

# Latvian classifying adjectives

Arkady Shaldov

HSE Moscow, Laboratory on formal models in linguistics

Bucharest definiteness workshop, 08.12.2023

## Intro

Latvian definite adjectival suffix is required on classifying adjectives

- (1) a. *skaist-s*            *lācis*  
beautiful-NOM bear  
'a beautiful bear'
- b. *skaist-ai-s*            *lācis*  
beautiful-DEF-NOM bear  
'the beautiful bear'
- c. *balt-ai-s*            *lācis*  
white-DEF-NOM bear  
'a / the polar bear'

# TOC

**Kinds and definiteness**

The data

Earlier approaches

The proposal

## On kinds

Total (intensional) individuals for which a predicate is true [Chierchia 1998]

- (2) a. Dogs cannot purr / are widespread.  
b. I<sub>DEF</sub> cani non possono fare le fusa / sono diffusi.  
c. Собаки не умеют мурчать / распространены.

Singular expressions can sometimes be used

- (3) a. The dodo is extinct.  
b. Il<sub>DEF</sub> dodo è estinto. [Chierchia 1998]  
c. Додо вымер.

But only for *well-established kinds* [Carlson 1977; Dayal 2004]: an asymmetry

- (4) a. \*The tiger with gray stripes is extinct.  
b.<sup>OK</sup> Tigers with gray stripes are extinct.

## [Chierchia 1998]

DOWN operator  $\cap$  turns an intensional predicate  $\langle s, \langle e, t \rangle \rangle$  to the maximal intensional individual  $\langle s, e \rangle$

(5) For any property P

$$\cap P_{\langle s, \langle e, t \rangle \rangle} = \lambda s. \iota P_s \text{ iff } \lambda s. \iota P_s \in K$$

Symmetrical UP operator  $\cup$

(6)  $\cup k = \lambda x. x \leq k_s$

DKP

(7) If P applies to objects and k denotes a kind, then

$$P(k) = \exists x[\cup k(x) \wedge P(x)]$$

## Singulars as kinds

(8) The African lion is extinct.

[Krifka et al. 1999; Dayal 2004]: it is not just *the*

- (9) a. Every / a / one (kind of) lion is extinct. [Dayal 2004]  
b. Two / three / most (kinds of) lions are extinct.  
c.  $[[\text{LION}]] = \{\text{AFRICAN LION}, \text{ASIAN LION}, \text{BERBER LION}\}$

Nouns are ambiguous between properties of objects and kinds

Determiners combine with properties of kinds just the same

# TOC

Kinds and definiteness

**The data**

Earlier approaches

The proposal

## Definiteness

In Latvian, definiteness is marked with suffix *-ai-* on adjectives<sup>1</sup>

- (10) a. *lācis*  
bear  
'a / the bear'
- b. *skaist-s*      *lācis*  
beautiful-NOM bear  
'a beautiful bear'
- c. *skaist-ai-s*      *lācis*  
beautiful-DEF-NOM bear  
'the beautiful bear'

---

<sup>1</sup>and is unmarked when there is no adjective

# Paradigm [Kalnaca, Lokmane 2021]

Case	SG		PL	
	M	F	M	F
NOM	<i>maz-s, skaļ-š</i>	<i>maz-a, skaļ-a</i>	<i>maz-i, skaļ-i</i>	<i>maz-as, skaļ-as</i>
GEN	<i>maz-a, skaļ-a</i>	<i>maz-as, skaļ-as</i>	<i>maz-u, skaļ-u</i>	<i>maz-u, skaļ-u</i>
DAT	<i>maz-am, skaļ-am</i>	<i>maz-ai, skaļ-ai</i>	<i>maz-iem, skaļ-iem</i>	<i>maz-ām, skaļ-ām</i>
ACC	<i>maz-u, skaļ-u</i>	<i>maz-u, skaļ-u</i>	<i>maz-us, skaļ-us</i>	<i>maz-as, skaļ-as</i>
INS	<i>(ar) maz-u, skaļ-u</i>	<i>(ar) maz-u, skaļ-u</i>	<i>(ar) maz-iem, skaļ-iem</i>	<i>(ar) maz-ām, skaļ-ām</i>
LOC	<i>maz-ā, skaļ-ā</i>	<i>maz-ā, skaļ-ā</i>	<i>maz-os, skaļ-os</i>	<i>maz-ās, skaļ-ās</i>
VOC	<i>maz-s!, skaļ-š!</i>	<i>maz-a!, skaļ-a!</i>	<i>maz-i!, skaļ-i!</i>	<i>maz-as!, skaļ-as!</i>

Case	SG		PL	
	M	F	M	F
NOM	<i>maz-ais, skaļ-ais</i>	<i>maz-ā, skaļ-ā</i>	<i>maz-ie, skaļ-ie</i>	<i>maz-ās, skaļ-ās</i>
GEN	<i>maz-ā, skaļ-ā</i>	<i>maz-ās, skaļ-ās</i>	<i>maz-o, skaļ-o</i>	<i>maz-o, skaļ-o</i>
DAT	<i>maz-ajam, skaļ-ajam</i>	<i>maz-ajai, skaļ-ajai</i>	<i>maz-ajiem, skaļ-ajiem</i>	<i>maz-ajām, skaļ-ajām</i>
ACC	<i>maz-o, skaļ-o</i>	<i>maz-o, skaļ-o</i>	<i>maz-os, skaļ-os</i>	<i>maz-ās, skaļ-ās</i>
INS	<i>(ar) maz-o, skaļ-o</i>	<i>(ar) maz-o, skaļ-o</i>	<i>(ar) maz-ajiem, skaļ-ajiem</i>	<i>(ar) maz-ajām, skaļ-ajām</i>
LOC	<i>maz-ajā, skaļ-ajā</i>	<i>maz-ajā, skaļ-ajā</i>	<i>maz-ajos, skaļ-ajos</i>	<i>maz-ajās, skaļ-ajās</i>
VOC	<i>maz-ais!, skaļ-ais!/ maz-o!, skaļ-o!</i>	<i>maz-ā!, skaļ-ā!/ maz-o!, skaļ-o!</i>	<i>maz-ie!, skaļ-ie!</i>	<i>maz-ās!, skaļ-ās!</i>

## Classifying adjectives

The same marker is required on classifying adjectives — those that denote established concepts

- (11) a. *formālā* / \*-a                      *loģika*  
formal-DEF.F.NOM / -F.NOM logics  
'formal logics'
- b. *balt-\*(ai)-s*      *lācis*  
white-DEF-NOM bear  
'a / the polar bear'

## Classifying adjectives

The same marker is required on classifying adjectives — those that denote established concepts

- (11) a. *formālā* / \*-a                      *loģika*  
formal-DEF.F.NOM / -F.NOM logics  
'formal logics'
- b. *balt-\*(ai)-s*      *lācis*  
white-DEF-NOM bear  
'a / the polar bear'

Independent of the proper definiteness marker

- (12) a. *skaist-s*      *balta-ai-s*      *lācis*  
beautiful-NOM white-DEF-NOM bear  
'a beautiful polar bear'
- b. *skaist-ai-s*      *balta-ai-s*      *lācis*  
beautiful-DEF-NOM white-DEF-NOM bear  
'a beautiful polar bear'

## Independent of number

Applies to plurals and masses as well

- (13) a. *balt-ai-s*            *lācis*  
white-DEF-NOM bear  
'a / the polar bear'
- b. *balt-ie*                *lāči*  
white-DEF.PL.NOM bear  
'(the) polar bears'
- c. *balt-ā*                *tēja*  
white-DEF.F.NOM tea  
'(the) white tea'

## NP-internal

[Rutkowski and Progovac 2006: etc.]: classifying adjectives are generated NP-internally (cf. *termininological units*)

E.g. linear adjacency

- (14) a. *balt-ai-s*      *liel-ai-s*      *skudrlācis*  
white-DEF-NOM big-DEF-NOM anteater  
'the white giant anteater'
- b. #*liel-ai-s*      *balt-ai-s*      *skudrlācis*  
big-DEF-NOM white-DEF-NOM anteater  
'the white giant anteater'

## A property of NP-internal adjectives?

Passive participles (having larger structure, e.g. *viegli gāzēts* 'lightly sparkling') are not objects to the marking

Too large to fit inside NP?

- (15) a. *dzēram-ai-s*            *ūdens*  
drinking-DEF-NOM water  
'drinking water'
- b. *gāzē-t-(#ai)-s*            *ūdens*  
aerate-PTCP-DEF-NOM water  
'sparkling water'

Not morphology, cf.

- (16) *ģimenē lieto-t-ā*            *valoda*  
in\_family use-PTCP-DEF.F.NOM language  
'the language used in family'

## Well-establishedness

The concept referred by the adj+n complex must be contextually salient

- (17) a. *šodien uz ielas atradu elektrisk-o (\*-u) tējkann-u*  
today on street found electric-M.DEF.ACC (ACC) kettle-ACC  
'Today I found an electric kettle in the street.'
- b. *šodien uz ielas atradu elektrisk-u (\*-o) zirnekl-i*  
today on street found electric-M.ACC (DEF.ACC) spider-ACC  
'Today I found an electric spider in the street.'

## Well-establishedness

The concept referred by the adj+n complex must be contextually salient

- (17) a. *šodien uz ielas atradu elektrisk-o (\*-u) tējkann-u*  
today on street found electric-M.DEF.ACC (ACC) kettle-ACC  
'Today I found an electric kettle in the street.'
- b. *šodien uz ielas atradu elektrisk-u (\*-o) zirnekl-i*  
today on street found electric-M.ACC (DEF.ACC) spider-ACC  
'Today I found an electric spider in the street.'

Latvian kind-referring *-ai-* has similar distribution to English kind-referring singular *the*

Except that it doesn't require the whole DP to refer to a kind

And is low (below number)

# TOC

Kinds and definiteness

The data

**Earlier approaches**

The proposal

## [Rutkowski and Progovac 2006], Lithuanian

A reflex of the adjective movement to some Clasp

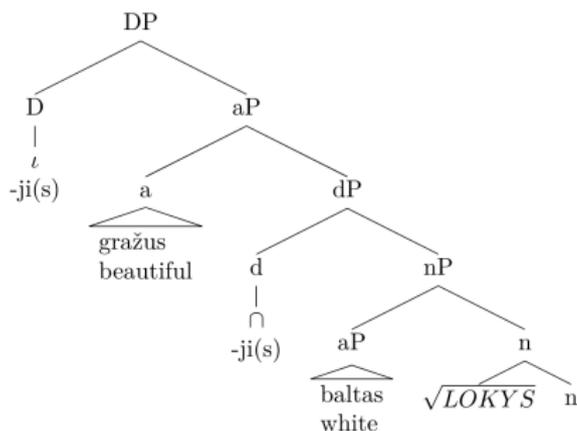
- ▶ Barely accounts for polysemy with definiteness

[Šereikaitė 2017], Lithuanian

A  $\bar{\cap}$  above every NP.

- (18) *gražus-is baltas-is lokys*  
beautiful-DEF white-DEF bear  
'beautiful polar bear'

Lithuanian

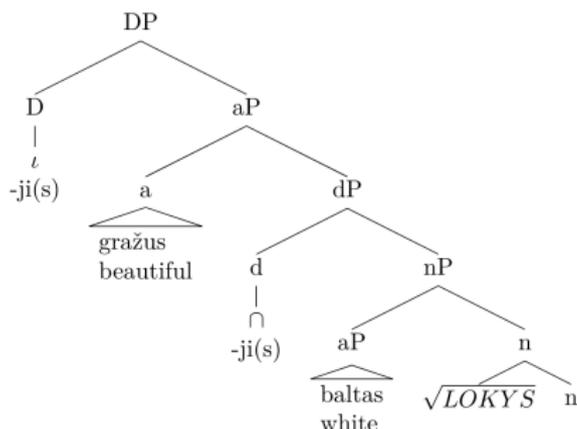


[Šereikaitė 2017], Lithuanian

$A^{\cap}$  above every NP.

- (18) *gražus-is baltas-is lokys*  
 beautiful-DEF white-DEF bear  
 'beautiful polar bear'

Lithuanian



- ▶ dP of type  $e$ :  $A^{\cup}$  is also required between dP and aP (more ad hoc projections)

# TOC

Kinds and definiteness

The data

Earlier approaches

**The proposal**

## Partitive specificity

- ▶ Latvian is an articless language like Russian and Hindi [Dayal 2004]
- ▶ *-ai-* marks partitive specificity, not definiteness [Enç 1991]
- ▶ It is visible when the definite adjective is below an indefinite

(19) a. *liel-ai-s*      *balt-ai-s*      *kaķis*  
big-DEF-NOM white-DEF-NOM cat  
'the big white cat'

b. {Walking down the street, I saw several white cats.}

*liel-s*      *balt-ai-s*      *kaķis*  
big-NOM white-DEF-NOM cat  
'a big white cat {approached me and began to meow.}'

(20) {There are several cups on the table, both big and small. I ask:}

*iedod man kād-u*      *liel-o*      *krūzi*  
give me some-ACC big-DEF.ACC cup-ACC  
'Give me one of the big cups.'

## Partitive specificity

- ▶ *-ai-* marks partitive specificity, not definiteness

$$(21) \quad \llbracket ai \rrbracket = \lambda P \lambda x. x \leq \iota P$$

## Partitive specificity

- ▶ *-ai-* marks partitive specificity, not definiteness

(21)  $\llbracket ai \rrbracket = \lambda P \lambda x. x \leq \iota P$

(22) *balt-ai-s*            *kaḡis*  
white-DEF-NOM cat

$\lambda y. y \leq \iota(\lambda x. \text{WHITE}(x) \wedge \text{CAT}(x))$

True for any individual in the plurality of contextually salient white cats

Ignoring intensionality,  $\llbracket ai \rrbracket(P) =^U (\cap P)$

## Now to kinds

- ▶ All Latvian nouns are unambiguously taxonomic in the sense of [Dayal 2004]
- ▶ They are turned object-referring by the first *-ai-* they combine with

(23)  $[[ai]](\text{POLAR BEAR}) = \lambda x.x \leq \iota \text{POLAR BEAR} = \lambda x.x \text{ is a polar bear}$

- ▶ The definiteness requirement is satisfied if the kind is well-established (i.e. salient)

## Definiteness and kinds

- (24) a. *liel-s* [<sub>AP</sub> *balt-ai-s* *kaķis*]  
big-NOM white-DEF-NOM cat  
 $\lambda x. \text{BIG}(x) \lambda x. x \leq \iota(\lambda x. \text{WHITE}(x) \wedge \text{CAT}(x))$   
'An indefinite big individual in the plurality of contextually salient white cats.'
- b. *liel-s* [<sub>NP</sub> *balt-ai-s* *lācis*]  
big-NOM white-DEF-NOM bear  
 $\lambda x. \text{BIG}(x) \lambda x. x \leq \iota(\lambda x. \text{WHITE\_BEAR}(x))$   
'An indefinite big individual in the plurality of polar bears (a contextually salient kind).'

## Maximize

Why can't a definite adjective be above an indefinite one?

- (25) *liel-ai-s*     *balt-\*(ai)-s*     *kaķis*  
big-DEF-NOM white-DEF-NOM cat  
'the big white cat'

## Maximize

Why can't a definite adjective be above an indefinite one?

- (25) *liel-ai-s*    *balt-\*(ai)-s*    *kaķis*  
big-DEF-NOM white-DEF-NOM cat  
'the big white cat'

A case of Maximize presupposition [Heim 1991; Coppock and Beaver 2015]

A plurality of salient cats exists

⇒ A plurality of salient white cats exists

⇒ The presupposition on *baltais* is always satisfied

## Bare nouns?

Partitive interpretation is unavailable for high *-ai-*

- (26) a. *balt-ai-s*            *lācis*  
white-DEF-NOM bear  
'a / the polar bear'
- b. *skaist-ai-s*            *lācis*  
beautiful-DEF-NOM bear  
'#one of the beautiful bears'

## Bare nouns?

Partitive interpretation is unavailable for high *-ai-*

- (26) a. *balt-ai-s*            *lācis*  
white-DEF-NOM bear  
'a / the polar bear'
- b. *skaist-ai-s*            *lācis*  
beautiful-DEF-NOM bear  
'#one of the beautiful bears'

- ▶ Only  $\iota$  and  $\cap$  available as a type-shifters
- ⇒ Only maximal individual in (26b)
- ⇒  $\cap$  can be applied to (26a), and then DKP [Chierchia 1998]

## Summary

- ▶ There is a definiteness marker above any NP in Latvian
- ▶ Monosemy can be derived if we assume the marker marks partitive specificity
- ▶ The specificity, thus, is specificity of a taxonomic individual
- ▶ Requires an assumption that all Latvian nouns are inherently taxonomic

# Sources

- Greg Carlson. *Reference to kinds in English*. Indiana University Linguistics Club. University Microfilms, 1977.
- Gennaro Chierchia. Reference to kinds across languages. *Natural Language Semantics*, (6): 339–405, 1998.
- Elizabeth Coppock and David Beaver. Definiteness and determinacy. *Linguistics and Philosophy*, (38):377–435, 2015.
- Veneeta Dayal. Number marking and (in)definiteness in kind terms. *Linguistics and Philosophy*, (27):393–450, 2004.
- Mürvet Enç. The semantics of specificity. *Linguistic Inquiry*, 22(1):1–25, 1991.
- Irene Heim. Artikel und definitheit. In A. von Stechow and D. Wunderlich, editors, *Semantik: Ein internationales Handbuch der zeitgenössischen Forschung*, pages 487–535. Mouton de Gruyter, Berlin, 1991.
- Manfred Krifka, Francis Jeffrey Pelletier, Gregory N. Carlson, Alice ter Meulen, Godehard Link, and Gennaro Chierchia. *Genericity: an introduction*, pages 1–124. University of Chicago Press, Chicago, 1999.
- Paweł Rutkowski and Ljiljana Progovac. Classifying adjectives and noun movement in lithuanian. In Changguk Yim, editor, *Proceedings of the 8th Seoul International Conference on Generative Grammar: Minimalist views on language design*, pages 265–277, Seoul, 2006. Hankook, Korean Generative Grammar Circle.
- Milena Šereikaitė. Reference to kinds within dp. Unpublished manuscript, 2017.