

# Distributed Morphology: Decomposed Inflection Class Features 2

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# Trans-Paradigmatic Syncretism

**Trans-paradigmatic syncretism** can be accounted for by decomposing privative class features into more primitive, binary class features that are cross-classified (yielding natural classes of inflection classes). Predecessors of the system in Alexiadou & Müller (2005):

- Halle (1992) on Latvian noun inflection:  $[\pm\text{marginal}]$ ,  $[\pm\text{marked}]$  in addition to the “standard” class features A, B
- Nessel (1994) on Russian noun inflection:  $[\pm\text{nom-end}]$  and  $[\text{a/i}\text{-gen-end}]$
- Oltra Massuet (1999) on verbal inflection in Catalan
- Müller (2005) on Icelandic noun inflection
- Trommer (2005) on Amharic verbs.

Alternative approaches to natural classes of noun inflection classes without feature decomposition: McCreight & Chvany (1991), Johnston (1996), Wiese (2003)

# Latvian Noun Inflection: The Paradigm

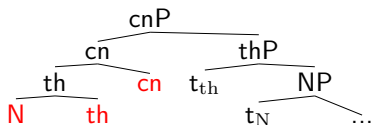
## T<sub>1</sub>: Latvian noun inflection

	IA	IIA	IIIA	IVA	VB	VIB	VIIIB	VIIIB
	zīrg 'horse'	gulb 'swan'	akmen 'stone'	tīrg 'market'	ma:s 'sister'	gov 'cow'	dzirn 'handmill'	zem 'earth'
nom	-s	-i-s	-s	-u-s	-a	-s	-	-e
gen	-a	-j-a	-s	-u-s	-a-s	-s	-	-e-s
dat	-a-m	-i-m	-i-m	-u-m	-a-j	-i-j	-	-e-j
inst	-u	-i	-i	-u	-u	-i	-	-i
acc	-u	-i	-i	-u	-u	-i	-	-i
loc	-a:	-i:	-i:	-u:	-a:	-i:	-	-e:
nom	-i	-j-i	-j-i	-i	-a-s	-i-s	-u-s	-e-s
gen	-u	-j-u	-j-u	-u	-u	-j-u	-u	-j-u
dat	-ie-m	-j-ie-m	-j-ie-m	-ie-m	-a:-m	-i:-m	-u:-m	-e:-m
inst	-ie-m	-j-ie-m	-j-ie-m	-ie-m	-a:-m	-i:-m	-u:-m	-e:-m
acc	-u-s	-j-u-s	-j-u-s	-u-s	-a-s	-i-s	-u-s	-e-s
loc	-uo-s	-j-uo-s	-j-uo-s	-uo-s	-a:-s	-i:-s	-u:-s	-e:-s

# Structure of Latvian Nouns

Latvian nouns have a functional morpheme for **theme vowels** (th), and a functional morpheme for case/number (cn).

(1) Syntactic structure of the Latvian noun (one possibility):



# Decomposition of Class Features

Choice of the theme vowel depends on an inflection class feature on the noun stem. Class features: [A], [B], [ $\pm$ Marginal], [ $\pm$ Marked].

(2)

class B:	u	i	e	a	
class A:	u	i <sub>b</sub>	i <sub>a</sub>	a	
	+	+	-	-	Marginal
	+	-	+	-	Marked

# Vocabulary Items for th, plus Readjustment Rules

Redundancy rules: [+fem] → class B; [-fem] → class A (with lexical exceptions)

## (3) Vocabulary items (theme vowels; decreasing specificity):

- a. /e/ ↔ {[N], [B], [-marginal, +marked]}
- b. /i/ ↔ {[N], [!marginal, -!marked]}
- c. /u/ ↔ {[N], [+marginal]}
- d. /a/ ↔ {[N]}

- The insertion context for /i/ refers to variables over feature values (Halle himself uses a disjunction of two specifications here).
- Two additional sets of readjustment rules are necessary to change the outcome of theme vowel insertion.

## (4) Readjustment rules for theme vowels:

- a. (i) [-cons]-X → [+high]/\_\_cn:[sg.acc]
- (ii) [-cons]-X → X-X/N:[classB]\_\_cn:[pl.loc/dat]
- (iii) [-cons]-X → X-X/\_\_cn:[sg.loc]
- b. (i) ∅ → ie/N:[classA]\_\_cn:[pl.dat]
- (ii) ∅ → u/N:[classA]\_\_cn:[pl.acc]
- (iii) ∅ → (u)o/N:[classA]\_\_cn:[pl.loc]

# Vocabulary Items for cn, plus Readjustment Rules

## (5) Vocabulary items (case/number markers):

- a. /a/ ↔ {[classA],[Sg.Gen]}
- b. /i/ ↔ {[classA],[Pl.Nom]}
- c. /j/ ↔ {[+fem],[Sg.Dat]}
- d. /∅/ ↔ {[classB],[Sg.Nom]}
- e. /∅/ ↔ {[Sg.Acc/Loc]}
- f. /u/ ↔ {[Pl.Gen]}
- g. /m/ ↔ {[Dat]}
- h. /s/ ↔ {-}

Certain instances of case syncretism remain to be derived. Suggestions: further readjustment rules, as in (6). (Note: These readjustment rules are not phonological in nature; rather, they correspond to **rules of referral** or **feature-changing impoverishment**).

## (6) Rules of referral:

- a. (i) Inst → Acc/\_\_\_cn:[Sg]
- (ii) Inst → Dat/\_\_\_cn:[Pl]
- b. (i) Nom → Gen/N:[classB,+marg]\_\_\_cn:[sg]
- (ii) Gen → Nom/N:[classA,+marg]\_\_\_cn:[sg]

# Final Vowel Changes

- (7) Morpho-phonological readjustment rules:
- $[-\text{cons}] \rightarrow \emptyset / \text{N}:[\text{classB}, +\text{marginal}] \_\_\text{cn}:[\text{sg.gen}]$
  - $[-\text{cons}] \rightarrow \emptyset / \text{N}:[\text{classA}, -\text{marked}] \_\_\text{cn}:[\text{sg.nom}]$
- (8) General phonological rules of Latvian:
- $[-\text{back}, -\text{cons}] \rightarrow /j/ / \_\_\text{[-cons]}$
  - $[-\text{cons}] \rightarrow \emptyset / \_\_\text{[-cons]}$



# Literatur

- Alexiadou, Artemis & Gereon Müller (2005): Class Features as Probes. Ms., Universität Stuttgart and Universität Leipzig. To appear in Asaf Bachrach and Andrew Nevins (eds.), *The Bases of Inflectional Identity*. Oxford University Press.
- Halle, Morris (1992): The Latvian Declension. In: G. Booij & J. van Marle, eds., *Yearbook of Morphology 1991*. Kluwer, Dordrecht, pp. 33–47.
- Johnston, Jason (1996): Systematic Homonymy and the Structure of Morphological Categories. PhD thesis, University of Sydney.
- McCreight, Katherine & Catherine Chvany (1991): Geometric Representation of Paradigms in a Modular Theory of Grammar. In: F. Plank, ed., *Paradigms*. Mouton de Gruyter, Berlin, pp. 91–111.
- Müller, Gereon (2005): Syncretism and Iconicity in Icelandic Noun Declensions: A Distributed Morphology Approach. In: G. Booij & J. van Marle, eds., *Yearbook of Morphology 2004*. Springer, Dordrecht, pp. 229–271.
- Neset, Tore (1994): A Feature-Based Approach to Russian Noun Inflection. *Journal of Slavic Linguistics* 2, 214–237.
- Oltra Massuet, Isabel (1999): On the Notion of Theme Vowel: A New Approach to Catalan Verbal Morphology. Master of science thesis, MIT, Cambridge, Mass.
- Trommer, Jochen (2005): A Feature-Geometric Approach to Amharic Verb Classes. Ms., Universität Leipzig.
- Wiese, Bernd (2003): Categories and Paradigms: On Underspecification in Russian Declension. Ms., IDS Mannheim. To appear in L. Gunkel, G. Müller and G. Zifonun, eds., *Explorations in Nominal Inflection*. Berlin: Mouton de Gruyter.