

Li8: Morphology/Michaelmas 2017

Units and relations

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Implications of templatic patterns in Semitic

- ❖ What is the status of consonantal roots and vocalic patterns?
 - ❖ Are consonantal roots lexical entries? If so, what kind of 'core' meaning can they be assigned that combines with the meanings of other sub-word elements to define the meanings of words?
 - ❖ Or are roots emergent abstractions over sets of words or larger expressions, with meanings that are generalizations over word meanings? If so, is this information expressed in any declarative form or is it implicit in the organization of formally-similar words?
- ❖ Can roots be assigned a positive characterization in general?
- ❖ Or are roots merely the remnants that remain when inflectional and derivational elements are removed from free word forms?
- ❖ Which conception is more compatible with the facilitatory effects of morphological family size and other types of external evidence?

Position-class templates in Navajo

- ❖ A verb consists of a stem and a sequence of prefixes.
- ❖ Each prefix is assigned to one of 16 slots in two 'domains'.
- ❖ Not all slots must (or can) be filled simultaneously, and there are dependencies between the choice of fillers of **nonadjacent** slots.

Position-class slots in Navajo (YM1987:d37f.)

- ❖ The elements of a Navajo verb can be assigned to 17 distinct 'slots':

Disjunct Domain					Conjunct Domain						Stem			
O			I		II	III	IV	V		VI	VII	VIII	IX	X
	a	b	c	d	e					a	b	c		

The 'Disjunct Domain'

Slot	Filler
O	Postpositional argument/Possessive prefix
Ia	Null postposition
Ib	Adverbial - Thematic
Ic	(Reflexive)
Id	(Reversionary)
Ie	(Semeliterative)
II	(Iterative)
III	(Distributive plural)

The 'Conjunct Domain'

Slot	Filler
IV	Direct object pronouns
V	Deictic subject pronouns
VIa	Adverbial - Thematic
VIb	Adverbial - Thematic
VIc	Transitional / Semelfactive aspect markers
VII	Modal - Aspectual conjugation markers
VII	Subject pronouns
IX	'Classifier'

Position class template (McDonough 2003: 25)

- ❖ There is often significant variation between surface forms and the 'underlying' shape of the individual formatives assigned to slots:

bíbiniissijh

bí	bi	n(i)	y(i)	(y)ish	ł	sijh
against	3.OBJ	TERM	TRANS	ØIMP/1S	'cl'	stand.IMP
Ib	V	VI	VI	VII/VIII	IX	X

'I lean him standing against it' (YM1987:d169)

Implications of templatic patterns in Athapaskan

- ❖ A 'template' maps out the space of possible expansions but does not represent the interdependency of choices within that space.
- ❖ As in the simpler examples we have considered, templates are not in the language, but are part of the scaffolding of a description.
- ❖ So what strategies are available for describing the information about distribution and arrangement expressed by a template?
- ❖ Can this information be associated with individual formatives?
- ❖ Or are the properties encapsulated in a system of words or stems?
- ❖ (And is it possible to devise a universal nomenclature for all of the diverse types of morphological elements in the world's languages?)

The choice of units

- ❖ Beginning with Hockett's (1954) *Two models of grammatical description*, it has been conventional to classify morphological approaches in terms of the units of analysis that they recognize:
 - ❖ **Item and arrangement** models reduce a morphological system to an inventory of minimal elements and combinatory rules.
 - ❖ **Item and process** models reduce a system to a stock of lexical bases and a set of processes that build up larger units.
 - ❖ **Realizational** models recognize sets of abstract paradigm cells and apply interpretive rules to spell-out their formal realization.
 - ❖ **Word and paradigm** models organize morphological systems into networks of words, linked by implicational relations.

The status of units

- ❖ Yet units have a markedly different status across approaches.
 - ❖ Item and arrangement models fit within a broadly atomistic conception in which a language is analyzed in terms of a hierarchy of units and levels and general combinatoric devices.
 - ❖ Item and process models differ mainly in treating lexical units as 'items' and introducing grammatical elements in 'processes'.
 - ❖ Realizational models are theoretical hybrids. Like IA models, they retain a root/stem lexicon; like IP, they encapsulate grammatical elements in rules; like WP, grammatical meaning is associated with word-sized units not with individual formatives.
 - ❖ WP models adopt a more utilitarian or agnostic perspective, and recognize whatever units are most stable and informative.

The role of units

- ❖ Unit-based classifications raise a number of general questions:
 - ❖ What criteria are appropriate for evaluating claims about units?
 - ❖ Is there a principled reason to expect a single unit type to play the same role in languages with different grammatical systems?
 - ❖ Even if it is possible to argue for the primacy of one particular unit type, can we offer any grounded explanation for this?
 - ❖ Why should contrasts be encapsulated in persistent units, and why should units play a central role in analyses of the patterns and regularities exhibited by the form variation of a language?

Three conceptions of units

1. **Absolute:** There are principles (often based on notions of uniformity or economy) that privilege a particular unit.
2. **Utilitarian:** The best unit represents the best compromise between properties that are useful for morphological analysis.
3. **Agnostic:** Units are a descriptive idealization, corresponding to sequences of the speech stream that reflect statistical patterns.

The search for “scientific compactness”

Models that recognize minimum recurrent units assume that these units can be assigned **context-independent meanings**, and that separate principles determine (paradigmatic and syntagmatic) distribution:

*It may be worth noticing ... that our traditional grammars fall short of scientific compactness by dealing with an identical feature over and over again as it occurs in different paradigmatic types. Thus, **in a Latin grammar, we find the nominative-singular sign -s noted separately for each of the types** amīcus ‘friend’, lapis ‘stone’, dux ‘leader’, tussis ‘cough’, manus ‘hand’, faciēs ‘face’, **when, of course, it should be noted only once, with a full statement as to where it is and where it is not used.***

(Bloomfield 1933: 238)



Leonard Bloomfield
(*Language* 1933)

Interpretive economy and indeterminacy

- ❖ A description achieves “scientific compactness” to the extent that (i) “an identical element” is “noted only once”, and (ii) there is “a full statement as to where it is and where it is not used”.

Compactness creates a range of descriptive challenges:

1. What are the criteria for treating elements as ‘identical’?
2. Where multiple elements can be collapsed, how do we decide which are to be treated as occurrences of “an identical feature”?
3. If the interpretation of an element is influenced by oppositions within a system, how do we encapsulate those oppositions in a context-independent meaning associated with the element?

Declensional -s in Latin

The distribution of -s varies even across the paradigms of the items that Bloomfield cites:

	Sg	Plu	Sg	Plu	Sg	Plu
Nom	amīcu s	amīcī	manu s	manū s	faciē s	faciēs
Gen	amīcī	amīcōrum	manū s	manuum	faciēī	faciērum
Dat	amīcō	amīcī s	manuī	manibus s	faciēī	faciēbus s
Acc	amīcum	amīcō s	manum	manū s	faciem	faciēs
Abl	amīcō	amīcī s	manū	manibus s	faciē	faciēbus s
Voc	amīce	amīcī	manu s	manū s	faciē s	faciēs
	'friend' (II)		'hand' (IV)		'face' (V)	

The cost of economy

- ❖ There is a fundamental trade-off between the economy achieved by identifying occurrences of -s **across** declensions and the economy achieved by identifying occurrences of -s **within** declensions.
- ❖ Treating the -s in nominative singular *amīcus* as the same marker as the -s in nominative singular *manus* combines two declension-specific markers into a general nominative singular marker -s.
- ❖ Yet this entails a less economical description of the paradigm of *manus*. The -s in nominative singular *manus* cannot be identical to the -s in vocative singular *manus* and identical to the -s in nominative singular *amīcus*, since *amīcus* contrasts with vocative singular *amīce*.

Declensional *-n* in German

Parallel trade-off arise in languages with much simpler morphotactics:

Gender	Neut	Fem	Masc	Masc	Masc
Nom Sg	Land	Frau	Staat	Name	Prinz
Gen Sg	Land(e)s	Frau	Staat(e)s	Namens	Prinzen
Dat / Acc Sg	Land	Frau	Staat	Namen	Prinzen
Nom / Acc / Dat Pl	Länder	Frauen	Staaten	Namen	Prinzen
Dat Pl	Ländern	Frauen	Staaten	Namen	Prinzen
	'country'	'woman'	'state'	name'	'prince'

Declensional trade-offs in German

- ❖ Classifying multiple occurrences of *-n* as ‘identical features’ along one dimension of analysis again entails additional distinctions along another.
- ❖ Treating the *-n* in the plurals *Prinzen* and *Staaten* as a common plural marker distinguishes the *-n* in plural *Prinzen* from the *-n* in the singular forms of PRINZ.
- ❖ Collapsing the *-n* in the two singular forms *Prinzen* into a common ‘non-nominative’ marker distinguishes them from the *-n* in singular *Namen*, which expresses the accusative but contrasts with genitive singular *Namens*.
- ❖ Even identifying elements with parallel distributions incurs a cost. Although *-n* marks the plural forms of feminine FRAU and masculine STAAT, it is productive in the feminine nouns and highly restricted in ‘mixed’ masculine nouns.

Exponence or discrimination?

- ❖ Similar challenges can also arise in identifying ‘identical elements’ within a single inflectional paradigm.
- ❖ It is common for inflectional systems to ‘reuse’ markers to discriminate forms at different places in the system.
- ❖ It may be possible to generalize over forms that contain a marker and characterize their common properties.
- ❖ But it is often more difficult to determine a discrete set of properties that can be assigned to the ‘entry’ of a marker.

Plural *-t* in Georgian

Future indicative paradigm of K'VLA 'kill' (Tschenkeli 1958: §31)

	1Sg	1Plu	2Sg	2Plu	3
1Sg	—	—	mogk'lav	mogk'lav t	movk'lav
1Plu	—	—	mogk'lav t	mogk'lav t	movk'lav t
2Sg	momk'lav	mogk'lav	—	—	mok'lav
2Plu	momk'lav t	mogk'lav t	—	—	mok'lav t
3Sg	momk'lavs	mogvk'lavs	mogk'lavs	mogk'lav t	mok'lavs
3Plu	momk'laven	mogvk'laven	mogk'laven	mogk'laven	mok'laven

How many *-ts* in Georgian?

- ❖ **3:** a 1pl subject marker, a 2pl subject marker, and a 2pl object marker
- ❖ **2(a):** a general 1pl/2pl subject marker, and a 2pl object marker
- ❖ **2(b):** a general 2pl subject/object marker, and a 1pl subject marker.
- ❖ Collapsing the subject markers excludes the 2pl object marker, while collapsing 2pl markers excludes the 1pl subject marker.
- ❖ Hence there is no single nondisjunctive analysis for *-t*, and no principled basis for choosing between alternatives 2(a) and 2(b).

Utilitarian compromise

*The word is a more stable and solid focus of grammatical relations than the component morpheme by itself. Put another way, **grammatical statements are abstractions, but they are more profitably abstracted from words as wholes** than from individual morphemes.*

*In many ways, and quite apart from any phonological markers, the word is a unique entity in grammar, and not just a stage in the progression 'from morpheme to utterance'. As a grammatical element **the word is unique in its relative fixity of internal morphemic structure, its focal status in relation to syntactically relevant categories, and, in inflected words, the stability of its paradigms.** All of these factors make it a strong basis for grammatical description, both morphological and syntactic. The assumption of a simple ascent in order of size from single morpheme to complete sentence, ignoring or blurring the distinction of morphological structuring and syntactic structuring, achieves its apparent simplicity at the cost of neglecting or distorting patent structural features of languages.*

(Robins 1959: 128/137)

Size, determinacy and frequency

- ❖ There is a correlation between the size and determinacy of a unit:
 - ❖ Larger expressions exhibit less indeterminacy. At the extremes, phones are sub-meaningful and utterances are determinate.
 - ❖ This relation is a matter of logic. A determinate whole can consist entirely of indeterminate parts. But an indeterminate whole cannot consist entirely of individually determinate parts.
- ❖ There is also a correlation between the size and frequency of a unit:
 - ❖ Again as a matter of logic, the larger a unit, the fewer instances there will be in a corpus or a stretch of the speech stream.
 - ❖ Frequency will influence the morphological informativity of units. Utterances are too sparse and exhibit too much individual variation to be of predictive value. Phones are too frequent.
- ❖ There is also claimed to be a correlation between unit size and stability.

Representational agnosticism

*Should we assume that analogy is simply another name for a set of rules which the speaker internalizes? Paul seem to reject this possibility mainly because **any set of rules would operate in terms of abstractions to which he is not ready to attribute any validity**. To say that cliffs is formed by adding a plural marker {s} to {cliff} would mean for Paul to give to {s} the same reality as to {cliff}, but for him one ({cliff}) is 'real', the other ({s}) is an abstraction since it never occurs as a free form.*

*It is worth noticing that **the proportion is a neutral form of notation**, i.e. it may be interpreted in cognitive or structural terms and may or may not be reformulated in terms of morphological or morphophonemic rules. At the same time. it also offered an algorithm for **a structurally based form of morphological segmentation, without making any claims about the segments in question**. (Morpurgo Davies 1998: 257/258)*