

Li8: Morphology/Michaelmas 2017

Contrasts, meaning and relations

Jim Blevins (jpb39)
M11-12 / LB9 / 30-10

The function/meaning of morphological contrasts

- ❖ Recall the three basic conceptions of the function of contrasts:
 - ❖ **Atomistic:** minimal contrasts (or variants) are individually meaningful; a morphological system is fully determined by an inventory of minimally contrastive variants.
 - ❖ **Discriminative:** minimal contrasts serve principally to distinguish larger units, whose function is defined by systems of oppositions within a language.
 - ❖ **Autonomous:** contrasts are often functionless residues, which arise due to historical changes and are preserved by inertia.

Meaning and communicative function

- ❖ Implicational and atomistic models operate with significantly different conceptions of ‘meaning’ (and different views of the role of communication):
 - ❖ Atomistic models assume that minimum recurrent parts can be assigned discrete features (through a morphemic association, a realization relation, etc.) and that these properties express mainly extramorphological properties that can ‘feed’ semantic interpretation.
 - ❖ Discriminative models assume that minimal parts serve two main functions: (i) to discriminate larger units with a communicative function in a language system, and (ii) to express intramorphological information about the shape (or distribution) of related forms.
- ❖ Discriminative models tend to be agnostic about the value of features, and to adopt models of meaning based more on distributional (vector) semantics.

Frameworks of morphological analysis

	Part-whole relations	Interpretation of parts	System organization
Discriminative	abstractive recurrent parts are abstracted from words and larger forms	discriminative parts discriminate forms with a communicative function	implicational variation encodes information about the shape of other forms
Atomistic	constructive words are built from smaller persistent units	denotative recurrent parts express or realize properties	'genealogical' forms are related by common parts or common rules

Two intuitions about morphological structure

- ❖ Atomistic: Languages are structured in such a way as to facilitate the disassembly and reassembly of systems into inventories of independently functional parts.
- ❖ Discriminative: Languages are structured in such a way as to permit the extrapolation of full systems from exposure to (often fragmentary) parts of the system.
- ❖ To what extent do these intuitions support insightful analyses of the full range of morphological contrasts?

The learner as analyst

- ❖ **Atomistic:** On the basis of the forms that they encounter, speakers are able to (i) identify the shape and function of **recurrent parts**, and (ii) formulate general **combinatoric principles** that allow them to reconstitute encountered forms and deduce unencountered forms.
- ❖ **Discriminative:** The forms that speakers encounter are parts of networks of elements, related by patterns of mutual implication. The 'meaning' conveyed by a form includes **intramorphological** information about shape, function and distribution of related forms.

Assumptions of atomistic approaches

- ❖ It must be possible to disassemble forms into inventories of recurrent atomic elements **with no loss of information**.
- ❖ Atomic elements must be analyzable **in isolation**.
- ❖ It must be possible to provide a full description of a morphological 'system' in terms of **static inventories** of elements, and principles that govern their arrangement.
- ❖ Disassembled parts must be **genuinely independent**, and not just provide distributed representations of larger units.

Assumptions of discriminative approaches

- ❖ It must be possible to **discriminate** forms with an identifiable communicative function and a specifiable distribution.
- ❖ Systematic variation in form and distribution must correlate in ways that permit speakers to master a system without encountering all of its forms in all of their uses.
- ❖ It must be possible to quantify the **informativity** of elements and patterns, and correlate these measures with cognitive measures of ease / difficulty of acquisition and / or processing.

Implicational interpretation of exchange patterns

Exchange patterns in Spanish (Matthews 1991: 199) and Estonian (Erelt et al. 1995):

Form	Cell	Implication	Form	Cell	
compra	3sg.Ind	$X_a \leftrightarrow X_e$	compre	3sg.Subj	'to buy'
come	3sg.Ind	$X_e \leftrightarrow X_a$	coma	3sg.Subj	'to come'
hekki	Part.Sg	$X_i \leftrightarrow X_e$	hekke	Part.Pl	'hedge'
lille	Part.Sg	$X_i \leftrightarrow X_e$	lilli	Part.Pl	'flower'

Predictive stem variation in Estonian

Stem syncretism typical of noun declensions exhibiting 'weakening' gradation:

	Sg	Plu
Nom	vakk	vakad
Gen	vaka	vakkade
Part	vakka	vakkasid
Illa	vakasse	vakkadesse
⋮	⋮	⋮
Com	vakaga	vakkadega

'bushel'

Denotational meanings of recurrent partials

Recurrent partials occurring in grammatical case forms of VAKK

Form	Paradigmatic Distribution
vakk	Nom.Sg / Part.Sg
vak-	Gen.Sg
-a	Gen.Sg / Part.Sg
vaka	Gen.Sg / Nom.Pl / Illa.Sg...Com.Sg
vakka	Part.Sg / Part.Pl / Gen.Pl
vakkade	Gen.Pl / Illa.Pl...Com.Pl
-de	Gen.Pl / Illa.Pl...Com.Pl
-d	Nom.Pl
-sid	Part.Pl

Implicational meanings of recurrent partials

Predictive value of forms under given interpretations:

Form	Cell	Predictive Value
vakk	Nom.Sg	'weakening' gradation and regular endings
vaka	Gen.Sg	whole paradigm
vakka	Part.Sg	whole paradigm
vakad	Nom.Pl	→ vaka → whole paradigm
vakkade	Gen.Pl	→ vakka → whole paradigm
vakkasid	Part.Pl	→ vakka → whole paradigm
vakasse	Illa.Sg	→ vaka → whole paradigm
vakkadesse	Illa.Pl	→ vakkade → vakka → whole paradigm

Meaning and paradigmatic distribution

- ❖ The interpretation of Gen.Sg *vaka* is particularly instructive, as it indicates how paradigmatic distribution guides form deduction.
- ❖ Estonian has three degrees of length, traditionally described in terms of ‘quantities’: Q1 (short), Q2 (long), Q3 (overlong).
- ❖ No single item exhibits a three-way contrast, but the three quantities are illustrated by *vaga* (Q1) ‘pious’, *vaka* (Q2), *vakka* (Q3).
- ❖ Forms with Q1 and Q3 occur in a range of declensional types.
- ❖ But a Q2 form like *vaka* can **only** occur in a grade-alternating paradigm, where it expresses Gen.Sg (*vaka*) or Nom.Sg (*mõte*).

Q2 stems in Estonian

Singular forms of declensions exhibiting 'weakening' and 'strengthening' gradation:

	'Weakening'	'Strengthening'
Nom	vakk	mõte
Gen	vaka	mõtte
Part	vakka	mõtet
Illa	vakasse	mõtesse
⋮	⋮	⋮
Com	vakaga	mõtega
	'bushel'	'thought'

System-mediated meaning

- ❖ No meaning can be directly associated with Q2 forms.
- ❖ The informativeness of Q2 stems reflects the way that phonological contrasts are reflected in the morphology:
 1. The three-way phonological contrast is associated with a two-way strong-weak contrast in the morphology.
 2. Strong and weak forms are associated with specific cells in the two types of grade-alternating declensions.
- ❖ Hence a Q2 form implies one of two alternating patterns.

Morphological information

- ❖ From an atomistic perspective, a system like Estonian may seem baroque or even perversely complicated.
- ❖ Why should a system tolerate so much variation, when a single stem could express the same lexical content?
- ❖ The answer is that the variation is informative about other forms of an item, **in the context of the system.**
- ❖ (As we will see in discussions of sub-phonemic patterns, it is also possible that endings play a circumscribed role.)