

The role and nature of series in lexical morphology

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Introduction

- In an abstractive approach to morphology, word-form is basic
- Words function as parts of larger networks the prototypes of which are inflectional paradigms

A consequence of permitting words to be contrasted with words is the possibility of discovering morphological organization in the system of relations between words (Ackerman et al. 2016:137)

Goals of morphology

- ▶ Discover the system of relations between word-forms taking into account not only their form inventories but also the association they have with paradigm cells (various declensions, conjugations, etc.)
- ▶ Predict the set of all word-forms a lexeme has on the basis of implications existing between surface (word)-forms (Paradigm Cell Filling Problem) (Bonami & Beniamine 2016, among others)

Introduction

	Estonian 1st declension (partial) - Quantitative type			
Grade	SG	PL	SG	PL
NOM	kool	koolid	kukk	kuked
GEN	kooli	koolide	kuke	'kukkede
PART	kooli	koolisid	'kukke	'kukkesid
Stem		koole		'kukki
Short	kooli		'kukke	
ILL	koolisse	'koolidesse	kukesse	'kukkedesse
INESS	koolis	'koolides	kukes	'kukkedes
ELAT	koolist	'koolidest	kukest	'kukkedest
ALL	koolile	'koolidele	kukele	'kukkedele
ADESS	koolil	'koolidel	kukel	'kukkedel
ABL	koolilt	'koolidelt	kukelt	'kukkedelt
TRSLAT	kooliks	'koolidelsk	kukeks	'kukkedeks
TERM	koolini	'koolideni	kukeni	'kukkedeni
ESS	koolina	'koolidena	kukena	'kukkedena
ABESS	koolita	'koolideta	kuketa	'kukkedeta
COM	kooliga	'koolidega	kukega	'kukkedega
	school'		'rooster'	

Introduction



Implicational structure in the 1st declension in Estonian
Blevins (2006: 551)

- In an abstractive model word components such as morphs, stems, etc. are abstractions over forms and not ‘building blocks’ from which the forms are constructed (Blevins 2006: 536)
- A lexeme is an abstract unit correlated with a set of word-forms sharing the same (category and) lexical content (Matthews 1974)

Introduction

- The discovering of morphological organization in inflectional morphology is based on **internal evidence**
- Clues are given by recurrent similarities vs. differences between phonological forms only, since
 - these forms are all correlated with the same lexeme and thereby share the same lexical content
 - the morphosyntactic content is not associated with the word-forms themselves but with the cells of the paradigm I (Carstairs 1987) or abstract paradigm, inasmuch as the bundles of morphosyntactic features give us the dimensions according to which the cells of paradigm I are distinguished (the same form may be associated with different morphosyntactic contents and vice versa).

The key assumptions of an abstractive approach are that exemplary paradigms and principal part inventories contain word forms, and that grammatically distinctive patterns **are resident in these actual forms** (Blevins 2006: 544)

Introduction

- ▶ Actual forms provide us with all the necessary and sufficient conditions to discover the grammatically distinctive patterns embodied in paradigms
- ▶ No need to take into account forms outside the paradigm in question (= internality)

Introduction

- How can we extend the abstractive approach to derivational morphology? What does this imply?

One cannot in general characterize the derivational paradigm of an item by defining a set of abstract feature bundles that are subsequently interpreted by spell-out rules (Blevins 2006:540)

► No trivial transposition

I would like to argue that

- The empirical background from which derivational regularities obtain is derivational series
- The organization of derivational series is based on **external evidence** instead of internal evidence
- This is tied to inherent properties of derivational series
- Two regular varieties of derivational series, plus an optional one, can be distinguished, which exhibit distinct properties

Derivational series I

- In a first approximation, a derivational series is a set of lexemes analogically formed on the same pattern (Hathout 2011)
- Derivational series reflect the entrenchment of derivational patterns in the existing lexicon
- Series and sub-series of word-forms / lexemes play a crucial role in the selection of morphophonological stems in derivation
- Names of status ending in *-at* in French illustrates this point.
- The presentation capitalizes on Plénat & Roché (2014)
 - (I) *vizir* ‘vizier’ / *vizir-at* ‘status of vizier’, *marquis* ‘vizier’ / *marquis-at* ‘status of marquis’, *maréchal* ‘marshal’ / *maréchal-at* ‘status of marshal’, *voïvode* ‘voivode’ / *voïvod-at* ‘status of voivode’, etc.

Derivational series I

- For lexemes ending in [ã] two possibilities are observed

(2) Xã / Xãta

parent ‘parent’ / *parent-at* ‘status of parent’, *régent* ‘regent’ / *régent-at* ‘status of regent’, *assistant* ‘assistant’ / *assistant-at* ‘status of assistant’

(3) Xã / Xana

sultan ‘sultan’ / *sultan-at* ‘status of sultan’, *khan* ‘khan’ / *khan-at* ‘status of khan’, *artisan* ‘craftsman’ / *artisan-at* ‘craftsmanship’

- If the base N follows pattern (2), its family generally contains units complying with patterns of type (4), where a /t/ that is not pronounced when the noun is used in isolation obligatorily appears at the end of the stem of the derived noun

(4) Xã / XãtV

parent ‘parent’ // *parentèle* ‘relatives’ / *parentaille* ‘the whole relatives’,
parenté ‘kinship’ / *apparenter* ‘to relate’
régent ‘regent’ // *régenter* ‘to regulate’ / *régiteur* ‘regulator’

Derivational series I

- In addition to its occurrence in pattern (2), *assistant* much more frequently occurs in pattern (3), as shown in (5)

(5) Xā / Xana (innovative pattern)

assistant ‘assistant’ / *assistan-at* ‘status of assistant’, *figurant* ‘extra, walk-on’ / *figuran-at* ‘status of extra’, *postulant* ‘applicant’ / *postulan-at* ‘status of applicant’, etc.

- Number of hits in Google (09.2016)
 - *assistant* / *assistantat* = 120
 - *assistant* / *assistanat* = 742,000
- Reasons why *assistant* shifted for pattern (3) (and became a leading-word for this pattern)
 - nouns in *-ant* can hardly be used as a base for other complex lexemes, contrary to *parent*, *régent*.
 - speakers tend to avoid deriving sequence [Xtāta] because of strong dissimilatory constraints in French (Plénat 2009)
 - some nouns modeled on pattern (4) are very frequent

Derivational series I

- French derived nouns of status illustrate how a local conditioning makes a new sub-pattern emerge and become entrenched in the language because it involves highly frequent lexemes
 - This (sub-)pattern constitutes a morphological (sub-)series, that is a set of lexemes showing a recurrent correlation between their form, their meaning and their syntactic category
 - The innovative sub-pattern is founded on external evidence because its activation does not follow from the mere inspection of the forms included in the series
 - It seems to require implications such as (6), where the forms involved in the facilitating pattern do not belong to the derivational series in question and to that extent are external to it
- (6) For a given N, pattern (2) is highly facilitated if it satisfies pattern (4)

Derivational series 2

- In the derivational series examined so far (Type I), the meaning correlated with the exponent was kept constant while the latter could be slightly altered

Form	Meaning	Syntactics	Examples
X / Xa	N'/status of N'	N / N	vizir / vizirat
Xā / Xāta	N'/status of N'	N / N	régent / régentat
Xā / ana	N'/status of N'	N / N	figurant / figuratanat

- In other derivational series the form is kept constant while the meaning changes (Type 2)
- Examples (7) illustrate the case at hand

- (7) a. *Ces mesures facilitent le **logement** des demandeurs d'asile.*
‘These measures facilitate the housing of asylum-seekers’
- b. *Comment lutter contre le froid dans son **logement**?*
‘How to fight against cold in your housing?’

Derivational series 2

- Occurrences of *logement* in (7) belong to two distinct derivational series illustrated in (8) and (9) respectively
- The corresponding derivational patterns are given in Table I

- (8) *loger* ‘to house’ / *logement* ‘action of housing’, *déplacer* ‘to move’ / *déplacement* ‘action of moving’, *percer* ‘to drill’ / *percement* ‘action of drilling’, etc.
- (9) *loger* ‘to house’ / *logement* ‘place where X is housed’, *cantonner* ‘to quarter, to confine’ / *cantonnement* ‘cantonment’, *ranger* ‘to store’ / *rangement* ‘place of storing’, etc.

Table 1. Type 2 derivational series

Form	Meaning	Syntactics	Examples
X / Xmā	V'/action of V'	V / N	(7a)
X / Xmā	V'/place where...'	V / N	(7b)

- According to standard tests (Godard & Jayez 1993, Huyghe 2011), *logement* denotes an event in (7a) and a functional artifact with a locative use in (7b)

Derivational series 2

- The fact that the two occurrences of *logement* are not members of the same derivational series in (7a) and (7b) cannot be deduced from the inspection of the forms themselves, contrary to what happens in inflection
- This deduction must be based on external evidence
- In the present case, it follows from the fact that the kinds of entity denoted by the words *logement* correspond to two different semantic variables in the construction headed by their base-verb LOGER

(10) a. NP0 loger NPI PP[dans NP2]

b. **house**(x,y,e¹) \wedge CAUSE(e¹,s²) \wedge INESS(y,z,s²)

c. NP0 = x = AGT, NPI = y = PAT, FIG, NP2 = z = GRND

- Following Gärdenfors (2000), we could say that LOGEMENT¹ categorizes an event concept, whereas LOGEMENT² categorizes an entity which is both an object and a place (dot object, Pustejovsky 1995)

(11) a. CAT(logement¹) = $\lambda e. \text{house}(x,y,e)$ \wedge CAUSE(e¹,s²) \wedge INESS(y,z,s²)

b. CAT(logement²) = $\lambda z. \text{house}(x,y,e)$ \wedge CAUSE(e¹,s²) \wedge INESS(y,z,s²)

Derivational series 2

- In (12) the derived nouns *étalement* are correlated with verbal lexemes that head two distinct constructions and express thereby an eventive or a ‘means’ ('effector' in LaPolla & van Valin 1997, ‘satisfier’ in Fradin 2015) meaning
- These constructions are schematically given in (13) and (14) and illustrated in (15)(next slide)

- (12) a. *Parmi les différentes étapes de construction, celle de l'**étalement**¹ fait partie des plus essentielles.* (Web)
‘Among the various construction phases, underpinning is one of the most important’
- b. *Réaliser le montage de l'**étalement**² (...) d'un ouvrage d'art.* (Web)
‘Mounting the shoring system (...) of a work of art’

- (13) a. X[AGT] étayer¹ Y[PAT] (_{PP}[avec Z[MNS]])
b. **underpin**(x,y,e¹) \wedge CAUSE(e¹,s²) \wedge **stronger**(y,s²)

- (14) a. X[MNS] étayer² Y[PAT]
b. **underpin**(x,y,e¹) \wedge CAUSE(e¹,s²) \wedge **stronger**(y,s²)

Derivational series 2

- (15) a. *Il faut étayer¹ votre balcon sans perdre de temps.* (Web)
‘You must underpin your balcony without delay’
- b. *Les quatre colonnes, qui étayent² le toit du sanctuaire de Thoutmosis III, sont cannelées.* (Web)
‘The four columns underpinning the roof of Thoutmosis III’s sanctuary are fluted’
- *Etaiement¹* belongs to derivational series (16), whereas *étalement²* belongs to derivational series (17)

(16) *étayer¹* ‘to underpin’ / *étalement¹* ‘underpinning’, *renforcer¹* ‘to reinforce’ / *renforcement¹* ‘action of reinforcing’, *rapiécer¹* ‘to patch’ / *rapiètement¹* ‘action of patching’, etc.

(17) *renforcer²* ‘to reinforce’ / *renforcement²* ‘what reinforces’, *rapiécer²* ‘to patch’ / *rapiètement²* ‘patch’, *affleurer²* ‘to show on the surface’ / *affleurement²* ‘what shows on the surface’, etc .

- But as before, it is impossible to predict that in (12a) *étalement* is linked with derivational series (16) and in (12b) with derivational series (17) if one only relies on the word’s form

Derivational series 2

- Inspecting the forms gives us no clue because the relevant clues are external: they are provided to us by the constructions of the verbal lexeme the derived noun is correlated with
 - These constructions are syntactically projected in actual discourses and texts and constitute the material out of which the derivational series, and therefore the interpretation of the derived lexemes, can be predicted
 - For instance, from their context of occurrence in (18)-(19), the underlined nominalizations (NZNs) are predicted to have an eventive meaning in (18), and a means or effector meaning in (19)

(18) *ce mode de réparation vaut mieux que des rapiéçages*
‘this way of repairing is better than repeated patchings’
la fréquence des rechapages
‘the frequency of remouldings’

(19) *une route molle avec des rapiéçages de pierre*
‘a soft road with patches of stone’
le décapage des rechapages
‘the scouring of remoulds’

Derivational series 2

Two consequences follow from this viewpoint

- ▶ Procedures taking advantage of the distribution of words on large corpora or electronic resources to discriminate the semantic proximity they have should be of great interest for the issues investigated here (Onnis et al. 2008, Baroni et al. 2013)
- ▶ The association of new meanings with morphological patterns is a discourse rooted process (Fradin 2017)

Derivational series 2

- For a large part, new meaning comes from outside morphology
- Existing derivational patterns keep their form but adapt their semantics since, by definition, meaning is not form-bound as metonymy, metaphor, etc., recall us
- Derivation in *-iser* provides us with an example
- Pattern: A, X, A' ~ V, Xis, 'make Y become A'

(20) *italien* 'Italian' / *italianiser* 'make Y become Italian', *collectif* 'collective' / *collectiviser* 'organize Y on a collective basis', *idéal* 'ideal' / *idéaliser* 'regard Y as ideal', *digital* 'digital' / *digitaliser* 'convert Y into digital form'

(21) a. *droitiser* '*make Y become right' / *gauchiser* '*make Y become clumsy'
b. A, /drwat/, 'droit' ~ V, /drwatis/, 'make Y become right'

(22) a. *droitiser* 'make Y express rightist opinions' / *gauchiser*...
b. A, /drwat/, 'à_droite' ~ V, /drwatis/, 'make Y express rightist opinions'
c. Un vent de soutien très à droite souffle pour Jean-Pierre Pernaut.

► New derivational series, new derivational pattern

Derivational series 3

- Let us now examine the unusual case of derivational series that share the traits of derivational series I
 - the derived lexemes are correlated with the same base lexeme,
 - they have the same type of interpretation,
 - nevertheless their exponent are different
- Series of this type exist in French and are illustrated by nominalizations in *-age* and *-ment*

Table 2. Type 3 derivational series

Form	Meaning	Syntactics	Examples
X / Xmã	V'/action of V'	V / N	(20)
X / Xaʒ	V'/action of V'	V / N	(21)

- (20) *tronçonner* ‘to saw up’ / *tronçonnement* ‘sawing up’, *percer* ‘to bore’ / *percement* ‘boring’, *ravaler* ‘to restore’ / *ravalement* ‘renovation’, etc.
- (21) *tronçonner* ‘to saw up’ / *tronçonnage* ‘sawing up’, *percer* ‘to bore’ / *perçage* ‘boring’, *ravaler* ‘to restore’ / *ravalage* ‘renovation’, etc.

Derivational series 3

- *Tronçonnage / tronçonnement* both denote the action of sawing or cutting in examples (22)-(23) because the semantic variable they distinguish is the event variable of verb TRONÇONNER

- (22) a. *Le tronçonnage des (arbres | grumes | poutres)...*
‘the cutting of (trunks | logs | beams)’
- b. *Le tronçonnage (de la pierre naturelle | de la glace | des métaux)...*
‘the cutting of (natural stone | ice | metals)’
- c. *Le tronçonnage (des voies ferrées | des rivières | des fichiers)...*
‘the cutting of (railways | rivers | files)’
- d. *Le tronçonnage (des programmes télé | des dialogues | des données)...*
‘the cutting of (TV programs | dialogues | data)’
- e. *Le tronçonnage (de la société française | des compétences | des résultats scientifiques)...*
‘the cutting of (French society | competences | scientific results)’

Derivational series 3

- (23) a. *Le tronçonnement* des (arbres | grumes | branches | poutres)...
‘the cutting of (trunks | logs | branches | beams)’
- b. *Le tronçonnement* des organes de reproduction végétale...
‘the cutting of the organs of vegetal reproduction’
- c. *Le tronçonnement* (des voies ferrées | des rues | des rivières |
des fichiers | des canalisations | des cortèges | des parcelles)...
‘the cutting of (railways | streets | rivers | files | canalizations |
marches | land plots)’
- d. *Le tronçonnement* (des dialogues | des données | des activités | des
matchs)
‘the cutting of (dialogues | data | activities | matches)’
- e. *Le tronçonnement* (des compétences | des résultats | des informations |
des raisonnements | des actes de reproduction biologique)...
‘the cutting of competences | results | information | reasoning |
biological reproduction acts)...’

- In such a situation, one would expect the complement of these derived nouns to overlap largely if not completely
- This is not what we observe however

Derivational series 3

- Complements denoting either **concrete, trunk-like entities or concrete hard material** are more numerous with *tronçonnage*
 - Complements denoting **object or event stretching in time or abstract entities** are more numerous with *tronçonnement*
 - For **concrete object stretching in space** (c), the complements of *tronçonnage* are almost a subset of those of *tronçonnement*
 - *outil(s) de tronçonnage*: 34,000 Google hits (09.2016)
outil(s) de tronçonnement: zero hit
 - *le tronçonnage des arbres*: 2,160 Google hits
le tronçonnement des arbres: 2 hits only
 - No attestation of *le tronçonnage (des cortèges | des actes de reproduction | de la théologie)*,
le tronçonnement de la pierre
- Even though the lexicon, and in the present case the unicity of the base, guarantees that the derived lexemes belong to the same derivational series and have an identical conceptual meaning, variation exists and is introduced by the discourse

Derivational series 3

- In all examples presented above, the basic conceptual meaning is the same: ‘l’action de tronçonner produit un (des) tronçon(s)’ ('the action of cutting / sewing yields a section')
- What varies is
 - the nature of the patient and its sortal properties,
 - the means of cutting,
 - the concrete vs. abstract nature of the action
- These distinctions are difficult to perceive for French speakers but become readily visible when the examples are translated into other languages
- The variation in question may widen and give rise to a lexicalized semantic differentiation in case it became institutionalized (Hohenhaus 2005) (semantic niches)
 - Lexicon = stability
 - Discourse = variationMorphological derivation interacts with both

Conclusion

- Derivational series play a crucial role in giving an empirical basis to derivational patterns
- Evidences founding a derivational series lie outside the latter, in the constructions lexemes or words occur in, and in the networks formed by their distributions
- This makes derivational series readily different from inflectional paradigms
- To that extent, linguists should refrain from using the term “derivational paradigm” without qualification
- Derivational series play a role in
 - establishing new morphophonological bases, stems
 - making appear derivational patterns endowed with new meanings
- The association of derived lexemes with new meanings is generally discourse-rooted and can rarely be attributed to morphology itself
- Morphology keeps the form stable and takes advantage of the elasticity of meaning

**THANKS
FOR YOUR
ATTENTION**

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