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PROJECTING PHI
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1. INTRODUCTION: THE RUSSIAN GENDER

Gender is an **inherent** property of an NP that affects its **agreement** patterns (and anaphora)

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

Gender can be semantic and formal (syntactic, morphological...):

- Semantic gender of a noun is determined by the properties of entities belonging to its extension (e.g., natural gender/sex, animacy, non-flesh food in Dyirbal (Dixon 1982:178) – see Corbett 1991)
- Formal gender is random or determined by some morphological properties of the noun (e.g., its declension class)
- Gender systems seem to always have a semantic core

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 *ř* are masculine
- declinable nouns of the declension classes *a* and *ĩ* 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 acronyms is determined by the gender of the head

Individual loanwords 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)

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)
- direct featural specification

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

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

1.1. The phenomenon of mixed agreement

Mixed systems may give rise to mixed agreement (Crockett 1976 for Russian): agreement can be determined by the semantic properties of the referent of a DP rather than by the formal features of the DP itself:

(1) **presupposition: our doctor is a woman**

- a. Nař vrač priřel vovremja.
 our-MSG doctor.M arrived-MSG on.time
Our doctor arrived on time.

What is less known is that the distribution of semantic agreement in Russian is not uniform and appears to depend upon the declension class of the noun:

- common gender nouns: declension class *-a-*, agreement by the natural gender of the referent NP-internally and NP-externally in both direct and oblique cases.
- hybrid nouns: declension class *-ŷ-*, agreement by the natural gender of the referent only possible in the nominative case
- style nouns: declension classes *-o-* and *-ŷ-*, agreement by the natural gender of the referent only possible for the predicate and the relative pronoun. It is not obvious, however, that such nouns are [human]

Additional wrinkle: in Polish epicene/hybrid nouns denoting females may fail to decline (Rothstein 1980), as do Russian feminine first and last names ending in a consonant (e.g., *Ėdit* 'Edith')

1.2.1. Common gender

The so-called "common gender" nouns belong to the declension class *-a-* and generally agree by the natural gender of the referent:

- (5) 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.

Their distribution is not constrained.

Their general treatment (cf. Doleschal 1999, Nikunlassi 2000) is to assign them to a special class (common gender), which would translate into:

- no gender feature, semantic agreement only
- optionally appear with either gender feature

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

- (6) a. Petja izvestnaja/izvestnyj zanuda. Iomdin 1980
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).
- (7) 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-NSG Q elect-INF new-MSG monitor
Was electing a new class monitor (male or female) worth it?

Iomdin proposes that common gender nouns are listed in the lexicon twice, with the marked agreement option identified as attributing to the referent the corresponding natural gender:

- (8) a. $[[\text{zanuda}_F]] = \lambda x . x \text{ is a bore}$ expressive epithets
b. $[[\text{zanuda}_M]] = \lambda x : x \text{ is male} . x \text{ is a bore}$
- (9) a. $[[\text{starosta}_M]] = \lambda x . x \text{ is a monitor}$ profession nouns
b. $[[\text{starosta}_F]] = \lambda x : x \text{ is female} . x \text{ is a monitor}$

Problem: there is no independently motivated connection between these two lexical entries

Puzzle: there are some masculine nouns in the *-a-* declension class that do not have feminine counterparts (e.g., (*gorodskoj*) *golova* 'the mayor')

Intuition: [human] nouns in the *-a-* declension class switch gender very easily because their formal gender assignment is handled by conflicting rules

- [+animate] → masculine (cf. gender assignment to indeclinable animate nouns)
- *-a-* declension class → feminine (cf. gender assignment to inanimate nouns)

This still does not explain why there are two defaults and the mechanism of assigning gender on the basis of the natural gender of the referent remains to be determined

1.2.2. Hybrid nouns

Unlike in the declension class *-a-*, [human] profession-denoting nouns in the declension class *-ř-* are assigned the same gender by their lexical semantics and their phonology:

- [+animate] → masculine (cf. gender assignment to indeclinable animate nouns)
- *-ř-* declension class → masculine (cf. gender assignment to inanimate nouns)

They are therefore correctly predicted to be more resistant to natural gender assignment (the mechanism still to be determined)

Semantic agreement with *-ř-*nouns is only possible in the nominative (Švedova 1980:§1819; some counterexamples are attested):

- (10)**našu* *vrača*
our-FSG-ACC doctor-MSG-ACC=GEN

Intuition to develop: the inability of hybrid nouns to appear in mixed agreement patterns in non-nominative case positions is akin to the similar restriction on the use of case-deficient elements (Testelets 2013).

1.2.3. Style nouns

Like hybrid nouns, style nouns can give rise to mixed agreement, but only NP-externally:

- (11) *Ego korolevskoe/*korolevskij vysočestvo nedovolen/?nedovol'no.*
his royal-NSG/MSG highness dissatisfied-MSG/NSG
His Royal Highness is dissatisfied.

Their animacy (only potentially observable in the plural) is unclear

As style nouns do not allow NP-internal semantic agreement, it is impossible to say whether they allow semantic agreement in non-nominative case positions

1.3. The mechanism of mixed agreement

Where is gender introduced structurally? Different answers, depending on who you ask

General studies on the gender of animate/human nouns:

- Picallo 2005: gender is introduced in the dedicated functional projection GenP
- Kihm 2005, Kramer 2012: gender is introduced on n°

- Percus 2011: gender is introduced on n° , but sometimes not interpreted

Studies on mixed agreement:

- Sauerland 2004: all phi-features are interpretable only on the dedicated functional head ϕ (which is the highest functional head in the extended NP projection)
- Neeleman 2008, Matushansky 2013: while normally phi-features are interpreted only on nouns, under some circumstances they can be on other elements
- Steriopolo and Wiltschko 2010: gender can be introduced on the root (for nouns that lexically encode gender), on n° (for grammatical gender) or on D° (for mixed agreement)
- Pesetsky [to appear]: the interpreted [feminine] feature in mixed agreement cases is introduced on the functional head \mathcal{K} in the extended NP projection

Assuming the last option (not my previous proposal): mixed agreement involves a dedicated functional head \mathcal{K} that introduces a presupposition on the external argument, which gives rise to the [feminine] feature:

$$(12) \llbracket \mathcal{K} \rrbracket = \lambda f . \lambda x : x \text{ is a female} . f(x)$$

Novel assumption: the gender feature on \mathcal{K} syntactically interacts with the gender feature of the NP it combines with: for full syntactic integration they must match

Independent motivation: case-agreement with proper names

2. CASE-MARKING IN CLOSE APPOSITION

Close apposition can be defined as a linear juxtaposition of two noun phrases **with a shared referent and no intervening pause**:

- (13) a. the element engoopium [examples from Jackendoff 1984]
 b. the material polyacrynilate
 c. the actor John Gielgud
- (14) a. the name Harry
 b. the color red
 c. the letter A
 d. the number 14
 e. the play/opera/novel/movie *Death in Venice*

Depending on the lexical-semantic category, the proper name can appear in the same case as the sortal (i.e., the case assigned to the entire NP) or in the default nominative case:

- (15) a. o russk-om poèt-e Blok-e/*Blok [+animate]
 about Russian-MSG.LOC poet.M-LOC Blok.M-LOC/*NOM
about the Russian poet Blok
- b. o roman-e "Gorod/*Gorod-e" man-made object
 about novel.M-LOC City.M-NOM/*LOC
about the novel The City
- c. na ulic-e Jakimank-a/Jakimank-e toponym
 in street.F-LOC Yakimanka.F-NOM/LOC
on the Yakimanka street

Even when the lexical-semantic category is fixed, **the lexical category and ϕ -features of the proper name can affect case-marking**:

- (16) a. na ulic-e Jakimank-a/Jakimank-e ✓phi-congruent
in street.MSG-LOC Yakimanka.FSG-NOM/LOC
on the Yakimanka street
- b. na ulic-e Balčug/*Balčug-e *non-phi-congruent
in street.MSG-LOC Balčug.MSG-NOM/LOC
on the Balčug street
- (17) a. ot stanci-i Moskva/*Moskvy nominal proper name
from station.FSG-GEN Moscow.FSG-NOM/GEN
from the station Moscow
- b. ot stanci-i Tixoreckaja/Tixoreckoj adjectival proper name
from station.FSG-GEN Tixoreckaja.FSG-NOM/GEN
from the station Tixoreckaja

Empirical generalization: case-agreement depends on ϕ -congruence between the sortal and the proper name.

Number congruence is required, except for indeclinable last names (see Graudina et al. 1976)

For [+animate] proper names case-agreement is obligatory, regardless of gender congruence:

- (18) a. My govorili o russkom poète Cvetaevoj/*Cvetaeva.
we spoke about Russian-MSG-LOC poet-MSG-LOC Tsvetaeva.FSG-LOC/NOM
We spoke about the Russian poet Tsvetaeva.
- b. pro sobaku Trezora/*Trezor
about dog-ACC Trezor-ACC=GEN/NOM
about the dog Trezor
- c. o kosmonavtax Tereškovoj/*Tereškova i Gagarine/*Gagarin
about astronauts-LOC Tereshkova.FSG-LOC/NOM and Gagarin.MSG-LOC/NOM
about the astronauts Tereshkova and Gagarin

Otherwise the degree of gender congruence is determined by the sortal:

- gender congruence not required (city, country, river names)
- gender congruence required (street names, syntactically complex city names with internal agreement)
- only with phi-congruent adjectival proper names (railway station, cape, peninsula, etc., names)

All declinable proper names show appropriate case-marking in argument positions.

Lack of familiarity makes case-agreement less likely.

Names of man-made objects do not allow case-agreement.

Reified quotations behave like plain quotations: no case-marking is possible

Note: there is notable cross-speaker variation in assigning different lexical-semantic categories of toponyms to these classes. I don't know whether there is any variation for individual proper names

2.1. Case-agreement on the condition of number congruence

For **syntactically simplex** city and town names, as well as for names of countries and rivers, number congruence is required for case agreement but gender congruence is not:

- (19) a. v gorode Gagry/*Gagrax
in city.MSG-LOC Gagry.PL-NOM/LOC
in the city of Gagry

- b. v gorode ? Tallinn/Tallinne
 in city.MSG-LOC Tallinn.MSG-NOM/LOC
in the city of Tallinn
- c. v gorode Moskva/Moskve
 in city.MSG-LOC Moscow.FSG-NOM/LOC
in the city of Moscow
- d. o strane Francija/Francii
 about country.FSG-LOC France.FSG-NOM/LOC
about the great country France
- e. o strane Kitaj/Kitaje
 about country.FSG-LOC China.MSG-NOM/LOC
about the great country China

Phi-congruent toponyms are more likely to agree.

Lack of case-agreement is more likely with recognizably foreign toponyms, which is usually associated with the lack of familiarity:

- (20) a. My govorili o malen'koj strane Gabon/??Gabone.
 we spoke about small-FSG-LOC country.FSG-LOC Gabon.MSG-NOM/LOC
We spoke about the small country Gabon.
- b. My govorili o malen'koj strane Birma/Birme.
 we spoke about great-FSG-LOC country.FSG-LOC Burma.FSG-NOM/LOC
We spoke about the small country Burma.

Assuming that the agreeing case results from concord, the proper name should agree with the sortal.

Question: if matching phi-features are enough for case-agreement, why can inanimate proper names fail to agree, unlike animate proper names?

Intuition: animate NPs must have the feature [α animate]. Inanimate NPs may (fail to) have it ([-animate] being the lexical default).

2.2. Case-agreement on the condition of phi-congruence

Street names and syntactically complex toponyms do not agree in case unless phi-congruent (Graudina et al. 1976:142):

- (21) a. na ulic-e Jakimank-a/Jakimank-e ✓ phi-congruent
 in street.MSG-LOC Yakimanka.FSG-NOM/LOC
on the Yakimanka street
- b. na ulic-e Balčug/*Balčug-e ✗ phi-congruent
 in street.MSG-LOC Balčug.MSG-NOM/LOC
on the Balčug street
- (22) a. v poseleni-i Dolgij Most/*Dolgom Moste ✗ phi-congruent
 in settlement. MSG-LOC Long Bridge.MSG-NOM/LOC
in the settlement of Dolgij Most (lit. Long Bridge)
- b. v gorod-e Belaya Cerkov/*Beloj Cerkvi ✗ phi-congruent
 in city.MSG-LOC White Church.FSG-NOM/LOC
in the city of Belaya Cerkov (lit. White Church)

- c. v gorod-e Petropavlovsk-Kamčat-sk-ij/Petropavlovsk-e-Kamčat-sk-om
in city.MSG-LOC Petropavlovsk-Kamčatka-ADJ-MSG-NOM/LOC
in the city of Petropavlovsk-Kamčatskij (lit. Petropavlovsk of Kamchatka)

Intuition: syntactically complex proper names containing agreeing modifiers necessarily bear formal gender features (to enable agreement internally to the proper name)

Obligatory phi-congruence also constrains case-agreement with some other lexical-semantic classes of proper names, which we hypothesize to bear lexically specified gender features

2.3. Case agreement with phi-congruent adjectival proper names only

For some categories of proper names case agreement is possible only with **morphologically adjectival** toponyms on the condition of **both gender and number congruence**:

- (23) a. do stancii Bologoe/*Bologogo
until station.FSG-GEN Bologoe.NSG-NOM/GEN
until the station Bologoe
- b. na stancii Moskva/*Moskvy
on station.FSG-GEN Moscow.FSG-NOM/GEN
on the station Moscow
- c. na stancii Tixoreckaja/Tixoreckoj
on station.FSG-GEN Tixoreckaja.FSG-NOM/GEN
on the station Tixoreckaja

An incomplete list of such proper names includes boroughs (*mestečko*), villages (*selo*), ports, lakes, bays, volcanoes (*vulkan*, *sopka*), mountains, planets and railway stations.

Intuition: the difference between adjectives and nouns is that the former must have unvalued phi-features (and their declension class is determined by gender)

3. THE SYNTAX OF PHI-CONGRUENCE

Hypothesis: phi-feature agreement always triggers case-agreement

- phi-feature agreement ⇒ obligatory case-agreement
- phi-feature congruence ⇒ potential case-agreement

The core intuition that we want to capture is that phi-feature congruence **can be a necessary condition** for case-agreement, but it doesn't have to be.

Formal tool: valuation of inherent phi-features for proper names in function of their lexical-semantic category

Intuition: in close apposition the proper name appears in the minimal syntactic structure that is allowed

3.1. Adjectival proper names

Core insight: adjectival proper names cannot not have unvalued gender and animacy features (except when they are nominalized, cf. null-derived deadjectival nouns: *zapjataja* 'comma.F', *portnoj* 'tailor.M'):

- (24) a. o russk-om poët-e Matve-ev-oj adjectival proper name
about Russian-MSG.LOC poet.M-LOC Matvej-POSS-F.LOC
about the Russian poet Matveeva

- b. v gorode Grozn-om nominal (deadjectival) proper name
in city.M-LOC Fearsome-MSG.LOC
in the city of Grozny

We run here into a very interesting issue of the formal interaction between proper names and their inflectional and derivational morphology

We generally assume that nouns are stored in the lexicon without inflectional morphology. With proper names, however, this inflectional morphology can clearly determine not only the pronunciation, but also the reference: *Puškino* (the village) is clearly distinct from *Puškin* (the city); adjectival last names, on the other hand, do not seem to have this property

DM: lexicon vs. Encyclopedia

Hypothesis: adjectival proper names are introduced with their inflectional morphology (and therefore with a valued gender feature). Their animacy feature, however, can be still unvalued and trigger agreement with the sortal. As a result, full syntactic agreement can be established between the sortal and the proper name

3.2. Nominal proper names

Normally Russian proper names are assigned gender on the basis of their declension class:

- (25) a. I pered mladšeju stolicej Pomerkla staraja Moskva
and before younger capital dimmed-FSG old-FSG Moscow
The old Moscow waned before the younger capital.
- b. Gordyj Sankt-Peterburg prevratilsja v obydenyj Leningrad.
haughty-MSG St. Petersburg changed-MSG in pedestrian-MSG Leningrad
The haughty St. Petersburg turned into a pedestrian Leningrad.

However, indeclinable proper names get their gender from their lexical semantics (in function of the appropriate sortal)

- (26) a. solnečnyj [gorod] Tbilisi Rozentel 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 two gender assignment strategies should not lead to a contradiction

Since two phi-features, animacy and gender, are involved, it seems natural to assume that one or both of them can remain unvalued

See also Bobaljik and Zocca 2011, Merchant [to appear] for optional gender specification on animate nouns

We have the following three patterns of case-agreement for (singular) nominal proper names to account for:

- no agreement: villages, mountains, volcanoes, etc.: lexically specified for gender; animacy either lexically specified ([-animate]) or absent altogether
- agreement possible with matching gender: street names, complex city names: the gender feature lexically specified, the animacy feature unvalued

- agreement possible regardless of gender: names of cities, towns, countries, rivers, etc.: the gender feature is absent, the animacy feature is unvalued
- agreement required regardless of gender: names of animate individuals: only their gender feature is introduced unvalued

Question: why is lack of case-agreement impossible for [+animate] proper names?

- incongruence in [α animate] is impossible: this feature is always interpreted
- incongruence in [α gender] is possible but overridden by the natural gender at the DP level
- total lack of phi-features is not an option

Is there any independent evidence for partial phi-feature specification of proper names?

3.3. German proper names

Moltmann 2013 distinguishes several categories for proper names in German:

- i. names of people: no overt article in standard German, plural anaphora possible, d-series in the relative pronoun choice
- ii. names of churches and palaces: no overt article, plural anaphora possible, d-series in the relative pronoun choice (i.e., just like names of people, but inanimate)
- iii. most toponyms (cities, villages, countries, continents, churches, palaces): no overt article, plural anaphora impossible, w-series in the relative pronoun choice
- iv. names of mountains, lakes, temples: obligatory definite article (the gender of the corresponding sortal), d-series in the relative pronoun choice

Hypothesis: there is no need to postulate a hidden sortal: presence or absence of pre-specified formal gender is enough

The gender of common nouns in German is not predictable from the surface form (though see Lang 1976, Corbett 1991:84-86 for references on gender assignment rules in German)

The gender of proper names is more complicated, but at least the following seems true:

- proper names denoting females are feminine, while proper names denoting males are masculine
- some proper names have a lexically fixed gender (e.g., *der Nil* 'the Nile' (M), *die Wolga* 'the Volga' (F))
- most [-animate] proper names have their gender fixed by semantic analogy (e.g., rivers, mountains, lakes, temples are masculine unless specified otherwise).

Hypothesis: just like in Russian, in German proper names in the categories (i) and (ii) are not specified for gender; the same is true for most proper names in the category (iii)

- the overt definite article in standard German tracks inherent gender specification on proper names
- the w-series of relative pronouns is used in the absence of any phi-features

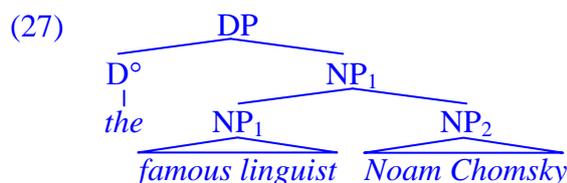
The feature [α animate] may be valued, but does not have to be

The difference between names of humans and names of cities comes from the fact that at the DP level the former acquire both gender and animacy from real-world reference

4. PUTTING IT ALL TOGETHER

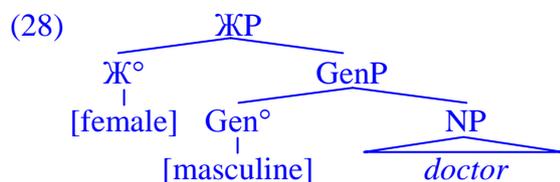
Hypothesis: mixed agreement arises in a close apposition structure, where \mathcal{K} plays the role of the sortal:

Jackendoff 1984, Lasersohn 1986, McCawley 1996, 1998: the head in close apposition is N_1 and the common noun is not the modifier.



Assuming that gender is introduced as a separate syntactic projection (nP or GenP), we obtain the following structure:

Note: the functional heads Gen° and \mathcal{K}° are essentially the same (see Appendix)



The functional head \mathcal{K}° introduces interpretable (feminine *or masculine*) gender features, as in (12), but no nominal features, which can only be inherited from its sister for the resulting structure to be an NP. In order for this to happen, \mathcal{K} must enter full syntactic agreement with the extended NP it combines with.

In other words, gender features must be licensed: not due to some inherent requirement, but because of the structure they are introduced in.

If agreement cannot be established (as is the case of a hybrid \bar{f} -noun in (28)), the resulting structure ends up non-nominal and therefore can only be merged in nominative case positions (where they are not assigned case), similarly to other case-deficient elements (Testelefs 2013; intuitively, accusative case positions are also ruled out because for animate masculine nouns accusative is realized as genitive)

For *-a-* nouns the situation is different. Their declension class assigns them to the feminine gender, whereas the fact of being animate assigns them to the masculine gender. As a result, they can agree with both a [female] and a [male] \mathcal{K}°

To handle Iomdin's two subclasses of common gender nouns, we assume that their gender in the absence of the natural gender is determined by their lexical semantics (cf. Nessel 2001):

- profession nouns are [masculine]
- expressive epithets are [feminine]

In other words, gender is interpretable (see Appendix)

Prediction (which seems to be correct): in cases of mixed agreement *-a-* nouns will also only be possible in nominative case positions (because gender-marking on the inner AP "freezes" the gender of the NP):

- (29) a. ?naša tretejskij sud'ja
 our-FSG arbitrational-MSG judge
 our arbitrator
- b. *našu tretejskogo sud'ju
 our-FSG-ACC arbitrational-MSG-ACC=GEN judge-ACC

- (30) a. ètot sirota kazanskaja
this-MSG orphan Kazan-ADJ-FSG
this "poor little me"
- b. *ètogo sirotu kazanskuju
this-MSG-ACC orphan-ACC Kazan-ADJ-FSG-ACC

The inner adjective is in this case a relational one; in cases of an intersective adjective (even if it is collocationally restricted) mixed agreement is impossible:

- (31) a. èta/*ètot kruglaja sirota
this-F/M total-F orphan
this familyless orphan (female)
- b. ètot/*èta kruglyj sirota
this-M/F total-M orphan
this familyless orphan (male)

What does this mean for the syntax of gender?

- gender is syntactically projected as a functional head, which means that...
- all gender is syntactic, there is no gender in the lexicon (see Appendix)
- gender is not n° (otherwise no explanation for the nominative-case restriction)
- gender can be lexically-semantically licensed (see Appendix)

Doesn't it begin to look like the projection of features as proxy categories (Nash and Rouveret 1997)?

5. APPENDIX

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?

5.1. 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)

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**.

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.

5.2. 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):

- (32) 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 when considered under different guises:

- (33) 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 (e.g., in French; see also Fraurud 1999 on the gender of toponyms in Swedish, Lang 1976, Hickey 1999 on German; De Clercq 2008), though crucially for proper names it is not always the gender of the associated sortal (e.g., for German city names)

5.3. Summary

Semantic gender assignment has to be available outside the lexicon.

Is there any reason to believe that formal gender assignment occurs *in* the lexicon?

- Is it really necessary to have two systems of gender assignment?
- And if there were two systems, wouldn't we expect two gender paradigms (e.g., noun class vs. natural gender) instead of one, in at least some languages?

Solution: the so-called "**formal**" or "**grammatical**" gender is interpretable at LF

It virtually has to be:

- if it weren't, gender would be a narrow-syntactic property; distinguishing it from declension classes would be purely a matter of being syntactically active

- if it weren't, we wouldn't expect formal gender (of inanimate nouns) to depend on their semantics
- co-variation in pronominal gender is not determined in the narrow syntax (but see Elbourne 2002 for a hypothesis that pronouns involve NP-ellipsis)

Proposal: while "semantic gender" classifies individuals (most frequently, by natural gender), **"formal gender" classifies kinds**

The basis for this classification is the declension class or (primarily in its absence in Russian) semantic analogy (on the common semantic core of human first declension nouns see Nesset 2001).

The connection between natural gender and semantic gender is not a bijection or a function:

- masculine diminutives of feminine first names (e.g., *Lizok*)
- feminine-agreeing "common gender" nouns with male referents (e.g., *svoloč'*) and the use of feminine agreement to indicate male homosexuality or insignificance

Cross-linguistically feminine gender frequently contains diminutives (e.g., in the Ethiosemitic language Amharic (Kramer 2012), in the Omotic language Dizi, a.k.a. Maji (Allan 1976 via Corbett 1991) and in the Salish language Halkomelem (Steriopolo and Wiltschko 2008))

Formalization: features [marked] (masculine), [minor] (feminine) and [inanimate] (neuter)

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