

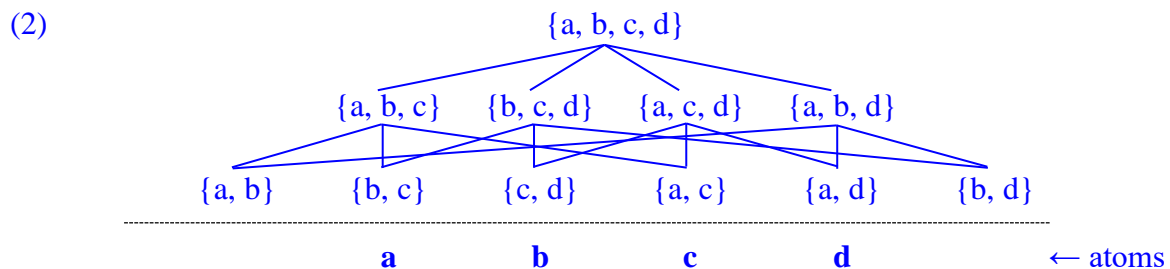
MASS NOUNS, PLURALS, AND MASS PLURALS: ON THE RUSSIAN SUFFIX -Ĭ-
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1 THE DENOTATION OF MASS NOUNS

Quine 1960:91: plurals and mass nouns both have cumulative reference:

- (1) a. A is water and B is water; therefore, A and B together are water.
- b. A are apples and B are apples; therefore, A and B together are apples.

Link 1983, Landman 1989a, etc.: plural predicates form an atomic join semi-lattice:



The denotations of mass nouns like *sand* or *flour* do not have minimal parts, but otherwise their structure is the same

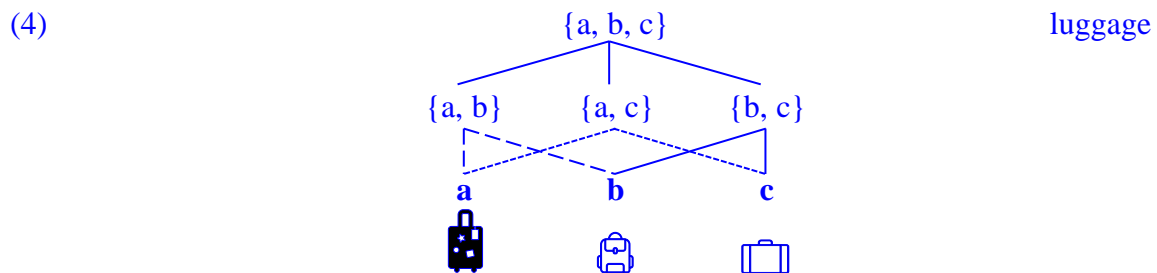
If counting involves access to atoms, mass nouns are predicted to not be countable:

- (3) a. ??seven bloods
- b. five beers (= packages of beer) package reading
- c. three wines (= sorts of wines) sub-kind reading

Reason: either they have no atoms at all (Link 1983, Landman 1989a, 1991) or their only non-vague atom is the entire kind (Chierchia 1998)

Problem: some mass nouns do have minimal parts (henceforth, **neat mass nouns**):

Terminology: *object mass nouns* (Barner and Snedeker 2005), a.k.a. *fake mass nouns* (Chierchia 2010, 2021), *count mass nouns* (Doetjes 1997), or *neat mass nouns* (Landman 2011). I choose neat mass nouns so as to also have the complement set denotation, *mess mass nouns*



A person's luggage can consist of just their backpack

Concepts that are encoded as neat mass nouns in one language can be encoded as count nouns in another:

- (5) a. *linsen* 'lentils.PL' (German), *lentils* (English) Sutton and Filip 2016
- b. *lešta* 'lentils.SG' (Bulgarian); *čočka* 'lentils.SG' (Czech)

Or within one language:

- (6) a. *meubilair* ‘furniture’ Dutch (Landman 2011)
 b. *meubel* ‘a piece of furniture.SG’, *meubels* ‘furniture.PL’
- (7) a. *mobilia* ‘furniture’ Italian (Chierchia 2010)
 b. *mobile* ‘a piece of furniture.SG’, *mobili* ‘pieces of furniture’

The denotation of a neat mass noun seems to have the same structure as a plural

2 ATOMS IN THE DENOTATION OF NEAT MASS NOUNS

Novel evidence: the Russian suffix *-ij-*:

Surface [j]; the nominative (singular) ending is realized as [o] (under stress) or as [e] (if unstressed)

Output: neat mass nouns, semi-productive for [+animate] bases (pejorative for [+human] bases, natural for disliked animals), non-productive for other non-verbal stems:¹

- (8) a. *duračjǒ* ‘fools’ (cf. *durák* ‘fool’) animate neat mass
 b. *vorjǒ* ‘thieves’ (cf. *vor* ‘thief’)
 c. *voronjǒ* ‘ravens, crows’ (*vóron* ‘raven’, *voróna* ‘crow’)
 d. *komarjǒ* ‘mosquitos’ (*komár* ‘mosquito’)
 e. *otrǎbje* ‘trash (arch.), rabble’ (cranberry root)
- (9) a. *dubjǒ* ‘cudgels’ (cf. *dubína* ‘cudgel’) inanimate neat mass
 b. *višénje* ‘cherries, cherry trees’ (cf. *višnja* ‘cherry’)
 c. *beljǒ* ‘linen, underwear’ (from *béljij* ‘white’)
 d. *rvanjǒ* ‘tatters’ (from *rvánij* ‘torn’)
- (10) a. *starjǒ* ‘old stuff’ (cf. *stárij* ‘old’) inanimate mess mass
 b. *korjǒ* ‘bark stripped from trees’ (cf. *korá* ‘bark’)
 c. *smoljǒ* ‘resinous firewood’ (cf. *smolá* ‘resin’)

(11), with lots of attested instances online, shows that the denotation of neat *ij-*nouns based on animate bases contains singular individuals:

- (11) *Ti* – *duračjjo*.
 you.SG [are] fool.IJ
You’re a fool.

Individual humans are not decomposable into smaller entities that can still be fools

The interpretation of *ij-*nouns as neat or mess depends on the structure of the input: count bases yield neat mass nouns, mass bases (mess or adjectival) yield mess mass nouns

See section 4 for exceptions

The suffix *-ij-* introduces mass/plural structure, i.e., cumulative reference

Which makes it similar or identical to **Link’s (1983) *-operator**

¹ This suffix should be distinguished from the homophonous suffix *-ij-* on the basis of: (a) semantics: *-ij-* yields abstract nouns and locations (barring idiomatic interpretations); (2) phonology: *-ij-* is strictly pre-accenting; (3) morphology: *-ij-* has a lexically conditioned allomorph *-ij-*, which does not create collectives. I leave the question open which of these suffixes is used in event nouns (which Chierchia 2010 regards as neat mass), on the complex nominalizing suffix *-[e]nij/-tjij-* see Babby 1993, Sadler, Spencer and Zaretskaya 1997).

If derived neat mass nouns have a semantic structure distinct from plurals, what is it?

Unlike group-denoting *pluralia tantum* in Czech (Grimm and Dočekal 2021), *-ij-* nouns do not combine with cardinals, including collective cardinals:

Russian collective cardinals are required with count *pluralia tantum* nouns (like *sani* ‘sleigh’) and possible with animate masculine nouns (subject to a lot of variation, see Nikunlassi 2000 and other references in Corbett 2019)

- (12) **semi/semero* *duračij-ov/duračij-a*
seven/seven.COLL *fools-PL.GEN/SG.GEN*

In other words, **these are normal neat mass nouns** except they are derived from a count base

3 NEAT MASS NOUNS AND PLURALS

Why can't neat mass nouns be counted, when their minimal units can?

- (13) a. three fences
 b. *three fencing

Two issues really: counting and pluralization

Predicate view of cardinals (cf. Landman 2003): a cardinality function applied to a plural:

- (14) a. $[[\text{two hundred}]] = \lambda x \in D_e . |x| = 200$
 b. $[[\text{two hundred books}]] = \lambda x \in D_e . |x| = 200 \wedge \text{*book}(x)$

(14a) is predicted to be applicable to neat mass nouns

Cardinals cannot combine with **neat mass** nouns:

- (15) a. five *(pieces of) furniture, three *(pieces of) luggage
 b. **semi klubnik-Ø/i* c. **piati ljud-a* Russian
seven strawberries.SG-PL.GEN/SG.GEN *five folk.SG.GEN*

What's wrong with |luggage|?

Ionin and Matushansky 2006, 2018: **cardinals combine with quantized properties (QU)**, i.e., with properties that have in their denotation individuals of the same cardinality

I now prefer Chierchia's alternative (2010) treating atomicity as relative:


A property is atomic (AT(P)) if entities it contains are not parts of each other

- (16) $[[\text{three}]] = \lambda P \in D_{\langle e, t \rangle} : \mathbf{AT(P)} . \lambda x \in D_e . \exists S \in D_{\langle e, t \rangle} [\Pi(S)(x) \wedge |S| = 3 \wedge \forall s \in S P(s)]$
 AT(P) is true iff $\forall x [P(x) \rightarrow \neg \exists y [P(y) \wedge y <_i x]]$

- (17) $\Pi(S)(x)$ is true iff partition
 S is a *cover* of x, and
 $\forall z, y \in S [z=y \vee \neg \exists a [a \leq_i z \wedge a \leq_i y]]$ (Forbidding that cells of the partition overlap ensures that no element is counted twice.)

- (18) A set of individuals C is a *cover of a plural individual X* iff
 X is the sum of all members of C: $\sqcup C = X$

In normal words: cardinals combine with atomic sets and do the multiplication:

- (19) a. an egg b. dozen eggs c. three [dozen eggs]
- 

Mass nouns, neat or mess, do not denote atomic properties

Hypothesis: the denotation of neat mass nouns is an atomic join semi-lattice (4)

Then, of course, (4) cannot be counted!

Nor can it be pluralized: pluralization of (4) would just return (4)

Unless it yields plurals of abundance (*waters*) and emphasis (*heavens*), cf. Tsoulas 2006, Alexiadou 2011

4 CONCLUSION

Two main contributions of this work:

- neat mass nouns and counting: assuming the same atomic join semi-lattice structure for neat mass nouns and plurals is unproblematic if cardinals combine with atomic predicates (i.e., with singular count NPs) and plural marking is agreement (Ionin and Matushansky 2018)
- Russian -ěj- nouns: the suffix is argued to contribute the same semantics as Link's *-operator, the resulting denotation is shown to include atoms

Vagueness and overlap (Sutton and Filip 2016, 2021 after Chierchia and Landman) matter for lexicalization, but neat mass nouns can be created on the basis of stable non-overlapping atoms

5 LOOSE ENDS

5.1 Deadjectival derivatives

Denotation of the adjectival stem is probably non-atomic

Prediction (false): deadjectival derivatives should only denote mess mass:

- (20) a. *starjǒ* 'old stuff' (cf. *stárjij* 'old') deadjectival mess mass
 b. *sírjǒ* 'raw materials/stuff' (cf. *sírǒj* 'raw')
 c. *svežjǒ* 'fresh raw materials/stuff' (from *svěžij* 'fresh')
- (21) a. *beljǒ* 'linen, underwear' (from *běljij* 'white') deadjectival neat mass
 b. *rvanjǒ* 'tatters' (from *rvánij* 'torn')
 c. *maljǒ* 'small things' (from *máljij* 'small')

Proposal: (21b-c) are neat because these adjectives are stubbornly distributive (Schwarzschild 2011), i.e., apply to atoms; (21a) is an exception (idiosyncratic interpretation)

Apparent deadjectival derivation may involve an intermediate null-derived noun:

- (22) a. Solnce i sinj, **zelen-ij-o** šelestjaščee počkoj... γ
 sun and blue.NMLZ green-ĪJ-SG.NOM rustling.NSG bud.INSTR
The sun and the blue, plants rustling their buds...
- b. A doktoram vseгда respekt!!! i **zelen-ij-o**. γ
 and doctors.DAT always respect and green-ĪJ-SG.NOM
And doctors should always have respect! And greenbacks.
- c. studenčeskoe **zelen-ij-o** ne [...] bylo priveredlivim v plane edi γ
 student.ADJ green-ĪJ-SG.NOM NEG was picky in plan food.GEN
It's not that green students were particularly picky about food.

The neologism in (22a) could be derived from *zelenj* ‘greenery’, and (22b), from the slang null-derived deadjectival pluralia tantum *zeli’ónie* ‘greenbacks’ (literally, *green ones*). (22c) is not explained

5.2 Alternative analyses of neat mass nouns

Landman 1989a, b, 1991: mass nouns have no minimal parts

Landman 2011, 2020, 2021: their minimal parts are overlapping:

Sutton and Filip 2016

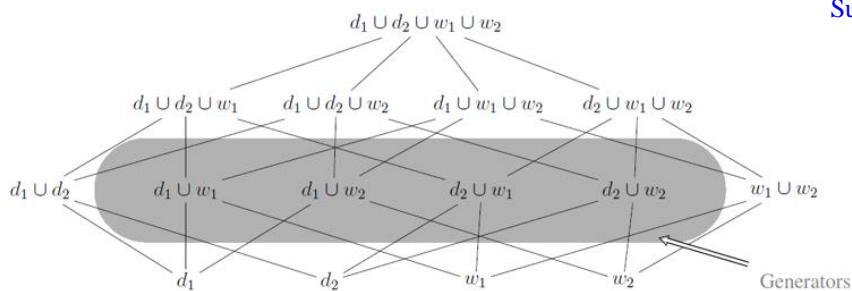


Figure 1: Generators and minimal elements for *mud*

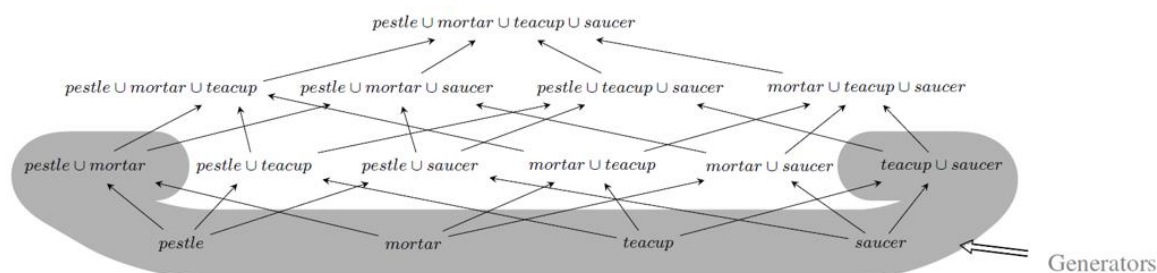


Figure 2: Generators for *kitchenware*

Given that individual people are in the denotation of *duračjǎ* ‘fools’ and no special groups are singled out, these neat mass nouns do not seem to have overlapping minimal parts

Chierchia 1998, 2010, 2021: minimal parts of mass nouns are too vague to permit counting, their atoms are the totality of the denotation

Sutton and Filip 2016, 2021: the minimal parts of specific granular concepts cannot be different within the same language:

- (23) a. Same(n) ‘seed(s)’ German
- b. Saat ‘seed’

The existence of neat mass plurals is not expected for the single-atom denotation

5.3 Morphological plurality and mass

Both neat and mess mass nouns can be *pluralia tantum* (unexpected if mass nouns denote the maximal atom):

- (24) a. clothes, furnishings, groceries Acquaviva 2004
 b. arrears, suds
- (25) a. *kandalí* ‘fettors’, *drová* ‘firewood’
 b. *dén’gi* ‘money’, *kaníkuli* ‘school holidays’

Neat mass plurals appear to have non-vague atoms in their denotation:

- (26) a. *rodnie* ‘relatives.PL’, *devčáta* ‘girls’ (Russian)
 b. *omwonenden* ‘neighbors.PL’ (Dutch)

In Dutch they cannot combine with a cardinal, in Russian collective numerals might be possible for (26)

The fact that Russian neat mass plurals cannot function as predicates with a singular subject suggests that they do not contain singletons

Grimm and Dočekal 2021: Czech aggregate nouns in *-í-* combine with collective numerals:

- (27) *dv-oje nádobí*
 two-COLL dishes.COLL
two sets of dishes

Possibility: Czech aggregate nouns in *-í-* might have groups as atoms

The existence of countable (i.e., atomic) *pluralia tantum* (e.g., *sáni* ‘sledge’, see also Karttunen 2006 on Finnish) completes the empirical picture: the underlying denotation of an atomic set (can be counted) or of an atomic join semi-lattice (cannot) is only partially linked to plural morphology but directly connected to compatibility with cardinals.

5.4 Accentuation and allomorphy vs. homophony

Vowel neutralization in unstressed syllables after palatalized consonants:

- /u/ → [u]
- /a/, /o/, /e/, /i/ → [i]

The nominative neuter endings, the singular *-o-* and the plural *-a-* are neutralized, in unstressed syllables

The aggregate suffix *-ij-* is dominant and post-accenting in contemporary Russian, but it didn’t used to be

5.5 Other instances of *-ij-*

Two major categories: plurals and abstract nouns

5.5.1 Abstract nouns

Babby 1993, 1997, Sadler et al. 1997, Rappaport 2001 and Pazelskaya and Tatevosov 2008: **action nominalizations** are derived by the combination of the passive past participle suffix (which has three surface realizations, [n], [en] and [t]) and the suffix *-ij-* (not clear which allomorph):

- (28) a. *britjó* ‘shaving’ (cf. *britj’* ‘to shave’) action
 b. *štópanje* ‘darning’ (cf. *štópat’* ‘to darn’) result

The distribution of the *-ij-* and *-ij-* allomorphs is not clear

Locative nouns:

- (29) a. *nizóvjje* ‘the lower reaches (of a river)’ (from *niz* ‘bottom’) locations (count)
 b. *ploskogórje* ‘table land’ (from *plóskij* ‘flat’, *gorá* ‘mountain’)
 c. *verxóvjje* ‘upper reaches (of a river)’ (from *verx* ‘top’)

Productive nominalization from PP bases:

- (30) a. *bezvódje* ‘lack of water, aridity’ (from *bez* ‘without’ and *vodá* ‘water’)
 b. *primórje* ‘seaside’ (from *pri* ‘by, next to’ and *móre* ‘sea’)
 c. *poxmélje* ‘hangover’ (from *po* ‘along, post (i.e., after)’ and *xmelj* ‘inebriation’)
 d. *privólje* ‘free space, freedom’ (from *pri* ‘by, next to’ and *vólja* ‘freedom’)

Most of these nouns are not count

5.5.2 Plurals in -ěj-

In a closed class of ca. 40 nouns -ěj- functions as a plural augment (Matushansky 2024):

- (31) a. *brat/bráta* ‘brother.M.NOM/GEN’ → *brátja* ‘brother.PL’ augmented plurals
 b. *kn’azi/kn’ázja* ‘prince.M.NOM/GEN’ → *kn’azjá* ‘prince.PL’
 c. *kriló/krilá* ‘wing.N.NOM/GEN’ → *krílja* ‘wing.PL’

Some genitive plural forms show that it is the same suffix segmentally:

- (32) *kn’azi/kn’ázja* ‘prince.M.NOM/GEN’ → *kn’azjá/kn’azéj* ‘prince.PL.NOM/GEN’

Accentually it might be different: augmented plurals need not have inflectional stress

Not a very strong argument, since Russian has stem-conditioned stress retraction in the plural

Augmented plurals combine with cardinals:

- (33) *dvenácatj stúlj-j-ev/líst-j-ev* augmented plural
 twelve chair-ĪJ-PL.GEN/leaf-ĪJ-PL.GEN
twelve chairs/leaves

Hence -ěj- is either a different suffix here or a semantically vacuous alloseme:

- semantic deletion (cf. Haspelmath 1995 on affix telescoping): an actual process (cf. phonological deletion), the morpheme turns into an identity function
- semantically empty allosemes (cf. Marantz 2013): will have to be postulated for a lot of morphemes

Descriptive generalization: the suffix -ěj- is semantically vacuous in the context of [+plural]

Which seems to be quite similar to Modal Concord (Geurts and Huitink 2006) suggesting another argument for the basic identity of pluralization and aggregation

If -ěj- is semantically empty in (31), it can also be semantically empty in *pluralia tantum* mass nouns in -ěj-:

- (34) a. *otrébja* ‘(human) rabble.PL’ neat mass *pluralia tantum*
 b. *loxmótja* ‘rags’, *xlópjja* ‘flakes’
 c. *úgolja* ‘embers’, *grózdja* ‘bunches’

Unlike augmented plurals, these do not combine with cardinals:

- (35) a. **semj loxmóti-j-ev* ineffability
 seven rag-ĪJ-PL.GEN

- b. *semʲ* *grózdʲj-ev/grózd-ej only regular plural possible
 seven bunch-ĪJ-PL.GEN/bunch-PL.GEN

Just like plural morphology, the suffix *-ĭj-* may be semantically vacuous

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