

Li8: Morphology/Michaelmas 2017

Implications and arrangements

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Michaelmas Roadmap

- ❖ We began by surveying attested alternations and contrasts.
- ❖ We next considered the types of available interpretations:
 - ❖ In atomistic approaches, contrasts have extramorphological interpretations and systems consist of repositories of variants.
 - ❖ In discriminative approaches, contrasts have intramorphological interpretations and systems comprise networks of oppositions.
- ❖ Arrangements of contrasts present the same basic alternatives:
 - ❖ Arrangements can be defined in terms of atomistic association, or in terms of intramorphological organizational properties.

Implicational function

- ❖ These implicational relations are not a quirk of Estonian but reflect general organizational principles that apply to inflectional systems:

The most general insight is that **one inflection tends to predict another** ... This insight can be incorporated into any model. Traditionally, it is the basis for the method of exemplary paradigms. If the alternations were independent, these would have to be numerous ... But since they are interdependent, their number can be very small ... (Matthews 1991: 197f.)

- ❖ The purest expression of 'predictive value' is provided by **morphemic** patterns (Matthews 1991, Aronoff 1994, Maiden 2005).

Predictive morphemics

What one is saying ... is that the Future Participle formation is 'parasitic', in a sense on the Past Participle formation: **if one 'knows' the latter then one can use this 'knowledge' to derive the former.** (Matthews 1972: 86)

The third ['supine'] stem constitutes an allegedly inviolable distributional regularity – what Aronoff terms a morphome – in that its presence in any one member of the specified, idiosyncratic, set of cells, **always implies its presence** in all of the other members of the set. (Maiden 2005: 137)

For any Verb, however irregular it may be in other respects, the Present Infinitive **always predicts** the Imperfect Subjunctive. For the Verb 'to flower', flōrere → flōrerem; for the irregular Verb 'to be', esse → essem, and so forth without exception. (Matthews 1991: 195)

The 'supine stem' in Latin

Conjugational forms based on the 'supine stem' (Matthews 1972, 1991)

	Supine	Past Pass Prt	Fut Act Prt	
AMŌ	amāt um	amāt us	amāt ūrus	'to love'
MONEŌ	monit um	monit us	monit ūrus	'to advise'
TEGŌ	tēct um	tēct us	tēct ūrus	'to cover'
CAPIŌ	capt um	capt us	capt ūrus	'to take'
AUDIŌ	audīt um	audīt us	audīt ūrus	'to hear'

Intramorphological meaning

- ❖ The stems *amāt-*, *monit-*, *tect-*, *capt-*, *audīt-* have no 'meaning' in addition to the 'lexical meaning' associated with their roots.
- ❖ They have no substantive properties that dictate their distribution.
- ❖ Instead, their value is **predictive**: each member of the series identifies the stem form of the **other** members of the series.
- ❖ These patterns with mainly predictive value have remained stable over the history of Romance languages (Maiden 2005, 2010).
- ❖ These stems have the same implicational function as Estonian declensional stems but within a larger conjugational space.

Morphomic patterns in Sanskrit

From the past passive participle, of whatever formation, is made, by adding the possessive suffix *vant*, a secondary derivative having the meaning and construction of a perfect active participle: for example *tát kṛtāvān* 'having done that'; *tām nigīrṇavān* 'having swallowed him down'. Its inflection is like that of other derivatives made with this suffix ...; its feminine ends in *vatī*; its accent remains on the participle. (Whitney 1889: 344).

By adding the possessive suffix *vat* to the past pass. part., a new form of very common occurrence is made, which has the value of a perfect active participle; — e.g. *kṛ-tá*, 'done': *kṛtá-vat*, 'having done'. It is generally used as a finite verb, the copula being omitted ... (Macdonnell 1927: 136).

the active participle-stem may be made mechanically from the 3d pl. indic. by dropping *i* (Whitney 1889: 246)

Morphomic participles in Sanskrit

Structure of Sanskrit *kṛtá* and *kṛtávat* (Whitney 1885: 21)

	Root	Past Pass	Poss
Past Pass Prt	kṛ	tá	—
Perf Act Prt	kṛ	tá	vat

The locus of implication

- ❖ As in Estonian, the implicational value of morphomic stems cannot be tied to their form or properties in isolation but is mediated by their relation to larger words that are associated with specific paradigm cells.
- ❖ However, the predictive 'meaning' of morphomic stems is not restricted to sub-word units; word forms that occur in irreducibly 'unnatural' class of environments illustrate comparable patterns of **predictive meaning**.

Non-natural distributions in Cushitic

Syncretisms in Afar (Hayward 1980: 130) and Somali/Dhasaanac (Tosca 2007: 266)

	Afar Non-Perf Neg S	Somali Gen Past	Dhasaanac Pos Perfect
1Sg	mageda	furay	furi
2Sg	magedda	furtay	fuddi
3Sg.M	mageda	furay	furi
3Sg.F	magedda	furtay	fuddi
1Plu	mageda	furnay	
1Plu.Incl			furi
1Plu.Excl			fuddi
2Plu	mageddan	furteen	fuddi
3Plu	magedan	fureen	furi

Non-natural interpretations in Cushitic

Interpretations in Afar (Hayward 1980: 130) and Somali/Dhasaanac (Tosca 2007: 266)

Afar	Somali	Dhasaanac	Interpretations
mageda	furay		1Sg/3Sg.M
magedda	furtay		2Sg/3Sg.F
		furi	1Sg/3Sg.M/1Plu.In/3Plu
		fuddi	2Sg/3Sg.F/1Plu.Ex/2Plu
magenda	furnay		1Plu
mageddan	furteen		2Plu
magedan	fureen		3Plu

Stem alternations in Dhasaanac

Stems ending in a coronal consonant make their B forms through a rule of Consonant Gradation, i.e., a change in the last consonant of the stem (Tosca 2007: 267)

Gradation	Impv.Sg	Pv/A	Pv/B	
t → tt	léet	leeđi	leeti	'to fall down'
ɖ → ɖɖ	máɖ	mađi	maɖɖi	'to go and buy'
n → nn	šúun	šuuni	šuunni	'to collect'
s → t	dúus	duusi	duuti	'to fart'
r → ɖɖ	gúur	guuri	guuɖɖi	'to migrate'
l → ll	dál	dali	dalli	'to give birth'

Non-natural cohort implications

- ❖ In the Afar and Somali paradigms, 1sg and 3sg.Masc forms imply each other, as do 2sg and 3sg.Fem forms.
- ❖ In Dhasaanac, the 1sg/3sg.Masc forms also mutually imply 1Plu.In and 3Plu forms, and the 2sg/3sg.Fem forms mutually imply 1Plu.Ex and 2Plu forms.
- ❖ There is no evidence that unnatural distributions incur a high learning cost or are particularly prone to historical reanalysis.
- ❖ Given the uniformity of cohort classes, a learner can exploit the fact that each form of a Dhasaanac verb predicts 3 other forms.

Naturalness and context-independent meaning

- ❖ The fact that variation may cut across natural feature classes does not undermine its predictive value, but calls into question the grammatical status of the notion of 'natural class' or 'naturalness'.

Once unnatural classes are admitted, however, they can freely substitute for natural classes ... the choice between one or the other interpretation becomes a matter of personal preference, thereby **weakening the notion that natural classes impose any necessary constraints on morphological behavior**. (Baerman 2004: 825)

Natural classes are a special case of idiosyncratic historical residues, i.e., they are the ones which most transparently reflect their phonetic origins and which therefore occur most frequently and are most likely to be encountered and embraced by phonologists (Mielke 2008: 5)

The status of 'natural' form/function alignment

- ❖ What are the constraints on the patterning of contrasts:
 - ❖ **Natural classes** are not normative but historical residues of recent or transparent patterns of morphologization.
 - ❖ There is no pressure to bring **non-natural patterns** into alignment with natural feature classes provided that they are discriminable in shape and distribution.
 - ❖ Regular and irregular patterns coexist in stable systems, so both must perform some function within the systems.

Grammar as “meaningful arrangements of forms”

The meaningful arrangements of forms in a language constitute its grammar. In general, there seem to be four ways of arranging linguistic forms. (1) **Order** is the succession in which the constituents of a complex form are spoken ... (2) **Modulation** is the use of phonemes which do not appear in any morpheme, but only in grammatical arrangements of morphemes ... (3) **Phonetic modification** is a change in the primary phonemes of a form ... (4) **Selection** of forms contributes a factor of meaning because different forms in what is otherwise the same grammatical arrangement, will result in different meanings. (Bloomfield 1933: 163f.)



Leonard Bloomfield
(*Language* 1933)

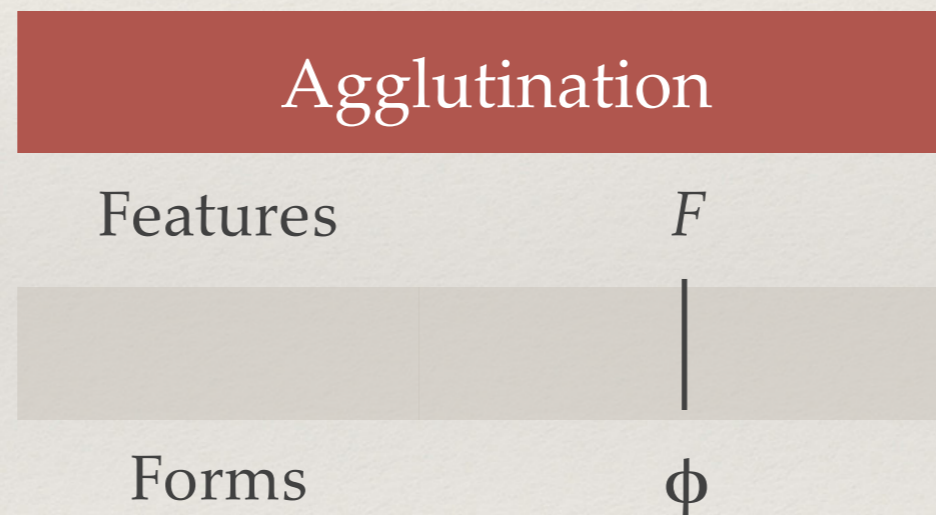
Typologies of syntagmatic arrangement

- ❖ An influential typology of morphological arrangements is based on the type of association between features and forms (Sapir 1921):

Pattern	Agglutination	Fusion	Fission
Features	F	$F_1 \dots F_n$	F
Forms	ϕ	ϕ	$\phi_1 \dots \phi_n$

Agglutination

- ❖ In a perfectly agglutinative system, each feature is expressed by a single unit of form and each unit of form expresses a single feature:



Agglutination in Finnish nouns (Karlsson 1999: 16)

- ❖ Finnish nominals exhibit a suffixal structure in which the noun stem is followed by a number marker, then a case marker, then a possessive marker and a final discourse particle:

autoissasikin

auto	i	ssa	si	kin
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car	PLU	INES	2SG.POSS	too
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'in your car too'

Agglutination in Turkish verbs (Lewis 2000: 114)

- ❖ Turkish is often the poster child for agglutination. But even in Turkish, individual units must be abstracted from the surface form:

almıyacak			
al	ma	y	acak
take	NEG	Y	FUT
'he will not take'			

- ❖ (*y* is added after vowel-final stems and final *-a* becomes *-ı* before *y*)

Deviations from agglutination

- ❖ It is rare that a system does not exhibit at least some systematic divergence from a consistently agglutinative pattern.
- ❖ Hence all agglutinative systems are at least partially 'mixed'.
- ❖ In this way, the agglutinative ideal is like the normative status of regular formations: both are ideal states that are rarely attested.

Deviation I: Shortfall of form units

- ❖ In Finnish nominals, there is no marking of nominative in the singular, and a single element *-t* marks the nominative and plural:

	Sing	Plu
Nominative	auto	autot
Inessive	autossa	autoissa

- ❖ It is not possible to account for this pattern just by classifying nominative as a formally unmarked case; in order to account for the absence of the regular plural (*-i*), *-t* must be treated as expressing plurality, but only on the nominative plural form.

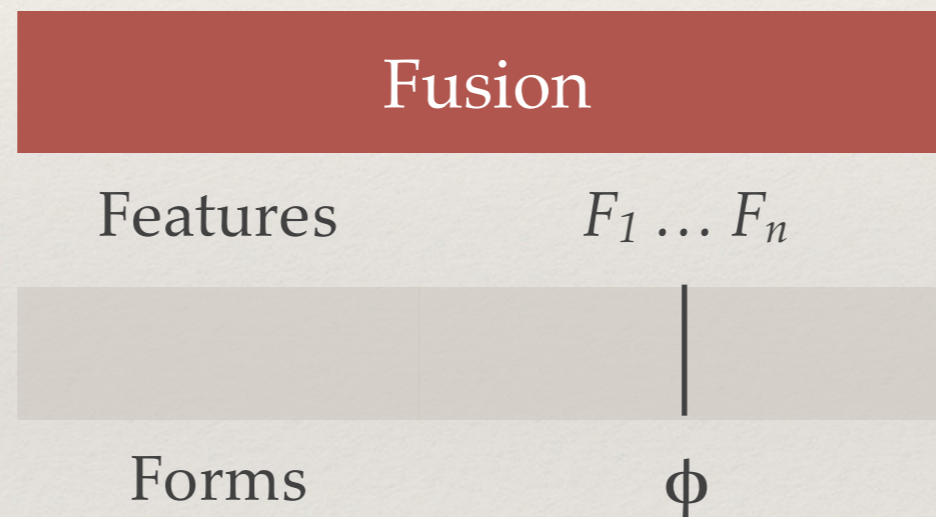
Deviation II: Excess of form units

- ❖ Turkish exhibits the opposite mismatch, as some verb forms contain more form units than associated features/meanings:

Just as some verbs take a doubly causative suffix for no obvious reason, so some take a doubly passive suffix, e.g., the passive of *de-* 'to say' is *de-n-il-* as well as *de-n-* (Lewis 2000: 152)

Fusion ('cumulative exponence')

- ❖ Fusion (or 'cumulative exponence' Matthews 1991) arises when an indivisible unit of form is associated with multiple features.



Fusion in agreement marking

- ❖ The personal pronouns of Indo-European languages are highly fusional, as are (coincidentally?) the verbal agreement markers.
- ❖ In contrast to Finnish, nouns in Russian always express case and number cumulatively (and exhibit considerable affixal syncretism):

	Sing	Plu
Nominative	kniga	knigy
Genitive	knigy	knig

'book'

- ❖ It is possible to segment the stem *knig-* and the endings *-a* and *-y*, but it not possible to break the stem or endings down into individual markers of person and/or case.