Chapter

In memoriam Kaido Torop

PARADIGM FUNCTION MORPHOLOGY APPLIED TO THE SOUTHERN FINNIC DIALECT NETWORK

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ABSTRACT

This chapter provides a survey of competing taxonomies for Finnic inflectional systems, based on the combination of *Paradigm Function Morphology* and *Templatic & Particle Phonology*. We apply our syncretic model to diasystemic analysis for Finnish and Estonian dialects, with several case studies (Carelian Isthmus Finnish, Kihnu Estonian, etc.), yet also considering the standard varieties for these two reference languages. The Chapter points mainly at two relevant questions, both for Finno-Ugrian linguistics and general typology in morphology and

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phonology: what does the comparison of Finnic Inflectional Taxonomies (IT) teach us about the typology of inflection systems in the World's languages? How can (or should) theoretical challenges on morphological complexity be addressed with different models from theoretical linguistics, when handling dialect variation? We suggest the apparent complexity of the Finnic IT can be accounted for by parsimonious sets of MPR (Morphophonological Rules) and diasystemic implicational graphs of stem variation (RSS: Rules of Stem Selection) and exponent affixation or fusion (RE: Rules of Exponents). This reductionism turns *complexity* into its dialectic counterpart: *simplexity*, which is required for any endeavor to unravel (apparently) overwhelming intricacy in linguistic systems. Once a *simplexity model* has been contrived and designed to address morphological overwriting in a language or a linguistic domain, even the most intricate dialect phenomenology can be easily handled.

Keywords: Finnic, Finnish, Estonian, inflectional morphology, phonology, diasystem

ABREVIATIONS

(gentle reminder):

ablat	ablative
abes	abessive
ades	adessive
allat	allative
comtv	comitative
elat	elative
ess	essive
gen	genitive
ines	inessive
ill	illative
MPR	Morphophonological Rules
nom	nominative
ptv	partitive
IC	Inflectional Class
ICT	Inflectional Class Taxonomy

ICC	Inflectional Class Construction
RE	Rules of Exponence
RSC	Rules of Stem Choice
SE	Standard Estonian
SF	Standard Finnish
VH	Vowel Harmony

Symbols

{ } default (or *unmarked* category);
⌐ excluding, all but…

1. INTRODUCTION: METHODS AND GOALS

1.1. Methods

In this article I will attempt to survey the structural interplay between typological parameters of inflectional morphology in various areas of the Finnic diasystem, using PFM (Paradigm Function Morphology: Stump 2001, 2015) as a heuristic model on the one hand, and a templatic CVCV framework (Scheer 2005, 2011, 2012, 2015) for the description of MPR (Morpho-Phonological Rules) on the other hand. To make my main point clear from the outset: with Southern Finnic, we will be dealing with the archetype of what the present volume is aiming at: *morphophonological rules embedded in grammar* –to put it in five words only. Few languages in the world show intricacy of MPR and RSC (Rules of Stem Choice) to such an extent. In fact, languages 'standardly' known as *fusional* (French or Gallo-Italic dialects in the romance area, Gur languages in the Niger-Congo stock, etc.) hardly match the level of morpho-phonological fusion observed in Estonian and its dialect network –except perhaps Livonian, another Finnic language, spoken in the Southernmost area of the Finnic domain. Here, MPR have ruled for centuries, before they eventually bowed before the structural obviousness of RSC (Rules of Stem Choice), out of deletion and compensatory lengthening (resulting in Q3 or third degree of quantity, as we will see in section 3).

There can hardly be an array of RSC in synchrony without a MPR ‘heritage’ in diachrony, licensing the forms available today in the grammars of Estonian dialects and Livonian. This is ‘good news,’ for the sake of both General Morphology and General Phonology (which are more twin brothers or sisters than foes plotting on their own to make new patterns emerging in languages, through space and time). Therefore, as always in grammar, what is first needed is a clear-cut Inflectional Class Taxonomy (ICT). I will implement taxonomic proposals for inflectional classes as suggested in Viks (1992 [nd], 2000a–b, 2001, 2003), taking also into account proposals from Blevins (2007), Erelt et al. (1993), Viitso (2003), and Baerman (2014) for the Võro dialect. Moreover, the intricate relation of inflection patterns with lexical morphology (see Kaasik 2015 for Standard Estonian) will be considered to some extent.

1.2. Goals

This survey of competing taxonomies for Finnic inflectional systems will therefore point mainly at two relevant questions, both for Finno-Ugrian linguistics and general typology:

1. What does the comparison of Finnic inflectional taxonomies teach us about the typology of inflection systems in the World’s languages?
2. How can (or should) theoretical challenges on morphological complexity be addressed with different models from theoretical linguistics (Baerman et al. 2015, Léonard 2014)?

1.3. Theoretical Scope

PFM (Paradigm Function Morphology) is a theoretical model from the field of Word and Paradigms in morphology, which advocates a threefold modular division between Rules of Stem Choice, accounting for the formation of stems and stem alternations or suppletion on the one hand, as opposed to Rules of Exponence (RE), accounting for affixal concatenation, on the other hand. Sets of Morpho-Phonological Rules (MPR), indeed, come as a third component, and work as a separate, autonomous, yet organically integrated module (Stump 2001).

This standpoint applies broadly to diachronic drifts: for instance, in North-Western Finnic languages (Finnish and its dialect network), morphophonological rules (MPR) are still overt and straightforwardly visible. They account for many sets of alternating stems on the basis of syllabic structure out of Coda Licensing (Kaye 1990), triggered by (former) inflectional suffixation (i.e., suffixal concatenation). Southern Finnic languages such as Estonian and Livonian have integrated the MPR module into the lexical component, through Rules of Stem Selection, due to a strong trend to suffixal deletion or merging –or fusion of the morphological exponents. Instead, Rules of Exponence of more or less heavy resilient suffixes still strongly undergo Morphophonological Rules in adjusting the juncture of stems selected in the Rules of Stem Choice component in the lexicon. Moreover, if the initial trigger was indeed Suffixal Coda licensing, in Southern and Eastern Finnic, this process has shifted cyclically to a suffixal Coda Government of the thematic onset, as below, for SF (Standard Finnish) as opposed to the Southern Ostrobotnian dialect (Southwestern Finland) in Figure 1, for the lexical item *joki* ‘river’ in Finnish. In short, *licensing* processes substantially enrich or modify the inner structure of segments, through lateral interaction (from the right to the left of the word), whereas *government* processes impoverish or delete (through government proper) the inner structure of segments, i.e., prosodic slots in the word template.

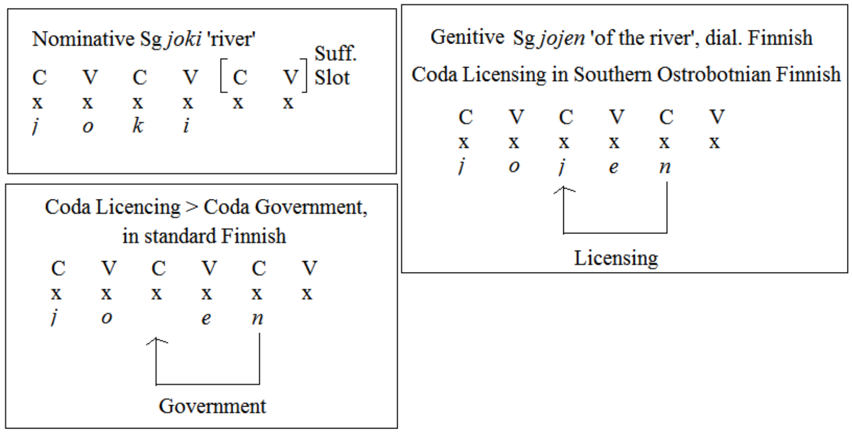

Figure 1. CVCV/Government proper and Coda licensing Model for SF nominal inflection (IC 8*).[1]

In terms of intersegmental processes, or segmental interaction patterns, *licensing* processes enrich the feature matrix of segments (here, through approximation of the intervocalic velar unvoiced stop by the suffixal coda), whereas *government* impoverishes or deletes feature matrices or segments[2].

I will now attempt to describe parsimonious sets of Rules of Stem Choice (henceforth, RSC) combining with Rules of Exponence (henceforth, RE) and Morphophonological Rules (henceforth, MPR).

How do the units generated in these three components of the inflectional system select and/or combine the various units available in the verbal template? Standard 'received' or 'reference' descriptions agree with complex sets of Inflectional Classes (henceforth, IC), highly MPR – driven for both Standard Finnish and Estonian.

As Ülle Viks [nd] points out, Inflectional Classes are but constructs designed by linguists, out of taxonomic traits. Their total number can vary from a handful to several hundred for the same language, according to 'the art of lumping or splitting' or 'the art of (skipping) details.'

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[1] *IC 8** reads as 'Inflectional Class 8: additional subclass (*)', according to ICT defined by the *Nykysuomen Sanakirja* (*Reference dictionary for Standard Finnish*), edited by Sadeniemi and Vesikansa *et al.* [1951] 1980.

[2] See http://sites.unice.fr/scheer/ for an abundant bibliography on this issue.

Therefore, the main issue in framing an ICT lays in the purpose: either *practical*, as with the compilation of a dictionary and didactic textbooks, or *theoretical*, from the standpoint of General Morphology. This chapter focuses more on the latter than the former.

I will revisit these classifications, or ICT proposals, from the standpoint of taxonomic criteria retrievable from a PFM approach.

In other words, I will address the following issues: how can Finnic inflectional class taxonomy be accounted for by specific RSC combined with RE? With what effects and consequences do criteria combine in the making up of this taxonomy? How do these patterns contribute to a general theory of Inflectional Class Construction (ICC)? What are the building bricks making up these IC? How far are they predictable and regular? How do IC and morphosyntactic series (grammatical or core cases and number for nouns and adjectives, person and number for verbs) interact? How do these interactions rank hierarchically in a general framework?

These are but a few of the questions we will try to address in this chapter, using PFM as a taxonomic compass, and CVCV phonology as adobe bricks to build up this modest ICT house. Any house needs a roof, and in this case, the roof is provided by the diasystemic approach (see implicational graph, Figure 2 below), in order to test the robustness of the whole construction.

2. THE PFM (*PARADIGM FUNCTION MORPHOLOGY*) FRAMEWORK APPLIED TO FINNIC DECLENSION

In order to illustrate PFM representations, I will use a lexeme from Inflectional Class 10* (IC 10*, according to NS: XII-XVI) in Standard Finnish (SF) –IC ÕS 17 in Standard Estonian[3]): Finnish nominative singular *pata* / genitive singular *padan*, Estonian nom. sg. *pada* / gen. sg. *paja* ‘cauldron, pot.’

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[3] ÕS stands for *Õigekeelsussõnaraamat*, i.e., the reference dictionary of Standard Estonian, published in (2013).

Analysis will focus on SF paradigms for this lexeme, which shows low entropy, but also slight qualitative gradation of the fortis/lenis segmental (not prosodic) type:

Block I:

1. RSC_{10*}: Stem X_1^S (⟨PATA, σ {Case: {nom, ptv, Ill, ess}, Number: {sg}⟩) ⇔ < *pata*, σ >
2. RSC_{10*}: Stem X_2^S (⟨PATA, σ {Case ¬{ nom, acc}, Number: {pl}⟩) ⇔ < *pato*, σ >
3. RSC_{10*}: Stem X_3^W (⟨PATA, Case { }, Number: {sg}⟩) ⇔ < *pada*, σ >
4. RSC_{10*}: Stem X_4^W (⟨PATA, σ {Case { }, Number: {pl}⟩) ⇔ < *pado*, σ >

The set of rules above for SF declension reads as follows:

Block 1:

Rules of Stem Choice, for number and case agreement:

1. IF stem X_1^S

Meaning *stem 1* (stem = X_1) undergoing a qualitative gradation alternation of the strong type, prosodic strength being conveyed by the S exponent (X_1^S)[4].

THEN a form such as X_1^S is expected, such as defined by a set of morphosyntactic and morphosemantic features for the abstract lexeme PATA: (⟨PATA, σ {Case: {nom, ptv, Ill, Ess}, Number: {singular}⟩). The corresponding realisation is therefore *pata*, as a structural, thematic chunk of the combinatoric for this lexical item. The *pata* stem is declared as a realisational form matching (symbol ⇔) the set of morphosyntactic and morphosemantic features below:

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[4] In rows (iii) and (iv), a^W exponent reads as a weak form of the stem (as in *pada*, *pado*).

⟨{Case: { nom, ptv, Ill, Ess}, Number: {singular}⟩

The next rule reads as follows, as far as the last descriptive component is concerned:

2. RSC$_{10*}$: Stem X_2^S (⟨PATA, σ {Case {ptv, ill, ess, comtv}, Number: {pl}⟩) ⇔ < *pato*, σ >

IF the stem *pato* occurs in the paradigmatic function tables (i.e., any matrix of inflectional data of a language *L*), then it will account for a subset of plural stem realisations for grammatical and semantic cases from the list {ptv, ill, ess, comtv}.

3. RSC$_{10*}$: Stem X_3^W (⟨PATA, { }⟩) ⇔ < *pada*, σ >

IF stem X_3^W is of the weak type, the allomorphic stem *pada* occurs, then it will necessarily combine with all categories for singular not included in the previous singular set (i) above. This stem can therefore be defined as the *default* combinatory unit for the residual taxonomic range of this inflectional class, for number *singular*.

The last row reads as follows:

4. IF the realizational stem *pado*, described as a MPR conditioned weak stem 3 (noted therefore X_4^W) occurs in the paradigmatic function tables, then it will count as the default paradigm function for all *plural* stem realizations not accounted for by RSC X_2^S (row *ii*)

Let us now turn to the block of Rules of Exponence, for denclensions in IC 10*for Standard Finnish:

Block II(a):

Rules of Exponence (RE), for singular agreement:

1. RE: X_{10*} σ {Case {nom}, Number{*sg*}} ⇒ X_1^S ⇔ < *pata* , σ >
2. RE: X_{10*} σ {Case {ptv}, Number{*sg*}} ⇒ $X_1^S \oplus a$ ⇔ < *pataa*, σ >

3. RE: X_{10*} σ {Case {ill}, Number{*sg*}} ⇒ X_1^{S}⊕*an* ⇔ < *pataan*, σ >
4. RE: X_{10*} σ {Case {ess}, Number{*sg*}} ⇒ X_1^{S}⊕*na* ⇔ < *patana*, σ >
5. RE: X_{10*} σ {Case {gen, acc}, Number{*sg*}} ⇒ X_3^{W}⊕*n* ⇔ < *padan*, σ >
6. RE: X_{10*} σ {Case {ines}, Number{*sg*}} ⇒ X_3^{W}⊕*ssa* ⇔ < *padassa*, σ >
7. RE: X_{10*} σ {Case {elat}, Number{*sg*}} ⇒ X_3^{W}⊕*sta* ⇔ < *padasta*, σ >
8. RE: X_{10*} σ {Case {ades}, Number{*sg*}} ⇒ X_3^{W}⊕*lla* ⇔ < *padalla*, σ >
9. RE: X_{10*} σ {Case {allat}, Number{*sg*}} ⇒ X_3^{W}⊕*lle* ⇔ < *padalle*, σ >
10. RE: X_{10*} σ {Case {ablat}, Number{*sg*}} ⇒ X_3^{W}⊕*lta* ⇔ < *padalta*, σ >
11. RE: X_{10*} σ {Case {abes}, Number{*sg*}} ⇒ X_3^{W}⊕*tta* ⇔ < *padatta*, σ >

NB: S = Strong grade; W = Weak grade, here used qualitatively instead of quantitatively (ex. Above RE(i) X_1^{S} ⇔ < *pata* > versus RE(v) X_3^{W}⊕*n* ⇔ < *padan* >, with obvious coda licensing). For Standard Estonian (SE), I'll use these abreviation only for quantitative gradation (Q1-3; Q = Quantity).

Block II(b):
Rules of Exponence (RE), for plural agreement:

1. RE: X_{10*} σ {Case {ptv}, Number{*pl*}} ⇒ X_2^{S}⊕*ja* ⇔ < *patoja*, σ >
2. RE: X_{10*} σ {Case {gen}, Number{*pl*}} ⇒ X_2^{S}⊕*jen* ⇔ < *patojen*, σ >
3. RE: X_{10*} σ {Case {ill}, Number{*pl*}} ⇒ X_2^{S}⊕*ihin* ⇔ < *patoihin*, σ >
4. RE: X_{10*} σ {Case {ess}, Number{*pl*}} ⇒ X_2^{S}⊕*ina* ⇔ < *patoina*, σ >

5. RE: X_{10*} σ {Case {cmtv}, Number{*pl*}} ⇒ X_2^{S}⊕*ineen* ⇔ < *patoineen*, σ >
6. RE: X_{10*} σ {Case {nom, acc}, Number{*pl*}} ⇒ X_3^{W}⊕*t* ⇔ < *padat*, σ >
7. RE: X_{10*} σ {Case {ines}, Number{ *pl* }} ⇒ X_4^{W}⊕*issa* ⇔ < *padoissa*, σ >
8. RE: X_{10*} σ {Case {elat}, Number{ *pl* }} ⇒ X_4^{W}⊕*ista* ⇔ < *padoista*, σ >
9. RE: X_{10*} σ {Case {ades}, Number{ *pl* }} ⇒ X_4^{W}⊕*illa* ⇔ < *padoilla*, σ >
10. RE: X_{10*} σ {Case {allat}, Number{ *pl* }} ⇒ X_4^{W}⊕*ille* ⇔ < *padoille*, σ >
11. RE: X_{10*} σ {Case {ablat}, Number{ *pl* }} ⇒ X_4^{W}⊕*ilta* ⇔ < *padoilta*, σ >
12. RE: X_{10*} σ {Case {abes}, Number{ *pl* }} ⇒ X_4^{W}⊕*itta* ⇔ < *padoitta*, σ >
13. RE: X_{10*} σ {Case {instr}, Number{*pl*}} ⇒ X_4^{W}⊕*in* ⇔ < *padoin*, σ >

Interestingly enough, the comitative and the instructive fall under the paradigmatic field of plural stems X_2^{S} and X_4^{W}, although they are both underspecified for number, so that empty brackets, expressing a *default* trait, apply to the corresponding forms Comitative *patoineen*, Instructive *padoin*, as described in representations (v) and (xiii) above.

Any reader used to the standard way of analysing Finnic morphology may wonder why exponents are presented as lumps (-*ja*, -*jen*, etc.), instead of elementary units: e.g., ptv pl: X_2^{S}⊕*ja* ⇔ < *patoja*>, gen pl: X_2^{S}⊕*jen* ⇔ < *patojen*>, ill pl: X_2^{S}⊕*ihin* ⇔ < *patoihin*>, ess pl: X_2^{S}⊕*ina* ⇔ < *patoina*>, cmtv pl: X_2^{S}⊕*ineen* ⇔ < *patoineen*>, instead of -*j*-*a*, -*j*-*en*, -*i*-*hVn*, *i*-*na*, -*i*-*ne*-*en*, with -*i*- for plural, -*a* as an allomorph for ptv, -*hVn* for illative, -*nA* for essive and -*ne*-*Vn* for cmtv + clitic.poss3. This 'lumping' representation of morphemes, instead of the traditional analytic procedure, is typical of Realisational Rules (RR). Because PFM is a declarative model, nothing would otherwise impede enumerating morphemes analytically uphill in the description, defining units one by one, in terms of SRE (Specific Rules of Exponence), as in (xiv-xvi). We have decided against this option here, preferring to apply RR, which better match the phonology/morphology interface, accounting for realisational outputs rather than morphemic inputs.

14. SRE_i: σ {Number{pl} ⇒ ⊕*i*}
15. SRE_j: σ {Case{cmtv} ⇒ ⊕*ne*}
16. SRE_k: σ {Clitic {poss} ⇒ ⊕*Vn*}

This chain being conflated into a row such as $(i)\^{}(ne)\^{}(Vn)^{\text{MPR 2}}$

NB: see (ii) below for a description of $^{\text{MPR 2}}$.

Nevertheless, lumping (realizational) chains of the Word and Process type (see Karlsson 1986, and especially Karlsson 1977, following Hockett 1954) better captures the concatenative processes than the traditional *Word & Paradigm* description.

Block III:
Major MorphoPhonological Rules (MPR) in SF:

To exemplify the third block, I suggest applying MPR at stem level and/or at the juncture with exponents:

17. A broad constraint of Vowel Harmony (*VowHarm* of the palatovelar type, i.e. α^{PAL}, strongly stem-driven):
    MPR 1 : $\sqrt{}$Nucleus$\{\alpha^{PAL} \subset \beta(/i, e/\{\ \})\} \Leftrightarrow {}_{Suff} < V_n >^{VowHarm}$
    Suggesting that a default subsystem of neutral vowels is embedded in the Palatal Harmony system, as /i,e/ may be lexically underspecified.

18. A progressive stem vowel assimilation for partitive and illative, or possessive 3rd person cliticization, typically interactive at RSC & RE levels):
    MPR 2 : $< V_j \# < V_k > > \Leftrightarrow < V_j < V_j > >\#$
19. A more specific vowel dissimilation through labialisation for low vowel stems, such as in IC 10*, also of the juncture type RSC & RE:
    MPR 3 : $< V_{Low,\ velar,\ \underline{illabial}} < V_i^{PL} > > \Leftrightarrow < V_{Low,\ velar,\ \underline{labial}} < V_i^{PL} >>$.

One might object that our RSC are somewhat far fetched or not relevant for a so called ”agglutinative” language such as SF: a mere lenition MPR on the *pata* stem, giving *pada* as an output, should be enough. Nevertheless, if this were the case, we would further need to explain how secundary weak stems, such as those found in South-Eastern Finnish (Savo) should be handled –the weak stems resulting from consonant dropping and further diphthongization of the consecutive long vowel: *pata+C* > *pada*- > pa_da- > *paa*- > *poa*- (> *pua*-, *pua'a*)[5], as opposed to *pata*-, *pato*- ‘strong’ stems. This leads us to the diasystemic ”roofing” component of this chapter. We argue that dialectical variation helps to conspicuously account for and test the complexity of formative rules in any language, especially to test such broad typological properties as ‘agglutinative’.

South-Eastern Finnish (e.g., the Eastern part of the Isthmus of Carelia)
RE: $X_{10*}\ \sigma\ \{\text{Case }\{\text{nom}\}, \text{Number}\{sg\}\} \Rightarrow X_1^{S} \Leftrightarrow < \underline{pata}, \sigma >$
RE: $X_{10*}\ \sigma\ \{\text{Case }\{\text{gen, acc}\}, \text{Number}\{sg\}\} \Rightarrow X_3^{W} \oplus n \Leftrightarrow < \underline{poa}(n), \sigma >$
RE: $X_{10*}\ \sigma\ \{\text{Case }\{\text{ines}\}, \text{Number}\{sg\}\} \Rightarrow X_3^{W} \oplus ssa \Leftrightarrow < p\underline{oa}s(sa), \sigma >$
RE: $X_{10*}\ \sigma\ \{\text{Case }\{\text{elat}\}, \text{Number}\{sg\}\} \Rightarrow X_3^{W} \oplus sta \Leftrightarrow < p\underline{oa}st(a), \sigma >$
RE: $X_{10*}\ \sigma\ \{\text{Case }\{\text{ades}\}, \text{Number}\{sg\}\} \Rightarrow X_3^{W} \oplus lla \Leftrightarrow < p\underline{oa}l(la), \sigma >$
RE: $X_{10*}\ \sigma\ \{\text{Case }\{\text{allat}\}, \text{Number}\{sg\}\} \Rightarrow X_3^{W} \oplus lle \Leftrightarrow < p\underline{oa}lle, \sigma >$
RE: $X_{10*}\ \sigma\ \{\text{Case }\{\text{ablat}\}, \text{Number}\{sg\}\} \Rightarrow X_3^{W} \oplus lta \Leftrightarrow < p\underline{oa}lt(a), \sigma >$
RE: $X_{10*}\ \sigma\ \{\text{Case }\{\text{abes}\}, \text{Number}\{sg\}\} \Rightarrow X_3^{W} \oplus tta \Leftrightarrow < p\underline{oa}tta, \sigma >$

[5] See Kettunen 1940, map 65, available online at http://kettunen.fnhost.org/html/kett065.html.

The phenomena found in South-Eastern Finnish dialects strongly advocate in favor of a RSC analysis, considering the fabric of ICT and the extensive complexity of ICT thoughout the diasystem, rather than surveying only the standard language. Moreover, the weak grade -d- for coronal stops in Standard Finnish is notoriously known as the product of artificial and normative levelling –it is straightforwardly borrowed from Swedish– rather than as a native reflex. We'll therefore proceed further in exploring the diversity of solutions found in the Southern Finnic languages from a diasystemic standpoint, focusing first on Standard Estonian (SE), then on the Kihnu dialect.

3. MODELING INFLECTIONAL CLASS SYSTEMS IN SOUTH EASTERN FINNIC LANGUAGES

Remes (2009) provides an interesting account of nominative *versus* genitive singular stem patterns in standard Estonian, typical of the main trends available in this system, from an Item and Process standpoint, summed up below in Box 1[6]:

Box 1. Remes' model revisited and expanded for ICT of SE

Default forms, with syncretic stems for both nom & gen sg: *maa* 'country', *pesa* 'nest', *saba* 'tail', *pere* 'family', *õnnetu* 'unhappy', *aasta* 'year'.

Alternation patterns, according to the following subsets, for NOMINATIVE: GENITIVE SG forms:

Desinential stem vowel alternation: *nimi : nime* 'name'. *Templatic* alternation:

Intensive[7]: *lapsik : lapsiku* 'childish', *teos : teose* 'work, (published) volume', *ilus : ilusa* 'beautiful', *kuulus : kuulsa* 'well known, famous', *peegel : peegli* 'mirror', *harakas : haraka* 'magpie', *neljas : neljanda 'fourth'*, *jalg : jala* 'foot', ^{Q3} *keel :* ^{Q2} *keele* 'language, tongue', *rikas : rikka* 'rich', ^{Q2} *võõras :* ^{Q3} *võõra* 'guest, stranger, foreignor', *kannel : kandle* 'Finnic

[6] I have revisited and modified Remes' terminology in order to make it compatible with the modeling used to frame the implicational graph below (Figures 2 and 7).
[7] i.e., templatic *contraction*, with consecutive stem 'ghost' vowel alternation.

harp'. NB: exponents ^{Q2} and ^{Q3} refer to prosodic quantity 2 (long) and 3 (extralong).
Extensive[8]: *pime : pimeda* 'dark, blind', *ese : eseme* 'thing'.
Qualitative gradation patterns:
Introflection sada : saja 'hundred', *tuba : toa* 'room', *murre : murde* 'dialect'
Introflection and desinential alternation: *mägi : mäe* 'hill', *tegu : teo* 'act'.

I suggest considering that alternations such as *kallis: kalli* 'dear, expensive', opposing a consonantal stem to a vowel stem are above all qualitative. Such pairs can be defined as *(Stem) Desinential C* versus *Desinential V*, akin to the 'intensive' or the 'introflexive type' (ex. *kallas : kalda* 'shore', nom. Sg : gen. sg.), albeit not properly identical to this parameter, as these thematic units are more external than those involved in introflection proper.

I also suggest adding two parameters –mostly active in the suffixal domain– to this list:

a. Suffixal C alternation: *esimene: esimese* 'first', *vaikne: vaikse* 'quiet'. The same suffixal *-n-/-s-* alternation exists in Finnish and in most Finnic languages. The property suffix *-ne/-s(e)* can be considered derivational, or at least of derivational origin (with adjectival and diminutive, i.e., evaluative, semantic features).
b. Suffixal V alternation: *`lind*: *`linde* 'bird' (Nominative Sg: Partitive Pl; NB: hence, the diacritic ` stands for an extralong quantity, i.e., Q3, according to usual conventions among Estonian linguists). Here *-e* is not an intensive stem vowel (in this case, *-u* would be the proper stem vowel, in nom. sg.), but rather a suffix, occupying the nucleus slot. Moreover, as a partitive plural vowel, *-e* is an analogical *splinter*[9], from the 22nd and other IC paradigms.

Following an Item and Process approach, we can postulate, as a working hypothesis for Standard Estonian IC lumping, that the seven

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[8] i.e., *expansion* (with either an alternating semi-derivational *augment*, or a 'ghost' *augment* (according to the French term).
[9] See Dubert–Garcia (2014) for a definition of this term. In short, a splinter is an inflectional fragment which spreads from one cell or paradigm to others, as with the velar marker in verb inflection in Catalan.

processes ranked in the implicational graph below account for most of SE declension inflectional classes.

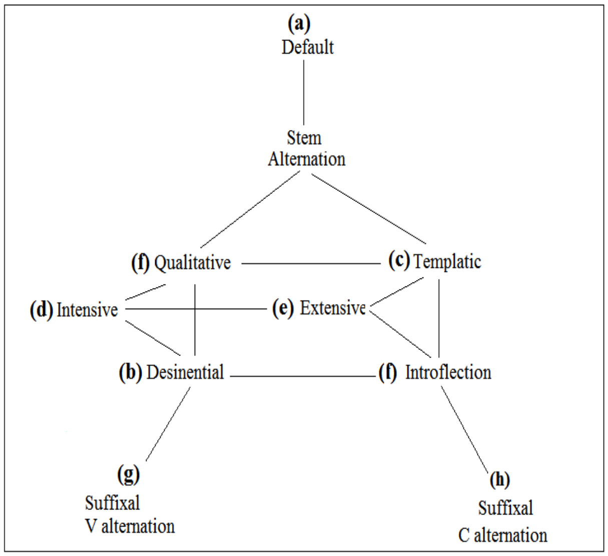

Figure 2. An implicational graph for inflectional patterns in Standard Estonian, inspired by Haspelmath's implicational graph design: see Haspelmath (1997) and Hienonen (2010).

These patterns can be ranked according to an implicational graph[10], as in Figure 2, in which the *default* pattern stands as an external option, dominating an intricate square-shaped network of patterns –templatic *versus* qualitative, and introflexive *versus* desinential. *Qualitative* patterns may qualify as *intensive* or not, while *templatic* patterns may in turn qualify as *extensive* or not. The former may cumulate with *desinential* alternations, whereas the latter may expand (as *extensive*) or shrink (through *introflection*). Not only do these structural options account for most of the complexity in stem alternations in Estonian: they combine and interact throughout the whole Southern Finnic dialect network (i.e., Estonian and Livonian). The roof-shaped figure at the center of the graph

[10] See Haspelmath (1997) and Hienonen (2010) for implicational graphs applied to semantic mapping rather than inflectional patterns. We nonetheless feel intellectually indebted to these contributions.

has undergone ‘structural reforms’ in most Estonian dialects; it is densely interactive, reconfigurating its links, according to mechanic (i.e., *phonological*) or analogical constraints (*metatypy*). In contrast, in the same way as the *default* parameter at the top of the graph, the suffixal alternation parameters, at the bottom of the graph, are more robust and stable –and fairly predictable–, although it is clearly connected to *intensive* and *introflection* and *desinential* marking.

4. Modeling the Processes From MPR

When referring to *templates* and *templatic parameters*, we denote prosodic/metric CVCV or ONON (Onset-Nucleus) grids (see Angoujard 2006), such as in the representations below in Figure 3 (not the morphological template in itself). *Intensive* patterns flow from ECP (*Empty Category Principle*), *introflexion* from Coda Licensing, prosodic ‘overstrength’ from Compensatory Lengthening. Figures 3–5 provide analysis of the rhythmic grids of the realized forms from the principal parts[11] relevant here, i.e., nominative vs. genitive vs. partitive or ill sg.

An example of *Templatic* alternation proper, yielding *introflexive* realizations as phonological outputs, with melodic interaction (hinted at here with phonological primitives or elements, such as {U} for *Labial* & *Dorsal* vs. {A} for *Low*. The next set of representations, in Figure 4 applies for Viks’ IC S 18 e (1992): *tuba: toa: tuppa* ‘room’ (nom : gen : ill. sg).

In the lower diagram, the numbers 1, 2, 3 read according to the encoding of *onsets* (index 1), *nuclei* (index 2) and *code* (3) in Declarative Phonology (Angoujard 2006), hinting at the intricacy of alternating stems for a short default stem such as *tuba* ‘room’ (nom sg, Q1), a compressed and introflected stem such as *`toa* (gen sg, Q3) and a long stem such as *`tuppa* (ill sg, Q3).

[11] i.e., the representative or exemplary paradigms in any inflectional system.

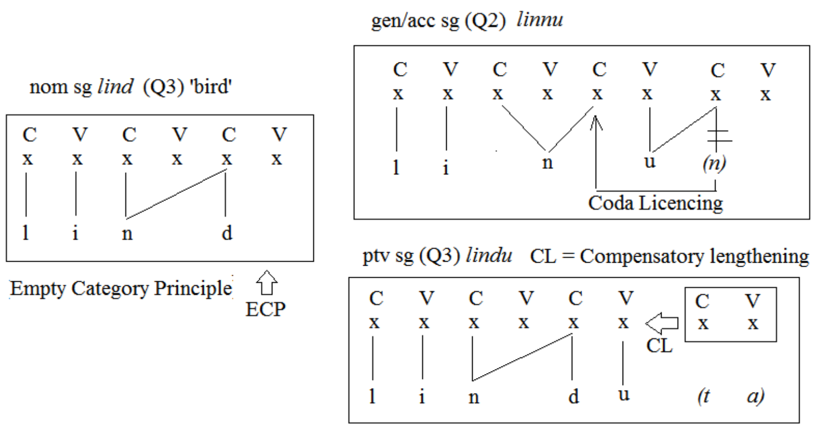

Figure 3. CVCV model applied to Viks' IC S 22/e: lind 'bird'. Templatic configurations and processes[12].

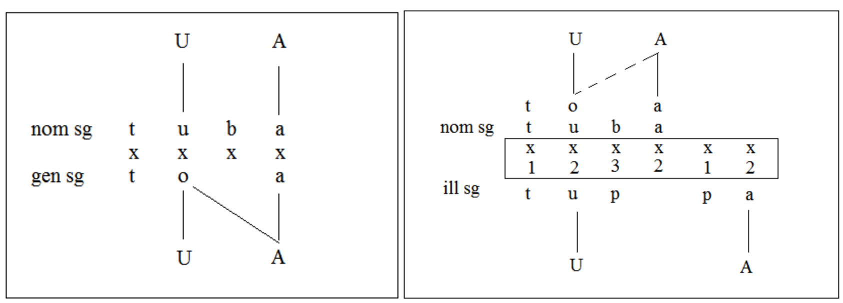

Figure 4. Templatic configurations and processes: CVCV and phonological primitive interaction model applied to Viks' IC S 18 e: tuba 'room'.

Figure 5 provides an analysis of templatic processes of the extensive type, based on IC A 2 nom sg *tihe*: gen/acc sg *tiheda* 'dense':

These representations enhance the intricacy of processes involved in inflection patterns. Not only do taxonomic traits such as *intensive, templatic, introflexive, desinential* make up a complex set of inflectional strategies of the *Item and Process* type: they are hierarchically embedded within each IC, as shown in Tables 1 and 2 below.

[12] Inflectional classes for Estonian are labeled here according to the standard taxonomy, designed by Viks in her reference morphological dictionary of Standard Estonian, i.e. IC S 22/e (Viks 1992, 195): nom sg `*lind* : gen/acc sg *linnu* : ptv sg `*lindu* : ptv pl `*linde*[id 'bird'.

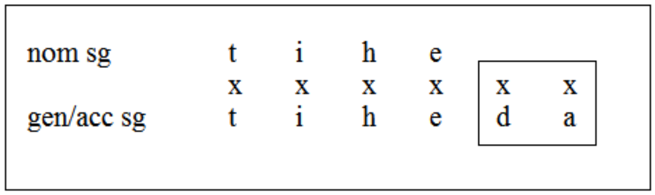

Figure 5. Templatic configurations: CVCV and phonological primitive interaction model applied to Viks' IC A 2: tihe 'dense.

5. INTRICACY OF THE *ITEM AND PROCESS* MODEL PARAMETERS

Table 1 accounts for IC S 22/e (Viks 1992,195), according to principal parts such as nom sg `*lind*: gen/acc sg *linnu* : ptv sg `*lindu* : ptv pl `*linde*[id 'bird'. The >> signs in the upper cells denote hierarchical trends for this item of the CVSC(V) type (*S* stands for Sonorant, and *(V)* for a 'ghost' or deletable thematic nucleus).

Table 1. Main Item and Process parameters involved in inflectional patterns for `lind 'bird' in SE

Morphosynt.	Realisations	INTENSIVE >>	TEMPLATIC >>	INTROFLEXIVE >>	DESINENTIAL >>
nom sg	`*lind*	√			
gen/acc sg	*linnu*			√	
ptv sg	`*lindu*		√		
ptv pl	`*linde*				√

Table 2. Main CVCV Government Phonology parameters involved in inflectional patterns for `lind 'bird' in SE

Morphosynt.	Realisations	Intens	Templatic	Introflx	Desinential	Prosody
nom sg	`*lind*	[+ECP]				marked
gen/acc sg	*linnu*			[+Gvt]		default
ptv sg	`*lindu*		[-ECP]			marked
ptv pl	`*linde*				[+Lic]	marked

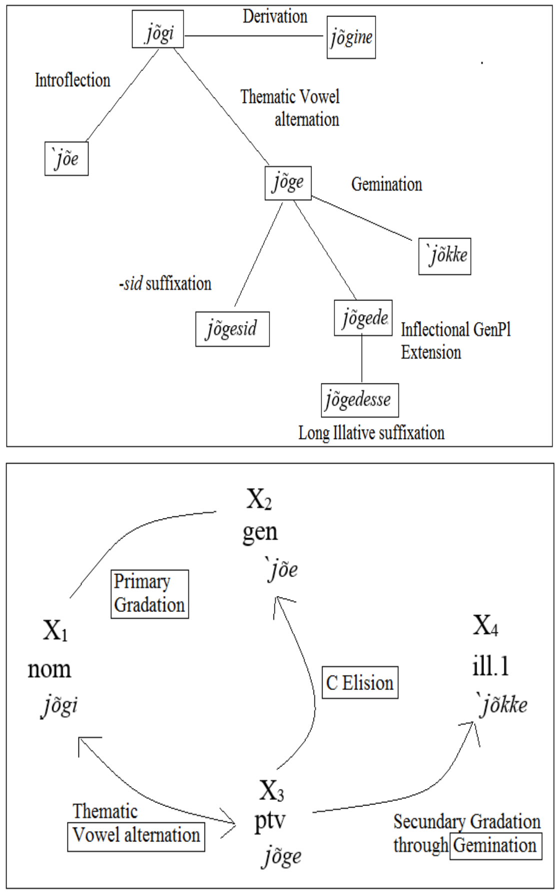

Figure 6. The interplay of stems, exponents and correlated phonological processes in SE.

An even more complex allomorphic dynamics unfolds as a graph, accounting for thematic space according to a cascade model in Figure 6 for the CVCV item *jõgi* 'river' (IC 21 according to Viks' ICT), in Standard Estonian. From the nominative form *jõgi*, in the upper part of the graph, the adjective *jõgine* is derived (right of the diagram), horizontally, as a mere lexical shift –not an inflectional one. The tree splits vertically in two, with the prosodic Strong Grade Q3 form *`jõe*, for gen sg, with introflection, on the left, as opposed to the *jõge* form, for ptv sg, with stem vowel alternation (*-i* ⬄ *-e*). This full template stem of the CVCV type may concatenate, in turn, with -*sid* suffixation for ptv plural *jõgesid*, or with the more general formative -*de* giving gen pl *jõgede*, which also works as an oblique plural stem *jõgede*-, as in the last item at the bottom of the graph *jõgedesse*. But it can also undergo further strengthening, without desinential suffixation, as in `*jõkke* (Q3) ill sg (lower, on the right).

From a PFM standpoint, stems listed in the graphs rank as in Table 3 (Xn…). Nevertheless, they all result from morphonological processes such as primary gradation (Strong X_1 vs. Weak X_2 through C elision: *jõgi vs. jõe*- in nom pl, ill 2, etc.), stem vowel height alternation -i/-e (X_1 *jõgi* : X_3 *jõge*) and gemination (X_4 `*jõkke*), as pointed out in the graphs, Figure 6.

In PFM, Morphophonological Rules (MPR) are listed separately from the stems (RSC) and affixes (RE). The shorter the inventory of processes of this kind, the better. Here is a parsimonious set of MPR for SE, which match the processes enumerated in the diagrams in Figure 6.

Table 3. Stem selection for *jõgi* in SE, in relation with data in Figure 6

	Standard Estonian (IC S 21)			
	Singular	Stem	Plural	Stem
nom	*jõgi*	X1	*jõed*	X2
gen	*`jõe*	X2	*jõgede*	X3
ptv	*jõge*	X3	*jõgesid*	X3
ill.1	*`jõkke*	X4	*jõgedesse*	X3
ill.2	*jõesse*[13]	X2		

Box 2. A parsimonious set of MPR for SE

4. MPR 1: Weakening
5. MPR 1/a: Vowel Elision
6. MPR 1/b: Consonant Elision
7. MPR 2: Strengthening
8. MPR 2/a: Gemination 1 (Q2)
9. MPR 2/b: Gemination 2 (Q3)
10. MPR 3 : Thematic Vowel alternation[14]

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[13] ill 1 & 2 are free variants for illative: either through Strong/Weak stem alternation (`*jõkke*), also called 'short illative' in Estonian grammar, or through suffixal concatenation on the weak stem (*jõe-sse*), called 'long illative'.

[14] i.e., Stem vowel alternation.

In a system such as Estonian, 'routine' MPR which would be ranked high in the hierarchy of another Finnic language, like Vowel Harmony (VH) in Finnish (see Block III above), may be ranked lower, or be completely absent from the system. In some Estonian dialects, e.g., Kodavere (the Eastern dialect, on the shore of the Peipsi lake), MPR such as those enumerated above may be assigned fine-grained specification, or they can be embedded in specific RSC (as resilient vowel harmony activated from -*e* stem vowels on specific exponents, in Kodavere).

Nevertheless, the entangling of morphophonological processes as in Box 2 is more the rule than the exception, as we saw from data in Figure 6 and Table 3. Most of the time, a bundle of such parameters is involved in the same IC, as in Tables 1 and 2.

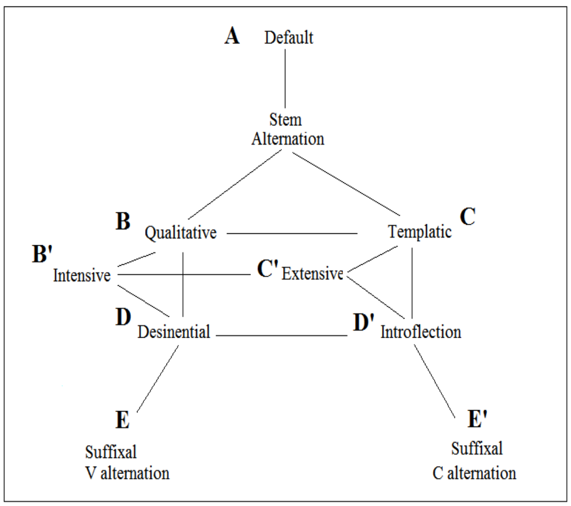

Figure 7. A Conflated or Reductionist Implicational graph for inflectional patterns in Standard Estonian.

Moreover, we still face a twofold challenge: on the one hand, to reduce the number of inflectional classes, on the other hand, to unify both taxonomic components (nominal & adjectival inflection ⇔verbal inflection). We must accept the idea that we have to pick the most relevant parameter out of a hierarchy, in order to work out a stable, reductionist (i.e., anti-atomistic) taxonomy, which would reliably account for general patterns, and to some extent, for the learnability of these intricate Finnic IC systems. The next implicational graph makes an attempt at such a broad IC taxonomy according to the Item & Process standpoint. We could consider them as 'macro-IC'. These macro-classes amount to five, instead of twenty-six (according to ÕS 2013, the latest edition of the Standard Estonian reference dictionary), listed as IC taxonomic classes A to E. However, some additional subclasses (B', D', E') may increase the number of IC in this new model. Macro-IC from A to E labels rank as primary, i.e., dominant patterns, whereas sub-classes from B' to E' can be considered as specifications or secondary instantiations of the previously mentioned major patterns (A to E), in Figure 7.

In the next section, we will see how SE declension IC can be reduced to a set of five macro-classes.

6. NOMINAL AND ADJECTIVAL IC (DECLENSION) IN ÕS 2013: A LUMPING TAXONOMY FOR SE

Table 6 shows an attempt to apply the major procedural categories configurated in Figure 7 to the ÕS 2013 grid. The list starts with the *default IC* labeled as A, which is syncretic, showing generalized isomorphy between the three principal parts taken into account here for RSC: SE *pesa, elu, pere, ohutu, sõna, without any modification of the stem, nor of the prosodic structure (plain CVCV). The same isomorphy occurs for the prosodic variant of the A macro-class here labeled AS: all forms have the extralong quantity Q3: SE `voodi, `koi, `idee.* In contrast, the B macro-class accounts for qualitative stem alternation, either of the intensive type (SE *seminar*: *seminari*; *tühi*: *tühja*, etc.), or through stem vowel alternation, as in SE *süli*: *süle*. The A^S macro-class is entirely of the intensive type, with strong gradation. Subclasses such as B^S & D alternate rhythmic templates and prosodic quantity: *`leib / leiva / `leiba.* Throughout the table, macro-classes unfold or combine in intricate patterns, which all come under the handfull of MPR listed in Box 2 above, the implicational parameters in Figure 6, and the CVCV parameters in Table 2 (e.g. ECP obviously accounts for intensive templates, as the original stem shows up as an allomorphic full stem when Coda Licensing had been diachronically triggered by a C or CV exponent, as in Figure 1 above).

Table 6. A reductionist taxonomy for SE declension, based on *ÕS 2013* ICT

IC	Nom sg.	Gen sg.	Part. sg.	Translation
A	*pesa*	*pesa*	*pesa*	‘nest’
	elu	*elu*	*elu*	‘life’
	pere	*pere*	*peret*	‘family’
	ohutu	*ohutu*	*ohutut*	‘safe’
	sõna	*sõna*	*sõna*	‘word’
AS	\`voodi	*\`voodi*	*\`voodit*	‘bed’
	\`koi	*\`koi*	*\`koid*	‘moth’
	\`idee	*\`idee*	*\`ideed*	‘idea’
B	*seminar*	*seminari*	*seminari*	‘seminar’
	tühi	*tühja*	*\`tühja*	‘empty’
	padi	*padja*	*\`patja*	‘pillow’
	puri	*purje*	*\`purje*	‘sail’
	Nom sg.	*Gen sg.*	*Part. sg.*	Translation
	õpik	*õpiku*	*õpikut*	‘textbook’
	süli	*süle*	*süle*	‘lap’
BS	\`õnnelik	*õnneliku*	*\`õnnelikku*	‘happy’
	Nom sg.	*Gen sg.*	*Part. sg.*	Translation
	\`koer	*koera*	*\`koera*	‘dog’
	\`hein	*heina*	*\`heina*	‘hay’
	\`külm	*külma*	*\`külma*	‘cold’
	\`suur	*suure*	*\`suurt*	‘great, big’
	\`poiss	*poisi*	*\`poissi*	‘boy’
	\`riik	*riigi*	*\`riiki*	‘state, nation’
	\`põu	*põue*	*\`põue*	‘breast’
BS& D	\`leib	*leiva*	*\`leiba*	‘bread’
B & C	\`number	*\`numbri*	*\`numbrit*	‘number’
	oder	*odra*	*\`otra*	‘barley’
	vaher	*\`vahtra*	*\`vahtrat*	‘maple’
	tanner	*\`tandri*	*\`tandrit*	‘soil’
	küünal	*\`küünla*	*küünalt*	‘candle’
C	*mõte*	*\`mõtte*	*mõtet*	‘thought’
C’	*ase*	*aseme*	*aset*	‘place’
	liige	*l\`iikme*	*liiget*	‘member’

IC	Nom sg.	Gen sg.	Part. sg.	Translation
D	*kallis*	*`kalli*	*kallist*	‘dear’
	rukis	*`rukki*	*rukist*	‘rye’
D’	*jõgi*	*`jõe*	*jõge*	‘river’
	kallas	*k`alda*	*kallast*	‘shore’
	nägu	*`näo*	*nägu*	‘face’
	tuba	*`toa*	*tuba*	‘room’
	sõda	*`sõja*	*sõda*	‘war’
D’S	*`uus*	*uue*	*`uut*	‘new’
	käsi	*`käe*	*`kätt*	‘hand’
E	*katus*	*katuse*	*katust*	‘roof’
	harjutus	*harjutuse*	*harjutust*	‘drill’
E’	*oluline*	*olulise*	*olulist*	‘essential’
	soolane	*soolase*	*soolast*	‘salty’

In fact, almost all these IC turn out to be a microsystem of hierarchized and embedded taxonomic criteria. To take this point into consideration, we could further develop a ‘cascade model’ of embedded IC, with a set of implicational rules. Its shape would look like the diagrams in Figure 6. Nevertheless, this will not be necessary within the scope of the current research, which is intended as a preliminary study for diasystemic modelling of Finnic declension from the standpoint of two current theories from the fields of inflectional morphology (PFM) and autosegmental phonology (CVCV Theory). In order to strengthen the diasystemic component in our approach, we will now apply the ICT resulting from this contrastive approach to a specific case study: declension in the Kihnu dialect. This dialect spoken on an island located in the Gulf of Riga, 14 km off the coast of Pärnu, and displays structural traits shared both by Western and Southern Estonian dialects.

7. Diasystemic IC Shifts, According to a Lumping Taxonomy: SE vs. Kihnu

The Kihnu dialect, as compared to SE, provides good examples of several universal trends in ICT framing in languages. IC shifts (henceforth ICS) are the principal mechanism at play. In sum, an IC in one dialect matches a different one in the standard variety, or in other dialects (ex. B > D, or D'), or a simple IC may merge with another, resulting in entangled and complexified types (ex. B > B&D > B&C), i.e., there is a tendency to reinforce already existing trends such as introflection. Moreover, in the case of Kihnu vs. SE, a trend to neutralize Q3 prosodic gradation appears, along with a trend to neutralize complex taxonomic patterns, merging separate IC as in the shift B, D > A. Last, but not least, a third (fine-grained) trend emerges, to specify or unspecify D patterns (D' > D, D' > D'&B). Table 7 enumerates these Inflectional Class Shifts (Kihnu data in bold fonts; shaded cells or IC enhance diasystemic contrasts); the last column to the right highlights the main processes accounting for variation. The survey of IC in a peripheral dialect vs. the standard variety indicates that dialect differences go far beyond mere phonological isoglosses. Indeed, any dialect survey of morphological variation should take into account mechanisms of Inflectional Class Shifts (i.e., ICS), based on a model for Inflectional Class Taxonomy (i.e., ICT). We dare say, based on the Finnic evidence, that these ICS are as relevant and overwhelming for the design of dialect divisions and the understanding of any diasystem as vowel or consonant shifts in traditional dialectology.

To give a few examples of how this diasystem fragment works here, the default macro-class A remains as inert in the Kihnu dialect (hence, Kh) as in SE, except for palatal vowel harmony, lost in the former, but preserved in the latter: SE & Kh *pesa/*Kh *pesä.* The intensive type B (SE *tühi*: *tühja/*Kh *tühjä* does not vary either, except for vowel harmony, which also constrains stem vowel alternation, as in SE & Kh *süli*: *süle*, with stem vowel -*e* in Kh like in in SE, instead of -*õ* for velar stems, as in nom sg SE `*õnne̲lik* vs. Kh `***õnnõ̲lik, gen sg SE*** *õnne̲liku* vs. Kh *õnnõ̲liku*, etc. Instead, a lexeme such as PÜRI 'sail' has a bare stem in -*e* (*purje*) in SE vs. a derived -*ut* stem in Kh *purjut*, making the B class shift to the D class in Kh. All the discrepancies show fine-grained typological differentiation of ICT, fostered by local MPR, and a striking resilience of a major Finnic MPR enumerated above, in Block III(xvii), which dominate subsequent rules as defined for SE (and its dialects) in Box 2 (rows xx-xxvi of declarative MPR).

Table 7. Comparing IC exemplars in SE and the Kihnu Island dialect

	IC	Nom sg.	Gen sg.	Part. sg.	Gloss	
SE	A	*pesa*	*pesa*	*pesa*	‘nest’	Diasystemic default (Nothing happens/no IC shift)
Kihnu		*pesä*	*pesä*	*pesä*		
SE		*elu*	*elu*	*elu*	‘life’	
Kihnu		*elu*	*elu*	*elu*		
SE		*pere*	*pere*	*peret*	‘family’	
Kihnu		*pere*	*pere*	*peret*		
SE		*kivi*	*kivi*	*kivi*	‘stone’	
Kihnu		*kivi*	*kivi*	*kivi*		
SE		*sõna*	*sõna*	*sõna*	‘word’	
Kihnu		*sõna*	*sõna*	*sõna*		
	IC	*Nom sg.*	*Gen sg.*	*Part. sg.*	Gloss	
SE	AS	`voodi	*`voodi*	*`voodit*	‘bed’	Other lexeme (IC B)
Kihnu		*säng*	*sängü*	*`sängü*		
SE		`koi	*`koi*	*`koid*	‘moth’	Default prosodic grade
Kihnu	A	*koi*	*koi*	*koid*		
SE	B	*tühi*	*tühja*	*`tühja*	‘empty’	Idem (& VH)
Kihnu		*tühi*	*tühjä*	*`tühjä*		
SE		*padi*	*padja*	*`patja*	‘pillow’	Idem
Kihnu		*padi*	*padja*	*`patja*		
SE	B	*puri*	*purje*	*`purje*	‘sail’	Derivation ICS B>D
Kihnu	D	*purjut*	*`purju*	*purjut*		
SE	B	*süli*	*süle*	*süle*	‘lap’	ICS B > A
Kihnu	A	*süle*	*süle*	*süle*		
SE	BS	`õnnelik	*õnneliku*	*`õnnelikku*	‘happy’	Idem
Kihnu		`õnnõlik	*õnnõliku*	*`õnnõlikku*		
SE	BS	`koer	*koera*	*`koera*	‘dog’	
Kihnu	B(S)	*koer*	*koera*	*`koera*		
SE	BS	`hein	*heina*	*`heina*	‘hay’	ICS B > D’
Kihnu	D’	*ein*	*eenä*	*`eina*		
SE	BS	`külm	*külma*	*`külma*	‘cold’	Idem (& VH)
Kihnu		*külm*	*külmä*	*`külmä*		
SE	BS	`suur	*suure*	*`suurt*	‘great, big’	Idem (& e>õ)
Kihnu		*suur*	*suurõ*	*`suurt*		
SE	BS & D	`leib	*leiva*	*`leiba*	‘bread’	ICS BS&D > B&C
Kihnu	B & C	*leib*	*leva*	*`leibä*		
SE	BS	`poiss	*poisi*	*`poissi*	‘boy’	ICS BS > B&D
Kihnu	B & D	*poiss*	*poesi*	*`poissi*		
SE	BS	`riik	*riigi*	*`riiki*	‘state’	Idem
Kihnu	B	*riik*	*riigi*	*`riiki*		
SE	B & C	`number	*`numbri*	*`numbrit*	‘number’	Complex IC specification
Kihnu	B (& C)	`numbõr	*`numbri*	*`numbõrt*		

Table 7. (Continued)

	IC	Nom sg.	Gen sg.	Part. sg.	Gloss	
SE	B & C	*küünal*	*`küünla*	*küünalt*	‘candle’	Idem
Kihnu		*küünal*	*`küündlä*	*küünält*		
SE	C	*mõte*	*`mõtte*	*mõtet*	‘thought’	Idem (& e>õ)
Kihnu		*mõtõ*	*`mõttõ*	*mõtõt*		
SE	C’	*liige*	*l`iikme*	*liiget*	‘member’	Idem
Kihnu		*liige*	*l`iikme*	*liiget*		
SE	D	*kallis*	*`kalli*	*kallist*	‘dear’	
		Nom sg.	*Gen sg.*	*Part. sg.*	Gloss	
Kihnu		*kallis*	*`kalli*	*kallist*		
SE		*rukis*	*`rukki*	*rukist*	‘rye’	ICS D > A
Kihnu	A	*rugi*	*rugi*	*rugi*		
SE	D’	*jõgi*	*`jõe*	*jõge*	‘river’	IC specification D’ & B
Kihnu	D’ & B	*jõgi*	*`jõe*	*jõgõ*		
SE	D’	*kallas*	*k`alda*	*kallast*	‘shore’	Idem
Kihnu		*kallas*	*k`alda*	*kallast*		
SE		*tuba*	*`toa*	*tuba*	‘room’	IC specification D(’)
Kihnu	D	*tuba*	*tua*	*tuba*		
SE	D’	*sõda*	*`sõja*	*sõda*	‘war’	
Kihnu		*sõda*	*sõja*	*sõda*		Default pros. grad.
SE	D’S	*`uus*	*uue*	*`uut*	‘new’	Resyllabation & prosodic grad. neutr.
Kihnu	D’ & C	*uus*	*uiõ*	*uut*		
SE	D’S	*käsi*	*`käe*	*`kätt*	‘hand’	Idem & prosodic grad. neutr.
Kihnu	D’	*käsi*	*käe*	*kätt*		
SE	E	*katus*	*katuse*	*katust*	‘roof’	Idem
Kihnu		*katus*	*katusõ*	*katust*		

Source: Leas & al. 2016.

Shaded cells point at particularly relevant discrepancies between the Kihnu and the standard variety, which should be tested for their relevance as morphophonological isoglosses (a set of variables often missing from linguistic atlases)[15].

[15] No wonder Singh and Desrocher (1996) wittily called morphophonology ‘Trubetzkoy’s Orphan’, a couple of decades ago. Nevertheless, Saareste’s Estonian linguistic atlas (1955a) displays a lot of valuable information in this field, although unsystematically, as far as ICT is concerned.

CONCLUSION AND PROSPECTS

The research presented in this chapter attempted to address what we could call the *Epistemological Reciprocity Principle*: any empirical investigation in linguistics should fulfill the following basic conditions:

- What can a language *L* bring to the development and (Popperian) falsification of linguistic theory?
- What can linguistic theory bring to the practical description and understanding of a language *L*?

In other words, linguistics should serve the advancement of our knowledge of language, just as languages should serve the theoretical and practical advancement of linguistics. Moreover, subcomponents of theoretical linguistics should cooperate, rather than compete or exclude one another. This chapter is the result of a long term reflection of the author, a linguist initially trained in phonology, who has realized over time that he has spent most of his efforts examining morphological facts since the beginning of his trajectory in theoretical linguistics. Morphological and phonological theory should cooperate more, and one way of doing so is to associate declarative models, such as CVCV and PFM. They do not always blend easily but can nonetheless highlight various facets of intricate phenomena, and in doing so further both Theory and Reference Grammars. We saw how PFM turns out to be a heuristic tool to investigate combinatorics between three sets of rules: RSC (stems), RE (affixes) and MPR (phonological processes). Although this threefold division between morphological layers may seem trivial, it is not. On the horizon lays the diasystemic approach of what we have called here “Inflectional Class Shifts” (ICS), based on the circuit of taxonomic parameters in the implicational graphs designed in Figures 2 and 7. PFM happens to be fairly flexible and handy to make such an attempt. Especially, the mingling of CVCV templatic criteria with ICT prerequisites points at encouraging results for the description of ICS within a diasystem.

Parcimony also helped much here. Lumping helps, as we saw with the downsizing of twenty six IC to five or eight ICT parameters. Moreover, unification can be achieved, in spite of the heterogeneity of IC mechanisms and criteria, between nouns and adjectives on the one hand, and verbs on the other hand, as pointed out in a seminal paper by the Estonian linguist and Võro writer Iva Sulev (2010). Among the next tasks to perform in the future, I would suggest applying the CVCV/PFM model sketched out here to the whole Southern Finnic diasystem, in relation with Votic and Livonian.

Last, but not least, the more attemps we make at cross-mediating theoretical models from the distinct realms of Morphology and Phonology, which naturally never give up the fight to preserve their 'own sovereignty' over empirical data, the more we'll discover, as in the famous tale by Hans Christian Andersen, that the King's clothes may not hide much, and that what stands behind the curtain of reality is much less uncanny than what we had been led to believe. Many 'agglutinative' languages behave like the Finnic languages: some enhancing the inner diversity of their lexemes in a drift towards a Word & Paradigm type, like in Estonian, some preserving their Item & Arrangement agglutinative shape, like in Finnish. In the same way, in Niger-Congo languages, some may look very agglutinative (many Bantu languages), some may turn out to be very fusional (Gur and Voltaïc languages), whereas some end up looking more like isolating languages (Kru languages). In these cases, as in Finnic, the interplay of CVCV constraints and threefold PFM sets of rules (RSC, RE & MPR) play their tricks all along evolution, with the help of two mainly opposing factors: the arrow of time (evolution) on the one hand, and the economy of competing systemic patterns according to universal constraints of parsimony and iconicity on the other.

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