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Linguistic strategies and markedness in Estonian morphology*

Abstract

Estonian has features characteristic to both agglutinative and inflectional languages. The paper outlines in more detail the standing of different morphological subsystems on the inflective – agglutinative – analytic scale and characterises the strategies Estonian uses to express the values for some core grammatical categories. It is concluded that Estonian verbal morphology is more agglutinative than nominal and adjectival morphology. The somewhat weaker grammaticalisation of verbal morphology indicates that Estonian is not action oriented, but rather object-oriented. The well grammaticalised moods, particularly the ones expressing evidentiality and a rather weakly grammaticalised tense and missing aspect further characterises Estonian verbal morphology as conversationally rather than temporarily organised.

1. Introduction

In a broad sense, the traditional morphological typology proposed in the 19th century by Schlegel and later modified and refined by a number of linguists, is still used as a reference framework for general characterisations of the morphological makeup of languages. Yet the advancement of typological studies has clearly shown the limits of such classifications. Contemporary typologists do not try to classify the whole languages into types but rather study separate grammatical phenomena to see how these phenomena are encoded in different languages (see Croft 2003). Thus, instead of language types, typologists study linguistic types or strategies for expressing a given grammatical category.

I chose an eclectic approach for the overview: first I characterise Estonian morphology from a traditional point of view outlining its standing on the agglutinative – inflective – analytic scale. Then I proceed to a more detailed account characterising the strategies Estonian uses to express the values for some core grammatical categories. This is done from the perspective of typological markedness as developed in Croft (2003).

2. The morphological structure of Estonian

The morphological structure of words was the first basis for typological classification, known as morphological typology. The classification was proposed by Friedrich and August Schlegel, elaborated by Schleicher, later by Sapir.

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According to this typology, languages can be classified to isolating, agglutinative, inflective (or fusional) and incorporating types. Isolating languages have no morphological structure and words are basically monomorphemic, agglutinative languages use transparent affixation; inflective or fusional languages use stem alternations and complex affixation. Although morphological typology was initially meant to characterise whole languages as belonging to one of these types, it is evident that languages do not fall into pure types, but have features from different structural strategies. Viitso (1990) has tried to overcome this by proposing that the types are not exclusive, but hierarchical so that isolating languages are those that use only analytical constructions, agglutinative languages use both analytical as well as agglutinative features, and inflective languages make use all three grammatical processes.

Although this principle would allow strict labelling of languages into morphological types, it is of little use, since the extent a language uses one or other process is not reflected. As a consequence, languages with a very different morphology can fall into one class. To avoid such misleading classifications, at present the morphological typology is usually applied to different morphological subsystems. For example a language may have an agglutinative nominal system whereas the verbal morphology is inflectional (Croft 2003).

The morphological structure of Estonian has been discussed by several linguists at different times, for example Skalička (1975), Comrie (1980), Viitso (1990) and Sutrop (1997). Quite unanimously, all the authors have found that Estonian has features characteristic of both agglutinative as well as of inflective languages. Although analytic constructions are used in Estonian, too, they remain complementary. For a general overview of Estonian morphology see Viitso (2003). Below I will give an account of morphological subsystems of Estonian indicating to what extent one or the other strategy is used.

In order to distinguish agglutination from inflection, I follow Comrie (1980) by defining inflectional features as deviation from canonical agglutination. Canonical agglutination is characterised by segmentability, and invariance of morpheme expression. Comrie's notions of invariance and segmentability are closely connected to the notions of constructional iconicity, uniformity and transparency in the theory of natural morphology (Mayerthaler 1981, Wurzel 1984), but I prefer the first ones due to methodological reasons. Thus, according to Comrie (1980), segmentability means that a complex word can be divided into morphemes without problems in morpheme boundaries. Invariance means that a morpheme does not have allomorphs, but has a uniform expression in all possible contexts. Hence, "for the most rigid interpretation of canonical agglutination, there would be a one-one correspondence between morphemes and their expression" (Comrie 1980: 93).

Let us first turn to verbal morphology as the different morphological strategies are more clearly distinguishable in conjugations than in declensions.

2.1. Conjugations

Estonian verbs can be divided into 6 regular conjugations (see Table 1) and a closed set of irregular verbs (Table 2). The conjugation classes differ from each other by two respects: by the stem allomorphy and by the affix allomorphy. The stem allomorphy is slightly more extensive than affix allomorphy: all 6 types differ from each other by different stem alternation patterns whereas the suffix allomorphy defines just 5 types.

ma-infinitive	***ela-ma***	***õppi-ma***	***hüppa-ma***	***riidle-ma***	***sööt-ma***	***tule-ma***
past	*-s/-si-*				*-is/-si-*	*-i*
tud-participle	*-tud*			*-dud*	*-tud*	*-dud*
impersonal	*-ta-kse*			*-da-kse*	*-ta-kse*	*- la-/ -na-/ -ra-kse*
da-infinitive	*-da*		*-ta*	*-da*	*-ta/ -da*	*-la,/ -na,/ -ra*
imperative PL	*-ge*		*-ke*	*-ge*	*-ke/ – ge*	*-ge*
number of words	4559	1499	508	217	97	73

Table 1: Estonian regular conjugations[1]. The table is based on VIKS (1992b: 48–51)

The irregular verbs also differ from each other by stem and affix allomorphy. The affix variants used are the same that are used for regular conjugations – the difference lies in distribution. Thus, the types in Table 2 could also be treated as conjugation classes with extremely small numbers of words:

ma-infinitive	***saa-ma***	***joo-ma***	***või-ma***	***käi-ma***
Past	*-i-*	*-i-*	*-s/-si-*	*-s/-si-*
tud-participle	*-dud*	*-dud*	*-dud*	*-dud*
Impersonal	*-da-kse*	*-a-kse*	*-da-kse*	*-a-kse*
da-infinitive	*-da*	*-a*	*-da*	*-a*
Imperative plural	*-ge*	*-ge*	*-ge*	*-ge*
Number of words	2	5	6	4

Table 2: Estonian irregular verbs.[2] The table is based on VIKS (1992b: 48–51)

2.1.1. Stem alternation patterns

Estonian has a number of stem alternation patterns, of which some are characteristic to one or the other word class, some affecting only a small closed set of words. However, there are two stem alternation patterns that occur both in verbs as well as nominals: grade alternation (*astmevaheldus* in traditional Estonian terminology) and shape alternation (*kujuvaheldus* in EHALA 1997b, *kahetüvelisus* in traditional accounts). Grade alternation has two mutually exclusive patterns: weakening and strengthening grade alternation, depending on which forms are in the strong grade, which ones in the weak grade. For the shape alternation, there is only one possible manifestation. Of course, many words have neither grade alternation nor shape alternation. Together, all these possibilities define 6 stem alternation classes, all of which are actually attested (see Table 3):

[1] Estonian has two infinitives, *ma*- and *da*-infinitive, named after the distinctive suffixes. *ma*-infinitive is also called supine (VIITSO 2003). *tud*-participle is the past impersonal participle. The translation of the examples in the table: *elama* 'to live', *õppima* 'to study', *hüppama* 'to jump', *riidlema* 'to quarrel', *söötma* 'to feed', *tulema* 'to come'.

[2] Translation of the example words: *saama* 'to get', *jooma* 'to drink', *võima* 'to may', *käima* 'to go'.

Base forms	***ela-nud ei ela***	***õppi-nud ei õpi***	***hüpa-nud ei hüppa***	***riiel-nud ei riidle***	***sööt-nud ei sööda***	***tul-nud ei tule***
Shape alternation	–	–	–	+	+	+
Strengthening gr. alt.	–	–	+	+	–	–
Weakening gr. alt.	–	+	–	–	+	–

Table 3: Stem alternation patterns in Estonian

The shape alternation means that a word has two stem shapes: the vowel (ending) shape and the consonant (ending) shape (for example ***riiel****-nud : ei* ***riidle***). The words without shape alternation only have the vowel shape. Grade alternation means that a word has some forms in the strong grade and some forms in a weak grade. The strong grade is the one that has either a stop (*lu**g**e-nud*), a geminate stop (*ei vaa**t**a*) or is in the third quantity (***õppi****-nud*). The form in the weak grade does not have this stop (*ei loe*), or has a stop instead of a geminate stop (*vaa**d**a-nud*) or the second quantity instead of the third (*ei* ***õpi***) (For an overview of Estonian morphophonological alternations see Viitso 2003: 25–32).

As can be seen from Table 2, the class *elama* does not have any stem alternations and fulfils the invariancy requirement of canonical agglutinative morphology as defined in Comrie 1980. This is also the most numerous and productive conjugation class in Estonian (see the last row in Table 1). All the rest of the classes have one or two stem alternations. As shows the last row in Table 1, the more stem alternations a type has, the more marginal it is in the sense of the membership size and productivity. The irregular verbs in Table 2 do not have stem alternation or grade alternation, but some of them have idiosyncratic vowel quality alternation and/or quantity alternation not found in regular verbs.

Although the table provides examples from amongst the verbs, the same regular stem alternation patterns occur also in nominals. The difference is that in the case of nominals, the stem alternation classes do not correlate with the suffix alternation classes in the way they do in the case of verbs. As will be shown later (see Table 4), for nominals, stem alternation is an independent means of grammatical expression. In the case of verbs, the grammatical meanings are expressed agglutinatively, while the stem alternation accompanies this in some types redundantly.

2.1.2. Suffix allomorphy

As is the case with stems, Estonian verbal suffixes also show variation (see Table 1). The Estonian verbal morphology does not therefore concur on the invariance requirement here either. However, the variation is not large and most of it does not qualify as serious violation of invariability. To specify the type of violation, Comrie (1980) distinguishes between phonological, morphological and lexical conditioning. Phonologically conditioned variation is considered a mild deviation whereas morphologically and lexically conditioned variations indicate stronger violation of canonical agglutination.

Thus according to Comrie (1980), phonological conditioning means that the shape of a morpheme is determined by the phonological context as is the case with Finnish vowel harmony where front and back variants of a suffix (for example *-lla* or *-llä*) depend on the front or back environment of the stem where they are attached.

In morphological conditioning the choice of an allomorph is determined by morphological environment. For example, Estonian plural morpheme has allomorphs *-d*, *-te* and *-de* so that *-d* occurs in nominative and *-te* and *-de* in genitive (and oblique cases).

Lexical conditioning is when a particular morphological property is idiosyncratically determined by the lexeme. For example, grammatical gender in German is mostly lexically conditioned, i.e. it is not predictable from the phonological shape of the word or the morphological environment where the word happens to occur.

If we look at the suffix variation in regular conjugations (Table 1), most of it seems to be phonologically conditioned. The allomorphic variation in past tense is conditioned by phonotactic constraints on pronounceability, except the allomorph *-i* which seems to be lexically conditioned for the *tulema*-type words. Also the *tud*-participle and impersonal morphemes have their allomorphs conditioned phonologically: the lenis variant is added to a voiced consonant, whereas the allomorph with an initial geminate (indicated by *t* in orthography) is added to a stem ending with a vowel. Again the exception is the *tulema*-type where the suffix initial lenis stop seems to have assimilated with the stem consonant (*tul-la-kse*, *min-na-kse*, *sur-ra-kse,* 'to come', 'to go', 'to die' impersonal).

The variation in *da*-infinitive and imperative forms follow the mirror rule – lenis variants (*-da*, *-ge*) occur in voiced environment and fortis variants (*-ta* and *-ke*) in voiceless environment. *hüpata*-type is an exception here. These stems end with a vowel and should trigger the "weak" suffixes, but historically the stems of this type ended with a voiceless consonant and so they trigger strong variants – hence, in this type the choice of a suffix is lexically conditioned. If we look at the affix allomorph alternation in irregular verbs (Table 2), all of it is lexically conditioned as there are no phonological constraints that would give preferences for one or the other alternation pattern: all the stems are monosyllables that end with a long vowel or diphthong.

Again, there is a clear correlation between the size and productivity of a type and the strength of invariability violations for suffixes: the smaller the type the more is the suffix variability lexically conditioned.

2.1.3. Segmentability

The second criterion for assessing whether a morphological system concurs to the requirements of canonical agglutination is segmentability. Comrie (1980) distinguishes two degrees of violations to segmentability: first, if it is known that the form consists of at least two morphemes, but it is unclear where the boundary between the morphemes lies; and second, if there clearly is "single morph expressing more than one morpheme" (Comrie 1980: 98).

In the case of the Estonian verbal conjugations in the majority of cases the boundary between the stem and the suffix can be determined unambiguously. There are some exceptions though: in *söötma*-type there is a possibility to segment *da*-infinitive as *sööt-a* or *sööt-ta*. The stem-final *t* is realized as a geminate between vowels, but as a fortis if a consonant follows (*sööt-nud*). Both *-a* (*müü-a, vii-a*) and *-ta* are existing *da*-infinitive allomorphs, so it is hard to decide which one is used in *söötma*-type. Segmentability problems arise also for *tulema*-type. Here, too, both *tull-a* and *tul-la* analyses are possible. In the first case the suffix triggers stem consonant gemination which is a possible morphological process in Estonian (*küla* : *külla* 'village', partitive : illative). In the second case, the suffix *-da*

assimilates to the stem consonant. The fact that negative impersonal is *ei tul-da*, gives preference to the assimilation analysis, because in other types, *da*-infinitive and impersonal suffixes always share the same allomorph. In this type the assimilation breaks this pattern partially.

There are also some cases when one morpheme expresses more than one grammatical meaning (for example person and number are expressed by single morphemes, and imperative mood does not have morpheme in singular). These cases will be dealt with in more detail later in sections 3.1 and 3.2.

To draw a conclusion of the analysis of the Estonian verbal morphology, it could be said that it has a strong and productive agglutinative core (*elama*-type) that is larger than the rest of the types together. This core is characterized by both invariance and segmentability. As for the suffixes, the Estonian conjugation has a prototypical set of suffixes which applies to the most productive stem alternation types; and a fairly variable periphery that is used for the small and unproductive stem alternation types. Thus the whole verbal morphology can be described as a continuum from agglutinative centre to the slightly inflective periphery. But taking into account the productivity of the types and the differences between their sizes, as well as the relatively little variation amongst suffixes, Estonian verbal morphology could certainly be characterized as agglutinative.

2.2. Declinations

Let us now turn to nominal morphology which is more complex but has also been awarded more attention in the literature (COMRIE 1980 and VIITSO 1990). Estonian nouns occur in two numbers (singular and plural) and in 14 cases (here I treat illative and additive as one case, following HASSELBLATT 2000). The cases are commonly divided into grammatical or abstract cases (nominative, genitive and partitive) and oblique or semantic cases (the rest). In the following, I divide Estonian cases into core and peripheral cases, the first group involving nominative, genitive, partitive and illative in singular and genitive and partitive in plural. The rest of the cases are peripheral. This classification largely corresponds to the semantic classification, as well as to morphological classification – the more abstract are the functions a case is used for, the more likely it is to have inflectional nature and the more central it is to the whole system.

		tasku	***tütar***	***oluline***	***suur***	***käsi***	***tubli***	***maa***	***pesa***	***sepp***	***hein***	***õnnelik***
Singular	NOM	Ø	W	Ø	S	S	Ø	Ø	Ø	S	S	S
	GEN	Ø	S	E	W	W	Ø	Ø	Ø	W	W	W
	PART	*-t*	*-t*	*-t*	*-t*	*-t*	*-t*	*-d*	Ø	S	S	S
	ILL*	Ø	-SSE	GEM	*-de*	GEM	*-sse*	RED	GEM	S	S	S
Plural	GEN	*-te*	*-de*	*-te*	*-te*	*-te*	*-de*	*-de*	*-de*	*-de*	*-te*/*-de*	WV/*-de*
	PART	*-i-d*	*-i-d*	V	V	V	*-sid*	*-i-d*	V/*-sid*	V/*-sid*	V/*-sid*	SV/*-sid*

Table 4: Estonian core cases[3]

[3] Symbols: NOM – nominative; GEN – genitive; PART – partitive; ILL* – illative, the case has also an agglutinative ending *-sse* which is absolutely uniform and regular for all declensions and is omitted from

Using Comrie's (1980) criteria of invariance and segmentability, the forms presented in Table 4 could justly be called inflectional. Let us first look at invariance.

2.2.1. Invariance

First, the nominative and genitive do not have any suffixes in singular. Following Comrie (1980), I assume that one member in a given category set may have a zero expression without it being a violation to canonical agglutination. Thus, the fact that nominative and singular are left unexpressed does not itself violate canonical agglutination.

The same cannot be said about genitive. In Estonian, it is differentiated from nominative either by grade alternation or stem end alternation; and for a large number of words, genitive is homonymous with nominative (*tasku* type has 1879 words, *maa* type 289 words and *pesa* type 497 words in Viks 1992a).

Partitive is expressed for the majority of the words by agglutinatively adding suffix *-t* to the stem. However, partitive could hardly be considered a canonical agglutinative case as it is by no means invariant: from around 23000 nominals in Viks (1992a), 14000 have *-t* suffix, 300 have *-d* suffix and for nearly 9000 words, partitive is expressed by grade alternation. More or less the same applies also to plural genitive which does not have a genitive suffix (just like genitive singular). It is formed from the partitive singular stem by affixing a plural suffix *-te* (13000 words) or *-de* (9000 words). A minor strategy for expressing genitive plural is stem vowel alternation (applies to around 1300 stems).

Partitive plural shows even more extensive variation. Here two strategies are almost equally widespread: the agglutinative *-i-d* where *-i* expresses plural and *-d* expresses partitive (around 10000 words) and vowel alternation (12000 words). Most of the types that use vowel alternation also have the *-sid* suffix as a free alternative, yet a few types allow only vowel alternation (*oluline*, *suur*, *käsi*). In one type (*tubli*) only the *-sid* suffix is used, indicating both partitive and plural, and no stem vowel alternation is allowed.

The illative singular has perhaps the most variable formation. First, all words allow agglutinative expression by suffix *-sse*. In addition to this, a short illative form is possible for a lexically specified subset of words. For each type the strategies for short illative are different: in a number of types, it is homonymous with partitive singular (*tasku* : *tasku*; *jalga* : *jalga*); in some types it is formed by stem consonant germination (*pesa* → *pessa*), and in one type by partial reduplication of the stem (*maa* → *maha*). Traditional grammars have treated the short illative as an exception and the agglutinative one as the primary expression of illative singular. However, as Hasselblatt (2000) has shown, from all illative

the table for the sake of clarity; Ø – the case does not have a suffix nor is it expressed by any type of stem alternation (for example *pesa* : *pesa* : *pesa* ['nest' NOM : GEN : PART]); S – the case is expressed by the strong grade of grade alternation; W – the case is expressed by the weak grade of grade alternation (for example *käsi* : *käe* 'hand'; *lohk* : *lohu* 'hole' [S:W]); GEM – the case is expressed by stem consonant gemination (*pesa* → *pessa*); RED – the case is expressed by partial stem reduplication (*suu* → *suhu* 'mouth'; *maa* → *maha* 'ground'); V – the case is expressed by stem vowel alternation (*jalga* → *jalgu* 'foot'); SV, WV – the case is expressed by combining grade alternation and stem vowel alternation (*õnneliku* : *õnnelike* : *õnnelikke* 'happy' [W:WV:SV]); E – the case is expressed by stem end alternation (*oluline* → *olulise* 'important'). Translation of the remaining example words: *tasku* 'pocket', *tütar* 'daughter', *suur* 'big', *tubli* 'good', *sepp* 'smith', *hein* 'hay'. The table is based on Viks (1992a: 40).

singular forms, the short ones exceed the regular ones in the text by almost one third. This indicates that the regular agglutinative form is by no means the unmarked choice and the illative has a highly variable manifestation.

Having now established that the case formation for the core set of cases in Estonian shows significant variability, let us examine how this variation is conditioned.

From the forms in Table 4, only partitive plural can be considered to some extent phonologically conditioned: due to Estonian phonotactics which requires that diphthongs can occur only in stressed syllables, the *-i-d* suffix – that creates a diphthong by being attached to the stem vowel – is allowed only in cases where the final syllable of the partitive case form is stressable (for example *kollaseid*, *aastaid* but **pesaid*, **roosaid*, see Hint 1978b; 1980, Ehala 2003 for more detailed overview of the exact phonological conditions). Although this condition prevents *-i-d* from occurring in a number of stem types, there is no phonological or morphological conditions to *-sid* suffix or stem vowel alternation for not being used universally for all Estonian nominals.

In fact such behaviour indicates that lexical conditioning might be involved. And to a large extent it is true: in Estonian, the morphological behaviour of words could not be determined from its phonological properties only (see Ehala 1997a for a detailed discussion, but also Blevins 2005 for an alternative view). Let us compare *käsi* to *pesa* and *suur* to *hein* (1). Both *käsi* and *pesa* are disyllabic and follow a CVCV pattern. Similarly *suur* and *hein* are monosyllabic and have CVVC pattern. Yet their paradigms are significantly different:

(1)

NOM	*käsi*	*pesa*	*suur*	*hein*
GEN	*käe*	*pesa*	*suure*	*heina*
PART	*kät-t*	*pesa*	*suur-t*	*heina*
ILL	*kätte*	*pessa*	*suur-de*	*heina*
GEN PL	*kät-te*	*pesa-de*	*suur-te*	*hein-te*
PART PL	*käsi*	*pesi*	*suuri*	*heinu*

As there is no way to phonologically determine what is the paradigm of a CVCV word (or in fact any word in Estonian), this information has to be lexically encoded. What follows is that the choice of a correct case allomorph (*-t* or Ø for partitive singular, *-te* or *-de* for genitive plural) is therefore also conditioned lexically. At least implicitly, this fact has been recognised by many Estonian grammars that treat the cases in (1) and in Table 4 as core forms irreducible to a single basic form of morphological derivation (see Viks 1992a, Hint 1991 or Remes 1995 for lexical conditioning of the Estonian grade alternation).

2.2.2. Segmentability

Table 5 presents the violations to segmentability in Estonian inflectional cases (shaded cells in the table). Nominative has been considered the unmarked value of the case category here, thus it is not shaded. As the table reveals, the greatest problems of segmentability manifest itself in genitive singular. As it does not have an ending, it includes two morphemes in one single morph. In most declensions, genitive could be differentiated from other case forms by various stem alternations. Yet for quite a large number of words, *tasku*, *tubli*, *maa* and *pesa* type, genitive is homonymous with some other cases, mostly with nominative, but also to illative (*tasku*) and partitive (*pesa*).

		tasku	***tütar***	***oluline***	***suur***	***käsi***	***tubli***	***maa***	***pesa***	***sepp***	***hein***	***õnnelik***
Singular	NOM	Ø	W	Ø	S	S	Ø	Ø	Ø	S	S	S
	GEN	Ø	S	E	W	W	Ø	Ø	Ø	W	W	W
	PART	*-t*	*-t*	*-t*	*-t*	*-t*	*-t*	*-d*	Ø	S	S	S
	ILL*	Ø	*-sse*	GEM	*-de*	GEM	*-sse*	RED	GEM	S	S	S
Plural	GEN	*-te*	*-de*	*-te*	*-te*	*-te*	*-de*	*-de*	*-de*	*-de*	*-te*/*-de*	WV/*-de*
	PART	*-i-d*	*-i-d*	V	V	V	*-sid*	*-i-d*	V/*-sid*	V/*-sid*	V/*-sid*	SV/*-sid*

Table 5: Violations to segmentability in Estonian core cases

The problems of segmentability are also significant in the case of short illative singular: in most of the cases it is homonymous to either genitive (*tasku* type) or partitive case which itself is formed by a stem alternation (*sepp*, *hein*, and *õnnelik* types); in some types (*oluline*, *käsi* and *pesa*) it is formed by stem consonant gemination, again a morphological process which does not involve agglutination. Only in two minor type (*suur*, *maa*) it is formed by strategies which allow segmentation into morphemes. Two types (*tütar* and *tubli*) allow only the regular long illative.

The genitive plural has its own, although weaker problems of segmentability – it is marked only for plural, not for genitive, thus the number of morphemes still exceeds here the number of morphs. Remind that nominative plural is also marked for plural only, but the plural morpheme in nominative has a different allomorph: *-d* instead of *-de* or *-te* in genitive.

If we look at Table 5 holistically, a steady decrease of segmentability can be observed from left to the right. The two leftmost types (*tasku* and *tütar*) are relatively agglutinating even in core cases (these types involve 40 % of declinable stems in Viks 1992b). The next four types (*oluline*, *suur*, *käsi*, *maa*) are somewhat less segmentable in core cases. These types account for 26 % of the stems in Viks (1992b). The last four types are the most inflectional, including 34 % of stems in Viks (1992b). Thus, it seems that there are two dominants in the Estonian declensional system – one is relatively transparent and segmentable, although with a significant share of opaque inflectional forms; and the second is a classically inflectional part that is fully inflectional for core cases.

2.2.3. Peripheral cases

The peripheral cases are presented in Table 6 (case formatives) and Table 7 (number formatives).

As Table 6 shows, the peripheral case forms concur fully to the notion of canonical agglutination: they are uniform to all Estonian nominals and they have no problems of segmentability. Thus, it can be concluded that this part of Estonian morphology is a paradigmatic case of agglutination.

The situation is somewhat more complex for number marking (see Table 7 below). Singular is unmarked which does not violate the notion of canonical agglutination as defined by Comrie (1980). The plural marking shows some violation to invariance as well as for segmentability.

Case	Singular	Plural
Inessive	*-s*	
Elative	*-st*	
Allative	*-le*	
Adessive	*-l*	
Ablative	*-lt*	
Translative	*-ks*	
Terminative	*-ni*	
Essive	*-na*	
Abessive	*-ta*	
Comitative	*-ga*	

Table 6: Peripheral case formatives in Estonian

Case	Singular	Plural			
Nominative	Ø	*-d*			
Peripheral cases		*-te-*/*-i-*	*-te-*/V-	*-de- (-te-)*	WV-/*-de-*

Table 7: Number marking in Estonian nominals

The violations for invariance are due to phonological as well as morphological and lexical conditioning. The restriction of *i*-plural to some types is due to phonotactical constraints for diphthongs that can only occur in stressed syllables. This variation is phonologically conditioned, and therefore a relatively weak violation of canonical agglutination. The *d*-plural in nominative is morphologically conditioned and as such, is a slightly stronger violation. The choice between *-te-*, *-de-* and WV- formatives depends on the declension. As the words are divided into declensions largely by their lexical properties, the violation is lexical in nature. The alternative would be to divide words as belonging to active and passive morphology (see ERELT et al. 1995). In this case, the choice of the affix is lexically conditioned only for the words belonging to passive morphology (which is still a large number in Estonian exceeding well over several thousand stems).

As for segmentability, the violations are relatively weak. The V-plural which occurs in types like *harjutus*, *suur*, *käsi*, is ambiguous whether it is formed by stem vowel alternation (GEN. SG. *harjutuse* → *harjutusi*) or agglutination (stem of PART.SG *harjutus-* + *-i*), both derivations can be argued for. The WV plural like *õnnelike* is more clearly unsegmentable, but it only forms a minor subtype amongst Estonian nominals.

The conclusion from this analysis is that as for the peripheral cases (both in singular and plural), Estonian uses agglutinative strategies of morphological formation.

2.3. Comparison of adjectives

Most adjectives can be declined freely in all cases and they fall into declination classes according to the same criteria as other declinable words. Although technically all declinable words can be subject of comparison, and the feature is sometimes playfully used; under normal conditions, the comparison applies for adjectives only.

Degree	***valge***	***oluline***	***suur***	***tubli***	***õnnelik***	***must***
Positive	Ø	Ø	Ø	Ø	Ø	Ø
Comparative	*-m*	*-m*	*-m*	*-m*	*-m*	V_1-*m*
Superlative	*-i-m*	V_1-*m*	V_1-*m*	analytic	V_1-*m*	V_2-*m*

Table 8: Comparison classes of Estonian adjectives[4]

As can be seen in Table 8, comparison is handled by both agglutinative as well as inflectional means. Positive is uniformly unmarked, comparative is formed agglutinatively by adding the comparison suffix *-m* to the genitive stem, except in one type (*must*) where it also requires stem vowel alternation *a* → *e* or *u* → *e*. Superlative is formed either agglutinatively (*valge* type) or inflectionally by stem vowel alternation and affixing the comparison suffix to the altered stem. Thus, the morpheme *-m* just indicates that the form is not a positive, but whether it is comparative or superlative, needs to be expressed by stem alternation (most of the types) or agglutinatively (*valge* type). For all types, superlative can also be formed analytically with the help of the particle *kõige* 'most' + comparative.

The comparison system parallels the declension system, having two centres: the agglutinative one (a large and productive *valge* type) and several inflectional types. There is also one exceptional type (*tubli* which only allows analytic superlative).

To summarise, the Estonian adjective comparison is agglutinative for positive and comparative, but the formation of superlative is largely inflectional and also highly variable. This contradicts the expected markedness pattern as the superlative is statistically the most infrequent of the comparison forms and is therefore expected to show more regular and uniform pattern of formation. This deviation is most clearly due to the fact that the Estonian inflectional superlative forms are artificial, introduced and disseminated by Johannes Aavik as part of his language renewal campaign in the first half of the 20th century (see Raag 1998 for an overview of Aavik's morphological planning).

3. Typological markedness in the Estonian morphology

According to Croft (2003), typological markedness is expressed by two principal means: structural coding and behavioural potential. The last can further be divided into inflectional potential and distributional potential. Inflectional potential is expressed by the number of morphological distinctions that particular grammatical category possesses. The

[4] Translation of example words: *valge* 'white', *oluline* 'important', *suur* 'large', *tubli* 'good', *õnnelik* 'happy', *must* 'black'.

syntactic criterion – distributional potential, pertains to a number of syntactic contexts in which a grammatical element can occur (Croft 2003: 95).

In order to be able to measure typological markedness, the types compared must belong to the same higher category, for example singular and plural can be compared as they belong to the category of number. If this condition is met, the principle of structural coding predicts that "the marked value of a grammatical category will be expressed by at least as many morphemes as is the unmarked value of that category" (Croft 2003: 92). The property of inflectional potential means that "if the marked value has certain number of formal distinctions in an inflectional paradigm, then the unmarked value will have at least as many formal distinctions in the same paradigm" (Croft 2003: 97). The application of these two principles is schematically illustrated in Figure 1:

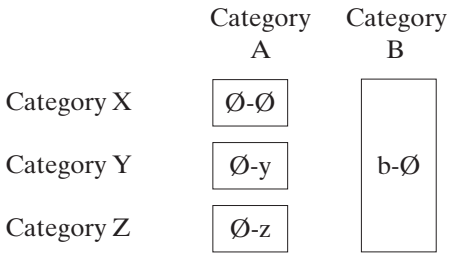

Figure 1: Manifestation of typological markedness

In Figure 1, grammatical category can be manifested either by Ø or by a morpheme which corresponds to its name (-a, -b, -x, -y, -z respectively). In this schema, Category A is unmarked according to the structural coding principle as it is expressed by fewer number of morphemes (zero) than category B (expressed by the morpheme -b). Category A has also a greater inflectional potential than B, as A allows three meanings to be expressed (X, Y, Z) whereas B allows one. Thus A is the unmarked value in this pair by both the criteria of structural coding as well as inflectional potential.

In what follows, the structural coding and inflectional potential are the criteria for assessing the typological markedness of Estonian morphological categories. As there are no universal morphological categories, only those grammatical categories will be discussed that have morphological coding in Estonian. For example the category of aspect thus remains undiscussed here as it is not sufficiently grammaticalised yet (see Metslang 2000).

3.1. Number

Typologically the markedness pattern for number is the following: singular < plural < dual < trial/paucal (Greenberg 1966). From this possible semantic space, Estonian like other Finnic languages (see Laakso 2001) distinguishes two grammatical numbers: singular and plural:

Person		Indicative and Conditional		Imperative		Quotative and Jussive
		Singular	Plural	Singular	Plural	No number and person distinctions
	1st	*-n*	*-me*	–	*-ge-m/-ke-m*	
	2nd	*-d*	*-te*	Ø	*-ge/-ke*	
	3rd	*-b*	*-vad (-id)*	–	–	

Table 9: Number marking in Estonian verbal paradigms

In verbal paradigm, person and number categories are fused into single morphemes. However, there is a problem of interpreting these suffixes. It has been argued that the 3rd person plural suffix is composed of two morphemes *-va-* and *-d* where the first marks present and the second plural, and further, that the 3rd person singular morpheme does not indicate person, but the present tense (Valgma & Remmel 1968; Vääri 1978; Viitso 2003). Hint (1978a) argues at length for treating *-b* and *-vad* as person suffixes. Uibo (1980) finds support for both analyses.

Considering structural coding, singular and plural are equally expressed by one morpheme, in imperative the singular form is not marked for number (and person) whereas the plural is expressed by a morpheme *-ge/-ke*. Quotative and jussive make no number and person distinctions. As for nouns and adjectives, singular has no morphological marker whereas plural is expressed by different means (see Table 7). Thus, in Estonian, plural is expressed by more morphemes than singular and concurs with the known crosslinguistic evidence for structural coding.

Considering inflectional potential, the picture becomes blurred: both singular and plural exhibit the same number of distinctions in all moods except imperative. In imperative, there is one form in singular (2nd person) whereas in plural, both 1st and 2nd person forms are possible. This indicates that from the perspective of inflectional potential, the plural seems to be less marked in the verbal paradigm than singular, although marginally. In nominal inflection, singular distinguishes all 14 traditional cases (including short illative). In plural all, except the short illative are possible.

3.2. Person

Markedness hierarchies for person are the following: 3 < 1 < 2 for verbal inflection, and 1, 2 < 3 for extended animacy. As already mentioned, the person indexation allows two alternative analyses for indicative present. Either all persons are marked by one morpheme as suggested by Hint (1978a):

(2)

	Singular	Plural
1st	*-n*	*-me*
2nd	*-d*	*-te*
3rd	*-b*	*-vad*

Or the alternative is that 3rd person is not marked in indicative. The morphemes *-b* and *-va-* mark present tense and *-d* marks plural. This yields to a very complex analysis where 1st and 2nd persons are not marking the present tense and plural by separate morphemes:

(3)

	Singular	Plural
1st	*-Ø-n*	*-Ø-me-Ø*
2nd	*-Ø-d*	*-Ø-te-Ø*
3rd	*-b-Ø*	*-va-Ø-d*

Historically the 3rd person markers have been developed from a suffix for deverbal nouns (LAAKSO 2001: 190) that also appears in participles, e.g. the Estonian present participle suffix *-v* as in *laulev* ('singing') is of the same origin. Thus there is some diachronic evidence that supports the analysis of 3rd person suffixes as tense and plural markers. This analysis would also mean that as for structural coding, 3rd person is unmarked just as predicted by crosslinguistic evidence. Yet the general markedness that is brought to the system by this complementary distribution of person, tense and number marking in Estonian indicative mood, certainly points to the simpler solution such as in (2).

Although (2) does not reveal the unmarked nature of 3rd person, its unmarkedness becomes apparent in the past tense indicative and in conditional mood which do not have a morphological marking for person:

(4)

	Indicative past		Conditional present	
	Singular	Plural	Singular	Plural
1st	*vaata-si-n*	*vaata-si-me*	*vaata-ksi-n*	*vaata-ksi-me*
2nd	*vaata-si-d*	*vaata-si-te*	*vaata-ksi-d*	*vaata-ksi-te*
3rd	*vaata-s*	*vaata-si-d*	*vaata-ks*	*vaata-ksi-d*

The person marking for Estonian verbs therefore concurs with the universal markedness hierarchy, treating 3rd person as unmarked while 1st and 2nd persons are marked.

The same conclusion can be reached by analysing distributional potential, according to which "if the marked value occurs in a certain number of distinct grammatical environments (construction types), then the unmarked value will also occur in at least those environments that the marked value occurs in." (CROFT 2003: 98)

The 3rd person singular form has by far the largest distribution among all the person forms. It occurs in verbs denoting the processes in nature (5a) which do not occur in other persons. It also occurs with the modal verb *tulema* 'must' (5b), (5c) and other modal constructions like (5d) as well as in constructions with partial subject (5e), (5f):

(5a) *saja-b* 'it rains'
tuiska-b 'it storms'
koida-b 'it dawns'

(5b) *Mu-l tule-b* *lahku-da.*
I-AD come-3SG leave-DINF
'I have to leave.'

(5c) *Su-l* *tule-b* *lahku-da.*
you.SG-AD come-3SG leave-DINF
'You have to leave.'

(5d) *Tei-l* *maksa-b* *selle-le mõel-da.*
you.PL-AD pay-3SG this-ALL think-DINF
'You ought to think about this.'

(5e) *Mind* *jagu-b* *kõikjale.*
I-PART spread-3SG everywhere
'I could be found everywhere.'

(5f) *Te-id* *saabu-b* *peo-le* *juurde.*
you.PL-PART arrive-3SG party-AD more
'There are more of you arriving to the party.'

As all of these occurrences are bound to 3rd person singular, it has the widest distribution among the grammatical persons and it is, thus, the least marked member of the category of number. As for the markedness hierarchy of 1st and 2nd person, it seems that there is no way to rank them in respect of each other either from the point of view of structural coding, or inflectional and distributional potential.

Considering inflectional potential, there is an apparent contradiction with universality predictions: the 3rd person makes fewer distinctions than 1st and 2nd persons. The latter have imperative forms whereas the 3rd person does not[5]. This discrepancy perhaps reflects the extended animacy hierarchy, the objects that could be given orders are by necessity more animate than the rest. But the proximity requirements are definitely important, too. And this asymmetry is certainly not crosslinguistically rare.

3.3. Mood

The number of Estonian moods is debatable. The question is whether to treat the strategies Estonian uses to express evidentiality as moods (a traditional view), or to consider evidentialis a separate grammatical category superimposed both to the voices and moods. The traditional account is shown in Table 10:

Mood	Personal	Impersonal
Indicative	Ø	*-ta-kse*, *-da-kse*, *-a-kse*
Imperative	*-ge*, *-ke*	–
Conditional	*-ks*	*-da-ks*, *-ta-ks*
Quotative	*-vat*	*-da-vat*, *-ta-vat*
Jussive	*-gu*, *-ku*	*-da-gu*, *-ta-gu*

Table 10: The traditional moods in Estonian

[5] There are alternative analyses available. According to Erelt & Metslang (2004), 3rd person imperative forms are emerging from optative constructions. Still, the fact that 3rd person imperative is a late development indicates that it is less universal than the other persons in imperative.

According to the alternative account (Rätsep 1971), Estonian has the category of evidentialis which has two values: directalis and indirectalis. Under this interpretation the system would look like in Table 11:

Mood	Directalis	Indirectalis
Indicative	Ø	*-vat*
Imperative	*-ge*, *-ke*	*-gu*, *-ku*
Conditional	*-ks*	---

Table 11: The system of moods according to Rätsep (1971)

In Table 11, I have omitted impersonal to get the better overview of the moods. Thus, Table 11 presents the same data that is presented in the column *Personal* in Table 10. This comparison reveals that from the typological point of view, Rätsep's (1971) system appears more natural than the traditional account. The reason is that it enables us to better generalize the markedness patterns amongst the five categories under discussion.

First, according to the principle of structural markedness, directalis is clearly less marked than indirectalis as the latter has got more morphemes than the directalis. A slight problem is that the indirectalis does not have a clear exponent throughout the paradigm, as does the impersonal, i.e there is no affix or a uniform stem alternation pattern.

From the point of view of inflectional potential, directalis appears as the unmarked member, allowing three distinctions in the paradigm whereas indirectalis allows only two. Without treating the indirectal moods under separate grammatical category it would thus have been harder to establish the markedness hierarchy of these five categories. Even if one continues to use the traditional account, the analysis above allows us to show the markedness patterns among them: indicative < imperative; conditional < quotative; jussive.

3.4. Voice

Estonian has two voices: personal and impersonal. There is no morpheme indicating the personal mood, impersonal is indicated by *-ta*, (*-da*, *-a*, see Table 10). Thus, by the criterion of structural markedness, impersonal is the marked member of this opposition. As for the inflectional potential, in personal mood all three persons in singular and plural are distinguished while the impersonal mood obviously does not express person, or indeed the number. In addition to this, impersonal also lacks imperative forms, but for the rest of the moods it has the same inflectional potential as personal. In expressing tense, there are no differences in inflectional potential between personal and impersonal voices. By both criteria, personal is the unmarked and impersonal the marked member of the opposition.

3.5. Tense

In traditional grammars of Estonian, four tenses are distinguished (see Table 12). Although there are signs of the emergence of grammatical means of expressing future and

progressive (see Metslang & Tommola 1995, Metslang 2000), I have left them out of the table as they are far from being established yet and use only analytic means of expression.

Mood	Present	Past	Perfect	Past Perfect
Indicative	Ø	*-si-, -s*	*on* + *-nud*	*oli* + *-nud*
Conditional	Ø	*-nu-, oleks* + *-nud*		
Quotative	Ø	*-nu-, olevat* + *-nud*		
Jussive	Ø	*olgu* + *-nud*		
Imperative	Ø			

Table 12: Estonian tenses

As seen above, the tense system in Estonian clearly follows the universal markedness pattern. Applying the structural markedness criteria, the complexity of marking increases from left to right in Table 12: present is unmarked, past uses agglutinative means in indicative and analytic means in other moods, perfect and past perfect only use analytic means of expression.

From the point of view of inflectional potential, present is clearly the least marked member of the set, allowing the largest number of distinctions, then comes past and then the composed tenses. In addition to this "the distinction between morphological and syntactic expression of a relevant construction can be taken as evidence in favor of the greater inflectional potential of the form taking the inflection, because the form taking the periphrastic elements can be considered to be inflectionally defective" (Croft 2003: 97). Thus the markedness hierarchy for tense is: present < past < perfect < past perfect.

3.6. Case

The case system was discussed in detail in the first part of this paper, and I will not repeat the data from Tables 4–6, but rather try to make a summary in order to be able to establish the markedness hierarchy for Estonian cases (see Table 13). For this, the notion of inflectional potential should be refined. According to Greenberg (1966: 29): "greater allomorphy or morphological irregularity of any type, not just suppletion, is evidence for the greater inflectional potential of the category in question". Thus, the hierarchy of inflectional potential is as follows: suppletive forms < inflectional forms < agglutinative forms < analytic forms.

As the table reveals, the ordering of cases, traditionally used in Estonian grammars (and also in Table 13) corresponds well to the markedness hierarchy in the Estonian case system: Nominative and genitive are structurally the least marked, and it is hard to decide which one has the greater inflectional potential – if the defectiveness of nominative form is taken as a kind of suppletiveness, it is the least marked. However, if we consider that the genitive and partitive serve as the base forms for other cases, this may seem to afford them greater inflectional potential. Partitive could be considered more marked as genitive, as it has an affix, at least in some types, illative yet more marked as it has both inflectional as well as agglutinative formation. The rest of the cases are all agglutinative which means less

Case	Structural markedness	Inflectional potential	
Nominative	Ø	defective	agreement
Genitive	Ø	inflectional	agreement
Partitive	Ø or *-t*	inflectional	agreement
Illative	Ø and *-sse*	inflectional, agglutinative	agreement
Inessive	*-s*	agglutinative	agreement
Elative	*-st*	agglutinative	agreement
Allative	*-le*	agglutinative	agreement
Adessive	*-l*	agglutinative	agreement
Ablative	*-lt*	agglutinative	agreement
Translative	*-ks*	agglutinative	agreement
Terminative	*-ni*	agglutinative	no agreement
Essive	*-na*	agglutinative	no agreement
Abessive	*-ta*	agglutinative	no agreement
Comitative	*-ga*	agglutinative	no agreement

Table 13: The markedness in Estonian case system

potential, and the last criterion deeming the last four cases as the most marked is their inability to trigger agreement which all other cases do.

4. Conclusion

To summarise the markedness in Estonian morphology I would follow the principles of inflectional potential – the constructions with greater inflectional potential are relatively less marked than the ones with less inflectional potential. The notion of inflectional potential is in turn related to morphological processes so that the constructions formed by inflectional means have higher inflectional potential than the ones which have been formed agglutinatively or analytically (Greenberg 1966, Croft 2003). From this follows that the forms that are more grammaticalised are also less marked than the ones that are less grammaticalised.

Based on the above analysis, three markedness hierarchies could be established: verbal, nominal and adjectival. They are presented in (6):

(6) **verbal markedness hierarchy**: number; person < mood < voice < tense
nominal markedness hierarchy: core cases < number < peripheral cases
adjectival markedness hierarchy: positive < superlative < comparative

If we look at morphological strategies that are in use in Estonian then most of its verbal morphology is in accordance with the principles of canonical agglutination. Inflectional processes can only be found in expression of person and number and mood. Other grammatical categories are weakly grammaticalised (Estonian lacks aspect system and has a comparatively small core tense system). Thus, the verbal morphology of Estonian could definitely be characterized as agglutinative and to a certain extent also analytical.

The nominal morphology is more grammaticalised, the core cases and number are largely expressed by inflectional means while the peripheral cases are uniformly agglutinative. Furthermore, one dominant declension group (*pesa*, *sepp*, *hein* and *õnnelik*-types) uses inflectional strategies productively for core case forms, which means than in this part of its grammar Estonian has become productively inflectional.

The Estonian system of comparison clearly goes against the universal markedness patterns, using inflectional means for forming the conceptually the most complex category of superlative. Apart from this, Estonian comparison is agglutinative.

These hierarchies allow us to shed some light on the way Estonian conceptualises the world. The relatively grammaticalised moods, particularly the ones expressing evidentiality and a relatively weakly grammaticalised tense and missing aspect characterises Estonian verbal morphology as conversationally rather than temporarily organised. The fact that verbal morphology is more agglutinative than nominal and adjectival morphology also shows that Estonian grammar is not action-oriented, but rather object-oriented. The presence of an elaborated case system with highly grammaticalised core cases gives further evidence for the importance given to objects and relations between objects over the actions.

Abbreviations

AD	adessive	PART	partitive
ALL	allative	PL	plural
dINF	*da*-infinitive	RED	reduplication
E	stem end alternation	S	strong grade
GEM	gemination	SG	singular
GEN	genitive	V	stem vowel alternation
ILL	illative	W	weak grade
NOM	nominative	1, 2, 3	first, second, third person

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