensing rather than features: "if a root has a feature that presupposes a category, then it is not really category-free" (in essence, a bunch of null  $n$ 's with different  $\phi$ -specifications and lists of roots that they license; problem: it's an open class)

Optimal solution: a purely phonological account of class membership (the so-called *theme vowels* are actually part of the root and determine further inflection, cf. Bermúdez-Otero 2006 for Spanish stems, Bailyn and Nevins 2008 for Russian). Achievable?

## 2. PHI-FEATURES AS A SYNTACTIC CONSTRUCTS

It can be unambiguously demonstrated that phi-features *can* be added in syntax

### 2.1. Syntactic gender and mixed agreement

In languages where gender is both semantic and formal (syntactic, morphological...), mixed (or hybrid) agreement is possible:

- (4) Naša    vrač –     umnica. Russian  
our-FSG doctor.M clever.person  
*Our doctor is very clever.*

Although the noun *vrač* ‘doctor’ is inherently masculine, feminine marking is possible on the determiner, attributive modifiers and the predicate (constrained by Agreement Hierarchy, see Corbett 1979 and later work) if our doctor is female.

Importantly, it is impossible to claim that the gender feature of the noun itself is [feminine] or absent altogether:

- (5) a. Naša    zubnoj                vrač –     umnica. Russian  
our-FSG dental-MSG     doctor.M clever.person  
*Our dentist is very clever.*
- b. U naš-ej            devstvenn-oj     eë veličestv-a     budet povod...  
at our-FSG.GEN virginal-FSG.GEN her majesty.N-GEN will.be reason  
*Our virgin majesty will have a reason to...*

So not only is gender a syntactically active feature (unlike declension class), but there exists a mechanism for establishing it in syntax

### 2.2. Code-switching

The (forced) use of a foreign noun (not a borrowing) in contexts where it requires agreement necessitates the existence of a syntactically active process of gender assignment (since it is impossible to assume that such online use relies on gender assignment in the lexicon).

Gender assignment in code-switching relies on a number of criteria (Leisiö 2001, Chirsheva 2009 for Russian, Poplack et al. 1982, Poplack et al. 1988, Fuller and Lehnert 2000, Violin-Wigent 2006 for other languages; for a formal account see Alexiadou 2004 et seq.)

In Russian:

- **phonology**: consonant-final words are usually assigned to the masculine gender
- **semantics**: nouns denoting female and male humans are assigned to the feminine and masculine gender, respectively
- **semantic analogy**: nouns are assigned the gender of the corresponding noun (or of the noun denoting the containing taxonomic category) in the matrix language
- orthography, statistic generalizations over the vocabulary of the matrix language, cognate in the matrix language, etc.

Like in the native vocabulary, **semantic gender overrides phonology for animates**.

Many of these factors also determine gender assignment of loanwords (cf., e.g., Rabeno and Repetti 1997)

Important: in function of the language and the experimental technique different factors play more or less important roles, and the same speaker may be inconsistent in gender assignment.

## 2.3. Indeclinable proper names

Russian proper names follow exactly the same rules as common nouns, with the exception of indeclinable proper names, which are assigned gender by semantic analogy in function of the associated sortal instead of the expected neuter (Rozental et al. 1998:204-205):

- (6) a. solnečnyj [gorod] Tbilisi Rozental et al. 1998:204  
sunny-MSG city.M Tbilisi  
*the sunny city of Tbilisi*
- b. polnovodnoe [ozero] Èri  
full-flowing-NSG lake.N Erie  
*the full-flowing lake of Erie*
- c. trudno.dostupnaja [gora] Jungfrau  
hard.accessible-FSG mountain.F Jungfrau  
*the nearly inaccessible Jungfrau*

The same proper name may be assigned different genders under different guises:

- (7) a. V period krizisa Somali stradalo ot nexvatki prodovol'stvija.  
in period crisis-GEN Somali suffered-NSG from lack victuals-GEN  
*During the crisis (the state of) Somali suffered from the lack of food.*
- b. Somali prinjala s blagodarnost'ju gumanitarnuju pomošč'.  
Somali accepted-FSG with gratitude humanitarian aid  
*(The country of) Somali accepted the humanitarian aid with gratitude.*

Gender assignment by semantic analogy is considerably more frequent in languages that have no declension classes (see Herschensohn 1978 on French deadjectival nouns, Fraurud 1999 on toponyms in Swedish, Lang 1976, Hickey 1999 on German; De Clercq 2008); crucially, the analogically assigned gender is not always the gender of the associated sortal (e.g., German car names)

## 2.4. Interim summary

Gender specification can be:

- discourse-determined and thus syntactic: in mixed agreement, in code switching
- analogically determined (and therefore syntactic): with indeclinable nouns
- correlating with the declension class: for declinable inanimates

I will now demonstrate that **gender is not derivable from declension class** and must also be lexically specifiable

## 3. GENDER/DECLENSION MISMATCHES

For the predominantly feminine first and third declensions **formal** masculine gender may also be specified

### 3.1. Third declension

In the third declension the choice of the instrumental case exponent is determined by gender

The third declension contains:

- all feminine nouns ending in a palatalized consonant in the nominative singular
- the masculine noun *put'* 'way'
- ten neuter nouns ending in *-mja* in the nominative singular
- the animate neuter noun *ditja* 'infant' (which we'll leave aside here)

Point of variation: instrumental singular, which is *-ŭju-* for all third declension nouns except the masculine and neuter ones, which take the second declension exponent *-omŭ-*

The realization of instrumental singular in the third declension is gender-dependent, just like with diminutives

Given that the first declension instrumental singular is *-ojŭ-* (with a stylistic variant *-oju-*), both **gender and declension class specification** seem to be required to determine the correct allomorph

### 3.2. Common gender

Russian first-declension [human] nouns are known to exhibit mixed agreement:

- (8) Ja znaju ètogo nesčastnogo/ ètu nesčastnuju sirotu.  
 I know this-MSG-ACC poor-MSG-ACC/ this-FSG-ACC poor-FSG-ACC orphan-ACC  
*I know this poor orphan.*

Zaliznjak 1967: two separate lexical items, one feminine, one masculine

Alternatives: these nouns have no gender, or are underspecified for gender, or have "common gender", or can be assigned both genders

Iomdin 1980: "common gender" nouns actually divide into two subclasses:

- (9) **common gender epithet nouns** Iomdin 1980

- a. Petja izvestnaja/izvestnyj zanuda.  
 Peter-DIM well-known-FSG/MSG bore  
*Peter is a well-known bore.*
- b. Žena Peti izvestnaja/\*izvestnyj zanuda.  
 wife Peter-DIM-GEN well-known-FSG/MSG bore  
*Peter's wife is a well-known bore.*
- c. Ne obraščaj vnimanija na ètu staruju zanudu!  
 NEG direct-IMP attention on this-FSG old-FSG bore.F  
*Pay no attention to this old bore (male or female).*

- (10) **common gender profession nouns** Iomdin 1980

- a. Našego novogo/našu novuju starostu zovut Maša.  
 our-MSG new-MSG/our-FSG new-FSG monitor call-3PL Masha  
*Our new class monitor is called Masha.*
- b. Našego byvšego/\*našu byvšuju starostu zvali Vanja.  
 our-MSG previous-MSG/our-FSG previous-FSG monitor call-PL Vanya  
*Our previous class monitor was called Vanya.*
- c. Stoilo li vybirat' novogo starostu?  
 be.worth-PAST-MSG Q elect-INF new-MSG monitor  
*Was electing a new class monitor (male or female) worth it?*

Their formal gender is underlyingly specified **without being determined by the declension class** -- and yet can be overridden

## 4. AUGMENTATIVE AND DIMINUTIVE DECLENSION

Zaliznjak 1980:74, Garde 1998:165, Sitchinava 2011: declensional variability of the suffixes *-išk-* (diminutive), *-in-* and *-išč-* (augmentative): while the gender is preserved, the declension class is fixed (*-in-*) or determined by gender and animacy (*-išk-*, *-išč-*)

A picture different from the usual assumption that the declension class determines the gender for inanimate nouns

#### 4.1. Syntactic construction of the declension class

The most widespread Russian diminutive suffix *-ŭk-* has no gender or declension class:

- (11) a. drug 'friend' (M, decl. class *-ŭ-*) → druž-ok (M, decl. class *-ŭ-*)  
b. podrug-a 'female friend' (F, decl. class *-a-*) → podruž-k-a (F, decl. class *-a-*)  
tuča 'raincloud' (F, decl. class *-a-*) → tuč-k-a (F, decl. class *-a-*)  
sel'd 'herring' (F, decl. class *-ŭ-*) → selëd-k-a (F, decl. class *-a-*)  
c. oblako 'cloud' (N, decl. class *-o-*) → oblač-k-o (N, decl. class *-o-*)

It can, however, be used to induce gender change or for category-changing derivation:

- (12) a. rybak 'fisherman' → rybač-k-a 'female fisher' (cf. rybač-ok 'little fisherman')  
cygan 'Gypsy' → cygan-k-a 'female Gypsy'  
golub 'dove' → golub-k-a 'female dove' (cf. golub-ok 'little dove.M')  
b. dobav-it' 'to add' → dobav-k-a 'an extra'  
rubl'-ov-yj 'ruble' (adjective) → rubl'-ov-k-a 'a ruble note'  
c. zev-at' 'to yawn' → zev-ok 'a yawn'  
mil-yj 'dear' (adjective) → mil-ok '(male) sweetheart' (coll.) (cf. mil-ka '(female) sweetheart' (coll.))

The declension class of the resulting noun is determined by its gender

#### 4.2. Suffixes with indeterminate declension classes

The minor declension classes *-ŭ-* (the third declension) and *-o-* (the 10 nouns in *-mja-* and the noun *ditja* 'child') show that even for inanimate nouns the declension class cannot be derived from gender

One lexical exception to (2c): *podmasterje* 'apprentice.M' (*-o-* ≠ neuter)

Systematic exceptions to (2): several diminutive and augmentative suffixes that preserve the gender of the noun they combine with, but do not directly determine the declension class of the resulting noun (Sitchinava 2011).

In the case of *-in-* inanimate masculine nouns may retain their gender in the declension class *-a-*:

- (13) v èt-om/èt-oj                      dom-in-e  
in this-MSG.LOC/-FSG.LOC    house-AUG-LOC

In the case of *-išč-* masculine nouns surface with the neuter nominative singular exponent *-o-*:

- (14) a. toska 'ennui' → tošč-išč-a  
b. volk 'wolf' → volč-išč-e, drug 'friend' → druž-išč-e

In the case of *-išk-* the declension class of the output noun varies in function of the gender (or number) of the source noun and its animacy:

- (15) a. volk 'wolf' (M, declension class *-ŭ-*) → volč-išk-a (M, dim, decl. class *-a-*)  
b. pal'to 'coat' (N, indeclinable) → pal't-išk-o (N, dim, decl. class *-o-*)  
c. služba 'service' (F, declension class *-a-*) → služb-išk-a (F, dim, decl. class *-a-*)  
d. drova 'firewood' (PL) → drov-išk-i (PL, dim, decl. class *-a-*, Z283)

It is impossible to say what the declension class of the suffix *-išk-* is

Furthermore, for masculine inanimate nouns it gives rise to free variation in all cases except accusative between the *-a-* and the *-o-* declension classes, sometimes for the same author in the same text (numbers in brackets indicate occurrences in the Russian National Corpus)

**Table 1: The declension of the suffix *-išk-***

	N	M, inanimate		M, animate	F
nominative	<i>pal't-išk-o</i>	<i>dom-išk-o</i>	<i>dom-išk-a</i>	<i>mal'č-išk-a</i>	<i>služb-išk-a</i>
accusative	o	o	*u	u	
genitive	a	a [16]	i [23]	i	
dative	u	u [3]	e [4]	e	
instrumental	om	om [4]	oj [2]	oj	
locative	e				

In other words, it doesn't seem like the declension class is in fact a category pre-established in the lexical entry

### 4.3. The phenomenon of declension class assignment

Poplack et al. 1982, Rabeno and Repetti 1997, Chirsheva 2009: even in code-switching (and more so in borrowing) a noun may acquire a word-class/declension class marker absent in the original phonological representation:

- (16) On guljaet so svo-ej dog-oj. Chirsheva 2009  
 he walks with REFL-FSG.INS dog-FSG.INS  
*He walks with his dog.*

The only reason for this can be that the declension class can arise from the underlying gender specification (in addition to being itself an underlying nominal property influencing gender assignment)

Support: loanwords are not assigned into the minor *-ŷ-* declension class

Furthermore, the nominative case endings of the three major declension classes are identical to the corresponding gender markers (*-a-* for feminine, *-ŷ-* for masculine and *-o-* for neuter) as identified by gender marking on adjectives and verbs

### 4.4. The puzzle of indeclinable nouns

If gender can determine the declension class, why should consonant-final feminine nouns and o-final neuter nouns be systematically indeclinable?

- (17) a. madam 'madam' (cf. substandard madám-y 'madam-GEN')  
 b. pal'to 'coat' (cf. substandard pól't-a 'coat-GEN')

If gender can assign declension class, why doesn't *madam* acquire declension class I?

If declension class is phonologically determined, why doesn't *pal'to* decline?

### 4.5. Interim conclusion

The traditional declension classes of Russian cannot alone account for the patterns observed with diminutive and augmentative suffixes or deal with the instrumental singular allomorphy for third declension nouns



Common gender nouns require underlying formal gender specification

Furthermore, number can also be lexically encoded

## 5. THE NUMBER OF PLURALIA TANTUM NOUNS

Like many, if not all other languages, Russian has nouns that do not have a singular form:

- (18) *džinsy* 'jeans.PL', *sani* 'sleigh.PL', *duxi* 'perfume.PL', *očki* 'glasses.PL', *galife* 'riding-breaches.PL' (indeclinable), *lavè* 'money.PL' (slang, indeclinable), *usta* 'mouth' (arch.)

As in English (cf. Quirk et al. 1985), the plural morphology disappears in derivation, though perhaps not for the same reasons:

In brief: Russian has a vowel-before-vowel deletion rule and a depalatalization rule

- (19) a. *džins-ina* 'jean leg' (singulative), *džins-ovyj* (*kostjum*) 'denim (suit)'  
 b. *san-nyj* (*put'*) '(a road) for sleighs'  
 c. *duš-it'sja* 'to put on perfume'  
 d. *očk-arik* 'a four-eyes, a nerd'

Is number lexically specified (cf. the "paired" gender of Zaliznjak 1967), or is it a function of the declension class?

Russian pluralia tantum nouns actually belong to **several declension classes**. Parameters of variation: nominative and genitive

The **genitive plural exponent** (cf. Zaliznjak 1980): **augmented** (the choice of the allomorph, *-ov-* vs. *-ej-*, depends on whether the stem-final consonant is palatalized) or **bare**:

- (20) a. *očki* 'glasses' – *očk-ov*, *džinsy* 'jeans' – *džins-ov*, *duxi* 'perfume' – *dux-ov*  
 b. *sani* 'sleigh' – *san-ej*, *kačeli* 'swing' – *kačel-ej*  
 c. *pantalony* 'trousers' (arch.) – *pantalon-Ø*, *šarovary* 'shalwar' – *šarovar-Ø*

These are precisely the options open for the genitive plural exponents for regular nouns:

- first declension (*a*-final): obligatorily zero
- second declension (consonant-final or *-o-*): variation (see below)
- third declension: *-ej-* except for the ten nouns in *-mja-*

The **nominative plural ending** (generally *-a-* for neuter, *-y-* for masculine): *vorota* 'gate' fits into the neuter pattern and *duxi* 'perfume' into the masculine pattern

Further complications: *glaz* 'eye.M' – *glaza*, *uxo* 'ear.N' – *uši*, *plečo* 'shoulder.N' – *pleči*, *rukav* 'sleeve.M' – *rukava*, etc., see Garde 1998:172-174

**Table 2: Russian pluralia tantum declension classes**

nominative plural:	<b>-i-</b>	<b>-a-</b>
bare genitive	<i>šarovary</i> 'shalvar'/'šarovar	<i>vorota</i> 'gate'/'vorot
genitive in <i>-ov-</i>	<i>štany</i> 'pants'/'štan-ov	<i>loxmotja</i> 'rags'/'loxmotj-ev
genitive in <i>-ej-</i>	<i>sani</i> 'sleigh'/'san-ej	<i>truselja</i> 'underpants' (inf.)/'trusel-ej
adjectival	<i>ozimye</i> 'winter crops'/'ozimyx	
indeclinable	<i>galife</i> 'riding-breaches'	

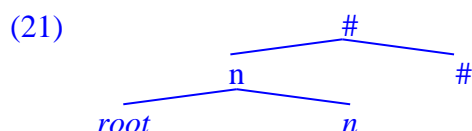
To these should be added the animacy distinction (e.g., *devčata* 'girls.PL', *ljudi* 'people.PL') for the realization of the accusative case, which is determined by the lexical semantics



In other words, declension patterns of pluralia tantum nouns are the same as those for regular nouns in the plural -- not a single pattern, but several

The inherent plural specification of pluralia tantum nouns should therefore be either **derived from their lexical semantics** or explicitly **specified in the lexicon**

Problem (cf. Acquaviva 2008, 2009): locality:

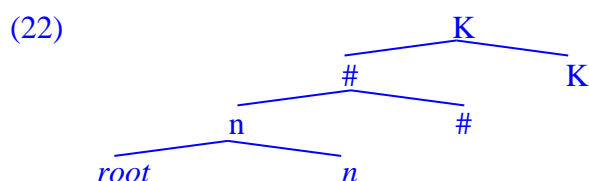


How can the root determine the value of number (or any  $\phi$ -feature, for that matter) across  $n$ ? If, for gender, it is possible to make it a value on  $n$ , is it so for number?

Moskal 2015: cross-linguistic nominal suppletion patterns suggest that number is projected as a separate head, as in (21): nodes higher than number do not condition root suppletion

### 5.1. Can case condition suppletion?

Moskal 2015: root allomorphy can be conditioned by number, but not by case:



Assuming that  $n$  is a cyclic node (a phase) and once number ( $\#$ ) is merged, the complement of  $n$  is spelled out,  $K$  cannot affect the root

Moskal 2015: 4 potential exceptions in 79 studied languages, in Nakh-Daghestanian: 'father' and 'child' in Archi and 'water' and 'son' in Lezgian, all lack the number node in the relevant context (either lacking altogether in a singular tantum noun or having been pruned)

Further evidence: lack of plural suppletion (e.g., *čelovek-ljudi*, for Russian) with a diminutive suffix, which intervenes between number

NB: Suppletion across diminutive: *reběnoček* – *\*reběnočki* (RNC), ✓*detki*, + suppletive *ljudiški*.

### 5.2. Genitive plurals and the locality of allomorphy

Russian genitive plural has three allomorphs: phonological zero (actually, the back yer *-ŷ*, as shown by the fact that it triggers yer lowering in the preceding syllable), *-ov-* (after a "hard", i.e., non-palatalized, consonant) and *-ej-* (after a "soft", i.e., palatalized, consonant)

(23) Jakobson's (1957) generalization (via Pertsova 2015):

- a. Whenever the nominative singular is null, the genitive plural will be overt.
- b. Whenever the nominative singular is overt, the genitive plural will be null.

Various accounts of Jakobson's generalization (Halle 1994, Bailyn and Nevins 2008, Pertsova 2015, among others) set aside a number of lexical exceptions:

- (24)
- a. pole 'field' → pol-ej, oblako 'cloud' → oblak-ov
  - b. a bunch of nationality nouns: turkmen 'Turkmen' → turkmen, cygan 'Gypsy' → cygan, tatar 'Tatar' → tatar, etc.

Feldstein 2005, Pertsova 2015: also some further stress-related generalizations

Halle 1994: while all nouns combine with the  $\text{-}\check{\text{r}}$ - allomorph, after certain (classes of) stems a glide is inserted after the theme vowel:

- (25) a.  $\text{ryb-a} + \check{\text{r}} \rightarrow \text{ryb-}\check{\text{r}} \rightarrow \text{ryb}$  'fish'  
 b.  $\text{zub-o} + \check{\text{r}} \rightarrow \text{zub-o-w-}\check{\text{r}} \rightarrow \text{zubov}$  'tooth'

The glide insertion rule is conditioned by both declension class and gender

Bailyn and Nevins 2008: a different hypothesis on theme vowels (seen from the nominative singular form, whose ending is  $\emptyset$ ); the yer allomorph with stems ending in a vowel

- (26) a.  $\text{ryb-a}$  'fish' +  $\check{\text{r}} - \text{ryb-a-}\check{\text{r}} \rightarrow \text{ryb-}\check{\text{r}} \rightarrow \text{ryb}$   
 b.  $\text{zub-}\emptyset$  'tooth' +  $\text{ov} \rightarrow \text{zubov}$   
 c.  $\text{del-o}$  'affair' +  $\check{\text{r}} - \text{del-o-}\check{\text{r}} \rightarrow \text{del}$   
 d.  $\text{kon'}-\emptyset$  'horse' +  $\text{ej} \rightarrow \text{konej}$   
 e.  $\text{lan'}-\emptyset$  'doe' +  $\text{ej} \rightarrow \text{lanej}$

Problems: nouns in *-mja* (which must be consonant-final and yet require the zero allomorph), lexical exceptions, lexical plurals (Garde 1998:176-180):

- (27) a. truncated plurals of nationality nouns in *-in-*:  
 $\text{armjan-in}$  'an Armenian'  $\rightarrow \text{armjan-e}$  'Armenians',  $\text{armjan-}\emptyset$  'Armenian-GEN.PL'
- b. **augmented plurals in *-ěj-***:  
 $\text{muž}$  'husband'  $\rightarrow \text{muž-ja}$  'husbands',  $\text{muž-ej-}\emptyset$  'husband-PL-GEN';  
 worse:  $\text{syn}$  'son'  $\rightarrow \text{syn-ov-ja}$  (NOM.PL),  $\text{syn-ov-ej-}\emptyset$  'son-PL-GEN'
- $\text{kryl-o}$  'wing'  $\rightarrow \text{kryl-ja}$  'wings',  $\text{kryl'-j-ev}$  'wing-PL-GEN';  
 worse:  $\text{kum}$  'God-parent'  $\rightarrow \text{kum-ov-ja}$  (NOM.PL),  $\text{kum-ov-ev}$  'God-parent-PL-GEN'
- c. suppletive plurals in *-ěnok-/-jat-*:  
 $\text{telěnok}$  'calf'  $\rightarrow \text{teljata}$  'calves',  $\text{teljat-}\emptyset$  'calf-GEN.PL'

While for Bailyn and Nevins 2008 a perceived advantage is that declension class and gender information not necessary, declension class and gender information are anyway necessary for the instrumental singular allomorphy

Core point: **a particular root can require a particular genitive plural ending even across the plural augment** (or two)

How can then the root affect K, if the structure is as in (22)?

## 6. A SKETCH OF A SOLUTION

Desideratum: a purely phonological account with a minimal appeal to otherwise unmotivated features

A less abstract picture than that of Alexiadou and Müller 2008 would look as follows: native Russian roots end in a vowel, which is highly underspecified:  $\text{ə}$  or  $\check{\text{r}}$  (where  $\check{\text{r}}$  does not stand for the back yer of Russian, which we assume to be  $/\check{\text{u}}/$ , cf. Matushansky 2009). In function of the pre-specified N-class ( $\alpha$  marked) we obtain the following declension classes:

- (28) a.  $\text{ə} + [\text{marked}] \rightarrow /a/$  c.  $\check{\text{r}} + [\text{marked}] \rightarrow /\check{\text{r}}/$   
 b. otherwise  $\rightarrow /o/$  d. otherwise  $\rightarrow /\check{\text{u}}/$

Furthermore assume that [feminine] is obligatorily [marked] and that gender, unless explicitly specified, is derived from the declension class.

In the absence of inherent gender specification the suffix *-išk-* is therefore also underspecified as to the declension class (i.e., set to the concrete equivalent of Alexiadou and Müller's  $[+\beta]$ ), which will become  $/o/$  unless the stem it combines with is specified as [feminine]

Puzzle: why do these thematic yers of the second and the third declension fail to trigger yer-lowering across the paradigm?

Answer: because it is an underived environment

Nominative case exponents can remain as usual or something exotic can be done (see below).

The reason indeclinable nouns are indeclinable is precisely the fact that their roots, ending in non-abstract (i.e., fully specified) vowels, do not correspond to any of the Russian paradigms (= Vocabulary Insertion contexts)

Bailyn and Nevins's solution can be reformulated in more intuitive terms: assuming that the genitive plural exponent is /ǔ/, it shares the feature [high] with the /ǣ/-declension classes and Halle's rule for glide insertion can be stated in purely phonological terms

The noun *put'* 'way' is fully specified for the declension class, but also bears the feature value [masculine]. The ten nouns in *-mja-* (underlyingly /in/) -- likewise, but [neuter]

Now assume that nominative case exponent is Ø for neuter nouns, giving us the surface final [o] for /o/-nouns (on the assumption that /o/-nouns are automatically set to [neuter]) and the surface Ø for *-mja-* nouns

Natural confusion classes:

- (29) a. a/o: diminutive and augmentative suffixes for inanimates  
b. a/ǐ: *vakuolja/vakuol'*  
c. ŭ/ǐ: *tul', šampun'*  
d. gender uncertainty: *tuflja, botinok* – pluralia tantum

Questions for future research:

- can the unavailability of mixed agreement for the second (ǔ) the declension nouns in non-nominative cases be derived from the clash between the stem-final ŭ and the conflicting feminine (marked) feature?
- what happens to the thematic /ǣ/ of *-mja-* nouns? Can be deleted by a readjustment rule, triggering /in/ → [ʔa], cf. Halle)...
- is the feature [marked] a property of nominal roots only? A quick investigation of modern Russian conjugation classes reveals only two productive ones, *-a-* and *-i-* (all other so-called thematic suffixes are actually verbalizers with specific lexical semantics, and at any rate translate into the so-called first conjugation class)
- what is preferable: placing all lexically specified phi-features on *n* with fission or projecting them separately with fusion?
- the realization of nominative plural is still a puzzle, but empirically, there is only variation with roots that are not [marked] -- why?

The take-home message: **even declension classes are syntactic!**

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