

ESTONIAN TRANSITIVE VERBS AND OBJECT CASE

Anne Tamm
University of Florence

Proceedings of the LFG06 Conference
Universität Konstanz
Miriam Butt and Tracy Holloway King (Editors)

2006
CSLI Publications
<http://csli-publications.stanford.edu/>

Abstract

This article discusses the nature of Estonian aspect and case, proposing an analysis of Estonian verbal aspect, aspectual case, and clausal aspect. The focus is on the interaction of transitive telic verbs (*write*, *win*) and aspectual case at the level of the functional structure. The main discussion concerns the relationships between aspect and the object case alternation. The data set comprises Estonian transitive verbs with variable and invariant aspect and shows that clausal aspect ultimately depends on the object case. The objects of Estonian transitive verbs in active affirmative indicative clauses are marked with the partitive or the total case; the latter is also known as the accusative and the morphological genitive or nominative. The article presents a unification-based approach in LFG: the aspectual features of verbs and case are unified in the functional structure. The lexical entries for transitive verbs are provided with valued or unvalued aspectual features in the lexicon. If the verb fully determines sentential aspect, then the aspectual feature is valued in the functional specifications of the lexical entry of the verb; this is realized in the form of defining equations. If the aspect of the verb is variable, the entry's functional specifications have the form of existential constraints. As sentential aspect is fully determined by the total case, the functional specifications of the lexical entry of the total case are in the form of defining equations. The general well-formedness conditions on functional structures secure the sensitivity of aspectual case to verb classification.

1. Introduction *

Understanding or representing the Estonian aspect in any functional or formal grammar is complicated, since the application of previously used terminology does not apply smoothly to the phenomena. The main problem is that aspectual terminology was developed to explain and represent verbal aspectual phenomena (e.g. Dahl 1985, Comrie 1976, the Slavic, or Hungarian tradition, Kiefer s.a.) or compositional and quantification-related phenomena (Krifka 1992, Tenny 1994, Verkuyl 1993). The article discusses data where neither verbal aspectual nor compositional approaches lend themselves easily to a straightforward account of the Estonian aspectual object case alternation. Verbal aspect does not determine the aspect of the clause as in the Slavic languages, nevertheless, transitive clauses must be specified for aspect as Slavic clauses are; the quantification of the inner argument does not have the aspectual effect familiar from English or Dutch; however, Estonian clausal aspect is not entirely determined by the verb. Rather, the alternation of the partitive (1) and total (accusative, morphologically genitive or nominative) (2) object cases corresponds to aspectual oppositions.

- (1) *Mari kirjutas raamatut.*
M.nom write.3.sg.past book.part
'Mari was writing a/the book.'
- (2) *Mari kirjutas raamatu.*
M.nom write.3.sg.past book.tot
'Mari wrote a book.'

Typological works do not consider Estonian as a language with fully grammaticalized aspect (Metslang (2001:444), Metslang and Tommola (1995: 300-301)). Grammatical aspect in Estonian has not developed into a consistent grammatical category, but it emerges in the object case alternation as illustrated above. The article proposes a way to understand and represent the object case alternation for some classes of transitive verbs: the telic verb classes of the types *write* (an accomplishment verb) and *win* (an achievement verb). As opposed to the type of telic verbs such as *write*, telic achievement verbs of the *win* type do not have aspectual case alternation (3). Although achievement verbs are traditionally considered telic, the partitive object case marking reveals that the telicity type at hand could be different from the typical cases of telicity, being perhaps reduced.

- (3) *Itaalia võitis Saksamaad jalgpallis 2:0.*
Italy won Germany.part in football 2:0
'Italy won Germany in football with the result 2:0.'

* I acknowledge the support of OTKA K 60595, and I thank the participants of the LFG06 Conference for many valuable discussions. I am grateful for the comments of the reviewer, which have encouraged me to address many unclear issues; the remaining errors are mine.

The verb classification tries to accommodate the systematic compatibility of verb classes with aspectual object case marking patterns. The questions are presented as follows: Section 2 discusses the aspectual object cases and their place in the Estonian case system; Section 3 shows that the object case alternation does not reflect oppositions in specificity, definiteness or quantification. Section 4 opens the discussion of the aspectual hypotheses with a review of the phenomena from the outer aspect (perfectivity-imperfectivity) perspective. While the correlations are not exact, the alternation in aspectual case marking is in core cases part of other general two-way case marking strategies employed in Estonian grammar. Section 5 addresses the inner aspect relatedness of the object case alternation. Section 6 views the relatedness of objects and aspect in comparison to other lexicalist approaches and points out that the Estonian object case phenomena cannot be accounted for by, for instance, thematic role based approaches. Section 7 works a proposal to improve some problems of earlier approaches and sketches a possible analysis in LFG, and Section 8 is a conclusion.

2. Aspectual object cases and their place in the case system

Aspectual meanings have developed as part of a grammatical marking system where nominal case marking is a general strategy of encoding grammatical, lexical, semantic, and pragmatic meanings. More specifically, in Estonian, grammatical functions are distinguished by case marking; also mood categories, such as imperative, influence the case marking of the core grammatical functions; thematic roles determine the case marking of some arguments; the semantic properties of the NP determine the case marking; and pragmatic information determines partly the case marking of plural count and mass singular subject NPs. The case system of Estonian comprises 14 cases (Erelt et al 1997) (4).

(4)

Nominative	book	raamat
Genitive	of a book	raamatu
Partitive	(of) a book	raamatut
Illative	into the book	raamatusse
Inessive	in a book	raamatus
Elative	from (inside) a book	raamatust
Allative	onto a book	raamatule
Adessive	on a book	raamatul
Ablative	from the book	raamatult
Translative	in(to), as a book	raamatuks
Terminative	until a book	raamatuni
Essive as a book	as a book	raamatuna
Abessive	without a book	raamatuta
Comitative	with a book	raamatuga

Case is a strategy of marking nominal entities, including participles and infinitives. Case marking is widely applied historically and in the present-day Estonian as a strategy of differentiating oppositions in several, mainly mood, categories. The verb form and the argument NP case encoding differ from the verb's and its argument's morphological form in active affirmative indicative sentences. For instance, total objects in imperative and indicative sentences are differentiated by nominative and total case marking respectively. The case alternations appear between other cases than in active affirmative indicative sentences; in the impersonal category, the alternation is between nominative and partitive, whereas in the imperative, the object is either nominative or partitive. In the evidential mood, the personal present participle is marked with partitive, and in negation, the object and subject may be partitive (see Nemvalts (1996), Tamm (2004a) and to appear for further details). Explaining case phenomena, reference to selection strategies based on case or grammatical function hierarchies is a widespread practice in works dealing with Finnic (Maling 1993, Ackerman and Moore 2001). For instance, there is a tendency of the nominative case marking of the highest GF of the sentence (Maling 1993). In sum, case is a much-employed grammatical device in Estonian as in the Finno-Ugric languages in general.

One of the case alternations that are related to sentential semantics and function is the aspectual object case marking. Differently from the case opposition phenomena in the mood categories, the range of possibilities depends on the aspectual lexical semantics of the verbs. Object NPs can be marked either with the morphological *partitive* or with the *total case* (also referred to as the accusative case). The latter is morphologically realized as the genitive, if singular, or the nominative, if plural, a numeral, a certain quantizer and also in some infinitival constructions, imperatives, and impersonal sentences. A note on current terminological debates is in order. Firstly, there are proposals to change the traditional term “total object” to “accusative object” (Pusztay 1994, Hiietam 2003). “Total object” (*totaalobjekt, täissihitis*) is the most frequently used term in Estonian linguistics for the NP in object function that is case-marked with the morphological genitive or nominative. In international sources, the total case is frequently referred to as “accusative”, since it is one of the object cases, and establishing an analogy with Finnish, where personal pronouns have a separate morphological accusative. However, the total-accusative case cannot be considered as “the” object case since many objects are marked with other cases as mentioned above. In addition, the total case marks measure adverbials on partly similar semantic grounds with object marking. In semantics and functional linguistics oriented writings, “total” is a term that metaphorically conveys the “totally” bounded or finished nature of the transitive clause.

Secondly, the term “partitive” covers a variety of concepts in linguistics. Partitive is used as the traditional name for a morphological case, also, as the name of the inherent Case in GB theory associated with indefiniteness, and as a semantic notion associated with partial interpretation. Relating the object case alternation primarily to aspect and not to configurational positions, this article defines it as semantic alternation and the cases involved as aspectual semantic cases. Semantic case is here understood as in Butt and King (2005) (cf. also Butt 2006), that is, a type of case about which regular semantic generalizations can be made and that has the following characteristics: it is predictable via the formulation of generalizations across predicates and constructions (here, aspectual generalizations) and subject to syntactic restrictions, such as restrictions on grammatical functions of the NPs where the case can appear (appearing, in this case, only on measure adverbials, subjects, or objects). This article regards the Estonian partitive as a morphological case that changes the semantic interpretation of a predicate so that it differs from the semantic interpretation of the predicate in a sentence with the total (accusative) object.

As opposed to the term “total”, the term “partial”, used in Estonian grammars, does not transparently cover the semantic content of the partitive case. The partitive marked NP’s denotation generally cannot be understood as “part of” the denotation of the object NP’s referent. Events described in clauses with “partial” objects do not necessarily reflect any “partial” progress of the event either (see examples (5) and (9)). Frequently, the partitive marked object noun phrase has no referent. Therefore, nothing related to parts can serve as a cover term for the “partial” object phenomena, and the morphological form related term “partitive” is preferred to the semantically (wrongly) suggestive “partial”.

Not only objects but also subjects and measure adverbials have “split” case-marking. For subjects, the alternation is between the morphological partitive versus nominative; the measure adverbials have a three-way split into the total case and the morphological partitive versus nominative. The general pattern of aspectually relevant object, adverbial, and subject case-marking in Estonian is presented in Table 1. After this overview, the article confines the discussion to objects of affirmative indicative active sentences that are singular count nouns.

Table 1. Subject, object, and durative adverbial case-marking in Estonian

Subject cases	Object cases	Adverbial cases
<i>Nominative</i> <i>Partitive</i> (alternation in plural count and singular mass nouns only (in the “existential sentences”) and in existence negation)	<i>Genitive</i> (total) (singular) <i>Nominative</i> (total) (plural, numerals, etc) <i>Partitive</i> (singular and plural, in most negative sentences)	<i>Genitive</i> (total) (singular) <i>Nominative</i> (total) (plural, singular for numerals and some quantizers, etc) <i>Partitive</i> (plural, and singular of mass NPs and in some data on negation)

The Estonian aspectual case marking is a result of combining a grammar system imbued with case-marking practices of oppositions with an aspectual verb classification that is fairly comparable to better-studied languages. The following section, however, considers first the arguments for not choosing for an NP related account of the object case alternation.

3. Case alternation and NP relatedness

This section shows that the object case alternation of singular count noun objects of affirmative indicative active sentences reflects oppositions that are not primarily oppositions of specificity, definiteness or quantification.

In terms of a possible “definiteness hypothesis”, the total case marks definite NPs, and the partitive marks indefinite NPs. The strongest arguments for the accusative-definiteness link in support of this hypothesis can be found in Hiietam (2003). Other Estonian works that discuss the NP properties of the object case (Rajandi and Metslang 1979) and earlier relevant works on the NP-related case in Finnish, such as de Hoop (1993) or Belletti (1988), include instances of plural and mass partitive NPs, which are rather an exception than a rule (cf. Kiparsky 2001, 1998).

The problem is that the “definiteness hypothesis” covers some frequent but not all instances of the total case phenomenon and does not cover adequately the partitive case either. The so-called “partitive verbs” in Estonian grammars and previous works on verbs and object case (Erelt et al 1993, Kont 1963, Tauli 1968, 1983, Metslang 2001, Klaas 1996, 1999) are not verbs that have indefinite objects (5).

- (5) *Jaan usub/usaldab/näeb/laseb presidenti.*
 J.nom believe/trust/see/shoot.3.sg president.part
 ‘John believes/trusts/sees/shoots at the president.’

The object NP (“president”) is marked with the partitive, and the partitive marked object, “president,” is not indefinite. Further, there is a large class of verbs, creation verbs, in sentences with typically indefinite object NP referents that nevertheless occur with total case-marking. Some verbs regularly allow for variation in their aspectual behavior (see the tests in Section 5), demonstrated in the following examples with the verb *kirjutama* ‘write’ (1) and (2), repeated here as (6) and (7); however, relating the alternation and the total case marking to definiteness is, considering the creation verb, which typically brings new referents to discourse, not plausible.

- (6) *Mari kirjutas raamatut.*
 M.nom write.3.sg.past book.part
 ‘Mari was writing a/the book.’
 (7) *Mari kirjutas raamatu.*
 M.nom write.3.sg.past book.tot
 ‘Mari wrote a book.’

Moreover, there are no verbs that would give rise to regular minimal pairs on the basis of opposite object case alternation that would confirm the definiteness hypothesis. In some cases, the opposite can be true. For instance, the object case alternation with the verb *leidma* ‘find’ in (8) and (9) provides negative evidence for the “definiteness hypothesis”. The data bear resemblance to the Finnish and Scottish Gaelic data (Kiparsky 1998, Ramchand 1997). In a sentence with the total object, such as *leidsin võtme* ‘I found a key’ the total object NP “key” is new in the discourse, in the sentence *leidsin võtit korduvalt* ‘I found the key several times’ the partitive marked NP with “key” is definite (or specific).

- (8) *Leidsin võtme.*
 Find.past.1.sg key.tot
 ‘I found a/some key.’
 (9) *Leidsin võtit korduvalt.*
 Find.past.1.sg key.part repeatedly
 ‘I found the key several times.’

Therefore, the case alternation cannot be related to the alternation of indefinite-definite features of the respective NPs; the definiteness or indefiniteness and case cannot be related via the discourse requirements of the verbs either. The definiteness hypothesis, which assumes a link between the feature of definiteness and the total object case or a link between indefiniteness and the partitive object case, does not find sufficient support from the data.

Neither can the quantification of the object be associated with the case alternation. Since the quantification of the object in the sentences (6) and (7) or (8) and (9) remains constant while the case alternates, also the quantification of the NP and case are not related.

4. Introducing the aspectual hypotheses and outer aspect

This section opens the discussion of the aspectual hypotheses with a review of the phenomena from the outer aspect (perfectivity versus imperfectivity) perspective and shows that while the correlations are not exact, the alternation in aspectual case marking is in core cases part of other general two-way case marking strategies employed in Estonian grammar.

The existence of clearly aspectual (event structural) verb classes and their typical occurrence with either total or partitive case-marking suggests that even if there is a tendency of total-definite and partitive-indefinite correlation, an aspect-related hypothesis plausibly covers more data than the definiteness hypothesis and related NP based hypotheses. An aspectual hypothesis is also the hypothesis that has found more followers in discussions of Finnish aspectual case alternation (e.g., Vainikka and Maling 1996, Nelson 1998, 2003, Kiparsky 1998, 2001). Frequent discussion around relating Estonian aspectual phenomena to the Russian aspectual terminology (Metslang and Tammola 1995, Rätsep 1957, Pihlak 1982) shows that Estonian aspectual phenomena are at least in some respects comparable to the Slavic ones. Also, for instance, in an early generative Estonian grammar by Harms (1962:131) discusses under “‘Aspectual’ Partitive Object” examples that are clearly similar to the Russian secondary imperfective, such as *ma võtan raamatut ära* ‘I am taking the book away’ with the completive particle *ära* (approximately meaning ‘up, away, done, completed’) and the partitive object.

Aspect is a phenomenon that is discussed at different levels of description and phenomena (Verkuyl 1993, Smith 1991). This section discusses the “outer aspect”, “perfectivity”, or grammatical aspectual hypothesis. The hypothesis may be worded as follows: case alternation and the viewpoint aspect are related. More specifically, the partitive case marking corresponds to the imperfective viewpoint aspect and the total case marking reflects the perfective viewpoint aspect. The following examples demonstrate a test that indicates whether the aspect is inside or outside the described event by checking the possibility of temporal overlap or sequencing. If two sentences receive an interpretation of temporal sequencing, the first sentence is perfective. According to this test of perfectivity, the sentence with the total object (10) is a perfective sentence, since starting work at the university is interpreted by having started temporally after the event of writing her book. Inserting “...and then ...” between the sentences is possible and felicitous in case of the perfective sentence.

- (10) *Mari kirjutas raamatu. Ta läks ülikooli tööle.*
 M.nom write.3.sg.past book.tot she went to work at the university
 ‘Mari wrote a book. She went to work at the university.’

On the contrary, sentences that are imperfective do not allow the temporal sequencing. According to this test of perfectivity, the sentence with the total object (11) is an imperfective sentence, since starting work at the university is not interpreted by having started temporally after the event of writing her book; instead, the events have a temporal overlap. Inserting “...and then ...” between the sentences is anomalous.

- (11) *Mari kirjutas raamatut. Ta läks ülikooli tööle.*
 M.nom write.3.sg.past book.part She went to work at the university
 ‘Mari was writing a/the book. She went to work at the university.’

Evidence from (10) and (11) suggests that perfectivity determines the total case marking of the object NPs and imperfectivity determines the partitive marking. However, there are instances that can be considered as counterevidence: partitive plural NPs (not discussed here), several event verbs, such as some psych-verbs, some inchoative verbs and degree achievement verbs. The temporal sequencing test shows that, despite the partitive case marking of the objects, is sentences with several event verbs have perfective aspect, such as the verbs *alustama*, *algama* ‘start, begin’, *solvama* ‘offend’, *võitma* ‘win’, *rikkuma* ‘ruin’, *ehmatama* ‘frighten’ (12).

- (12) *Mari ehmatas Jürit/#Jüri. Kuuldus karje.*
 M.nom frighten.3.sg.past George.part/#gen was-heard a scream
 ‘Mari frightened George.’ (OK: And then a scream could be heard.)

The test shows that perfectivity appears with degree achievement verbs, with partitive object marking (13).

- (13) *Firma laiendas (kahe tunniga) teed. Algas töö.*
 Firm.nom widen.3.sg.past in two hours road.part The work started.
 ‘The firm widened the road (in two hours).’ (in the sense of somewhat, to some extent)
 (OK: And then, the work started.)

Even if the effect of the test is weaker than with total objects, in conclusion, evidence from partitive objects in perfective sentences suggests that the object case alternation cannot be related to the perfectivity-imperfectivity features despite strong correlations. Therefore, another sentential aspectual hypothesis, the “resultativity hypothesis”, is reviewed next. The resultativity hypothesis may be worded as follows: Case marking of objects reflects whether or not the sentence describes a result; partitive case marking corresponds to the irresultative aspectual interpretation and the total case marking corresponds to the resultative aspectual interpretation. A suitable test contains reference to a result state that does not change. However, the partitive case marking does not correspond to the irresultative aspectual interpretation as sentence with a partitive object (14) describes a clear result or outcome, specified in the sentence (as the result of the game, 2:0).

- (14) *Itaalia võitis Saksamaad jalgpallis 2:0.*
 Italy won Germany.part in football 2:0
 ‘Italy won Germany in football with the result 2:0.’

In sum, case alternation cannot be related to the resultativity features and the notion of the result state. Therefore, the third possible aspect-related hypothesis, the “boundedness hypothesis”, is reviewed next. The boundedness hypothesis may be worded as follows: Case marking of objects reflects whether or not the sentence contains linguistic means to refer to a boundary, boundedness in a wider sense, either aspectual or NP-related; partitive case marking corresponds to the non-bounded interpretation and the total case marking corresponds to the bounded interpretation. However, phrases that bound the situation do not appear only in sentences with total objects. For instance, sentence (15) has a partitive object and a terminative phrase that serves as the bounder of the situation.

- (15) *Mari saatis lauljat ukсени.*
 M.nom accompany.3.sg.past singer.part door.termin
 ‘Mari accompanied the singer until the door, Mari saw the singer to the door.’
 (16) *Mari solvas Toomast südamepõhjani.*
 M.nom insult.3.sg.past Thomas.part bottom-of-the-heart.terminative
 ‘Mary insulted Thomas deeply (to the bottom of his heart).’

Since partitive objects may be in sentences with situation bounders, case alternation cannot be related to a simple idea of boundedness of the situation. The outer aspect hypothesis must combine with a more lexicon related hypothesis in order to explain the data. Therefore, the following section 5 narrows the aspectual domain to inner aspect and returns to issues of outer aspect in the section that follows Section 5.

5. Inner aspect and case

This section addresses the inner aspect relatedness of the object case alternation. As previously mentioned, in the Estonian examples with case alternation, the quantification of the object NP does not contribute a significant feature in the aspectual composition of the sentence, as it is the case with English. The results of the aspectual tests with durative and time frame adverbials demonstrate that the aspectual effect of the Estonian partitive on the singular quantized NP object is comparable to the aspectual effect of the English plural (19). This rather points to the relation between the total case and the terms delimitedness (Tenny 1994), telicity (Krifka 1992), plus terminativity (Verkuyl 1993) or boundedness (Kiparsky 1998) and the relation between total case and the terms non-delimitedness, atelicity, minus terminativity or non-boundedness.

(17) Mary wrote the book in a year.

(18) *Mari kirjutas raamatu ühe aastaga.*
M.nom write.3.sg.past book.tot one.gen year.comitative
'Mari wrote a/the book in a year.'

(19) Mary wrote books for years.

(20) *Mari kirjutas raamatut terve aasta.*
M.nom write.3.sg.past book.part whole.tot year.tot
'Mari was writing a/the book for whole a year.'

While sentence (20) with a partitive object is atelic, sentence (18) with the total object is telic according to the results of standard telicity tests. Therefore, the "telicity hypothesis" is checked next. The inner aspectual "telicity" hypotheses may be divided in two in this section, the endpoint-related and the quantization-related ones. First the endpoint-related hypothesis is reviewed: predicates with an endpoint have a total object; predicates without an endpoint have a partitive object. However, many of the examples in section 4 show that the presence of a vague notion of an endpoint, or a boundary, which can be associated with the properties of the predicates, complements, measure phrases or adjuncts does not correlate with the total object case marking. Therefore, the quantization-related telicity hypothesis is addressed; it can be divided in two: the plus-principle (following the line of thought in Verkuyl 1993, Kiparsky 1998) and incremental-theme (following Krifka 1992) ones.

The plus-principle hypothesis might be as follows: object case alternation depends on the value of the T feature; the +T predicates have total objects, -T predicates have partitive objects. Several accounts of aspect view a sentence's aspectual properties as being determined by more components in a sentence than the verb alone: for instance, direct objects and their corresponding NP's quantificational character. A closer look reveals some challenging contrasts between the Germanic and Finnic languages. Verkuyl's two main principles of modeling aspect, the so-called Plus Principle and the assumption of aspectual phenomena at two syntactic levels are not directly helpful for modeling Estonian case and aspect matters. First, the aspect of a verb-argument complex cannot be composed on the basis of the verb's (temporal) feature and the (atemporal) quantificational properties of the argument as envisaged by Verkuyl. The examples (1) and (2) above show that the expected variation in the aspectual value of the sentence is not paralleled by the difference in the object NP properties: the quantification of the object NP *raamatu(t)* 'book.tot/part' remains constant. Instead, it is the partitive and total case-marking that correlates with the aspectual oppositions in these examples. The issue of composition is more complicated since the prediction of most theories is that sentences with bare plural nouns are not quantized, they are unbounded. This prediction is not borne out, since sentence (21) can have a quantized, bounded, interpretation regardless of the bare plural (partitive-marked) object.

(21) *Mari kirjutas raamatuid.*
M.nom write.3.sg.past book.part
'Mari did some book-writing.'

Therefore, the reason for why the omission of an object leaves an aspectually underspecified sentence (e.g., *Kirjuta!* ‘Write!’), which may be telic or atelic, is not the lack of the information about the quantization of the object, but the lack of evidence about the exact aspect, which would be obtained from object case.

The second telicity hypothesis is discussed next. It may be worded as follows: sentences denoting quantized events have total objects; sentences denoting cumulative events have partitive objects. The quantization telicity hypothesis is divided in two in literature. The more semantics based approaches formalize the idea that the quantized nature of the predicate is determined by the quantized nature of the incremental theme (Krifka 1992) and that leads to a possible formulation of the hypothesis: the total objects are objects of predicates that have quantized incremental themes. Kiparsky (1998) has pointed out that not only verbs with incremental themes have accusative objects in Finnish. To a lesser extent, the claim is true for Estonian. Taking a more general idea of a relation between event quantization and total case marking as the basis for the hypothesis, another problem occurs. Namely, Depraetere (1995) distinguishes two types of aspectual oppositions, those of boundedness and telicity, which are not distinguished in works following Krifka (1992). In sentence (22), the event can be classified as telic and quantized via the quantized path, one kilometre; however, the object of the sentence is partitive.

- (22) *Takso* *sõidutas* *Peetrit* *ühe* *kilomeetri.*
 Taxi.nom drive.3.sg.past Peeter.part one.tot kilometer.tot
 ‘The taxi drove Peeter for one kilometer.’

The total case appears on the adverbial, or it appears on the adverbial and the object with a change in the aspectual meaning (see Tamm 2006 for a discussion). The data shows that the telicity or quantization of the predicate does not correlate with the total object case marking, since sentence (22) is telic, but the object is partitive.

In the account of Kiparsky (1998), the role of the quantification of the objects is diminished and the verb classification is more fine-grained. Kiparsky establishes a direct link between the VP-boundedness (the term is based on non-homogeneity) and object case alternation of singular count NP objects. While the interaction between verbal aspect and clausal aspect cannot be related to the quantificational properties of the object NP, the event quantification itself and the case are related. However, the crucial differences between Estonian and Finnish, mainly in verb classification concerning the case marking of stative verbs, aspectual particles (Tamm 2004b), and predicate complexes, suggest that the account of Estonian data must be formulated differently (see Tamm 2004a). For instance, Estonian is different from Finnish, as it does not allow telic (accusative) in progressive constructions with telic verbs (23) while Finnish does (Sulkala 1996).

- (23)**Olen* *pileti* *ostmas.*
 be.1.sg ticket.tot buy.mas-infinitive
 Meaning ‘I am buying a ticket.’

Moreover, Estonian aspectual bounding (perfective) particle (Tamm 2004b) appears with the total object and the verb (24) (the data is from Metslang 2001). This particle diverges from the particles that have a strong argument structural link as, for instance, English particles, and have a different semantics and syntax. In this case, the particle combines with an atelic verb that appears only with partitive case (25).

- (24) *Ta* *suudles* *tüdruku* *ära.*
 s/he kiss.3sgpst girl.tot particle
 ‘S/he did the kissing of a girl.’
 (25) *Ta* *suudles* *tüdrukut/*tüdruku.*
 s/he kiss.3sgpst girl.part/*tot
 ‘S/he kissed the girl.’

The data with particles suggest that an account of the aspectual composition of Estonian aspectual system and object case marking needs to accommodate additional elements compared to Finnish (Kiparsky 1998). Aspectual verb classes do exist in Estonian according to tests that do not involve any case alternation (Tamm 2003a), while the correspondence of the telicity of the predicate and the total object case is not absolute.

6. Relatedness of objects and aspect in other lexicalist approaches

This section views the relatedness of objects and aspect in comparison to other lexicalist approaches and points out that the Estonian object case phenomena cannot be accounted for by, for instance, thematic role based approaches. The more syntactic approaches may allow the following formulation of their hypothesis on the Estonian object case: total object is an affected object, and the total case marks the event measurer, which must be an internal argument. Tenny (1994) claims that universal principles of mapping between the lexicon and syntactic argument structure are governed by aspectual properties. More specifically, Tenny posits a link between the presence of a direct object (direct internal argument) and the expression of certain aspectual properties such as “delimitedness” or “measuring out of events”. At first sight, this claim seems to be confirmed by Estonian data: objects and aspect are clearly related. However, a closer look reveals that Tenny’s widely accepted aspectual interface hypothesis is too strong. Also, many of her formulations about the relationships between direct internal arguments (in LFG, objects) “delimitedness”, “measuring out”, and “internal change or movement” are not clear in view of the Estonian phenomena. Firstly, there are examples without any direct internal argument that, contrary to expectations, are compatible with Tenny’s criteria for delimitedness and measuring out (*tutvuma* ‘get acquainted’). Secondly, the relations between delimitedness, object case, verbs, and particles present a wider array of data than Tenny’s theory can capture. For instance, there are sentences with verbs with an experiencer, and an agent or theme argument. The theme, not the experiencer argument is realized as the (total) object, while the experiencer undergoes an internal change and should, therefore, provide the measure for the event. A couple of examples are *andestama* ‘forgive’ and *unustama* ‘forget’ (26).

- (26) *Mari unustas oma sõbra.*
 M.nom forget.3sg.past his/her friend.tot
 ‘Mari forgot her friend.’

The total (accusative) objects may be non-measuring arguments that do not delimit the situation, as in (27) and (28) with verbs such as *andma* ‘give’ or *lükkama* ‘push’.

- (27) *Andsin Marile raamatu.*
 Give.1.sg.past to Mari. book.tot
 ‘I gave a book to Mary.’
- (28) *Mari lükkas käru poodi.*
 M.nom push.3.sg.past cart.tot to the store
 ‘Mary pushed a/the cart to the store.’

These examples are problematic for Tenny’s account of Finnish, where the distribution of accusative and partitive case should reflect the presence and absence of aspectual roles of the NP and delimitedness (see Tamm 2003b for more data on this issue). The aspectual nature of the sentences above cannot be dependent on the presence of the measure role of the argument but rather on the aspectual nature of the verb. This is the insight that is captured by the modified lexicalist thematic role based proposal, developed in Ackerman and Moore (2001). The aspectual role of “boundedness” is not linked to an argument but is part of predicate entailments (thematic (“proto”-) role entailments) that are involved only in aspectual object case encoding. However, it is problematic to account for Estonian total case in terms of case assignment based on predicate properties and thematic roles, since roles as such can be assigned to argument NPs by verbs. The data show that aspectual case-marking concerns both arguments and adjuncts (adverbials) (22) and also depends on the presence of the progressive construction (23) or an aspectual particle in the sentence (see examples (24) – (25)) and

not on the proto-role grid of the verb (28). The object case is on the one hand dependent on the verbs class and on the other hand independent of them, triggering a type shift on the verbs.

In sum, on the basis of Sections 2 to 6, the partitive and total cases are not primarily for marking oppositions of NP properties: quantification or definiteness. The case alternation reflects aspectual oppositions. Clausal aspect is largely but not entirely determined by the aspectual nature of the verbs; the same can be claimed about the object case marking. Estonian has clear aspectual verb classes that correlate with (a) the typical object case that occurs with these verbs (see for the data in Tamm 2004a) and (b) the aspectual interpretation (e.g. iterative (9) or not (1)) that the verbs have with partitive objects. Most verbs can occur in aspectually opposite sentences, but the conditions of the aspect-based assignment of the alternative object cases clearly vary according to verb classification. Instead of proposing principles for verb classes and establishing their typical object case, and instead of departing from object cases and establishing their link with aspect, those elements or factors are studied in their interaction. Differently from earlier accounts, the interaction is not formulated in terms of thematic or aspectual roles but in terms of features that reflect better the overall case marking strategies of Estonian and, therefore, are more independent of the exact lexical properties of the verbs. Historically, the case alternation stems from the semantics of the partitive NP in both Finnish and Estonian. The features do not capture aspectual composition based on object NP quantificational features and verbal temporal features. Instead, differently from the predominantly VP-aspectual Finnish aspectual case, the Estonian object case is better seen as if either completing or changing verbal aspect, thus mixing in its function the inner and outer aspectual levels. The following section seeks a representation for the compatibility of verbs and case, for the aspectual verb classes, and the fact that the case determines ultimately the aspectual nature of the sentence.

7. Proposal

7.1. Goals and insights

This section discusses the levels of description of the Estonian aspectual phenomena and then proposes a way to formulate the description in LFG.

Two of the main levels of representing the Estonian grammatical aspectual phenomena are morphology, since object case is involved, and semantics, since aspectual interpretations of sentences and lexical aspect are involved. In contrast to previous lexicalist accounts, this paper proposes a solution where the syntactic level of the functional structure and functional features are part of the analysis. A comparison can be made with the morpho-semantic interface as envisaged in Ackerman and Moore (2001), who crucially involve an aspectual proto-role, associated with lexical items. The presence of an entailment of this proto-role determines the morpho-semantic selection of the accusative (total) case for the object NP. However, relating the morphological case of objects and the notion of semantic boundedness that is based on the definition of telicity as in Krifka (1992) fails in telic sentences with accusative measure adverbials and telic verbs with partitive object case (*win*, *frighten*). The objects in those sentences are predicted to select accusative (total), since they are telic; however, their object may be partitive. An interface mismatch that needs to be adjusted appears, since a predicate may be semantically telic with or without having total object case marking in Estonian. Therefore, the following sections attempt to modify the link between the predicate aspect and object case. The options for adjusting the problem are in the semantics of the predicates, the ways of composition and mapping, the representation for the case itself, or syntax—or combined.

This approach has opted for a combined solution. More specifically, the analysis involves feature unification at the syntactic level of functional structure, where verbs and the case morphemes contribute aspectual features to syntax. There is also independent motivation, discussed above in Section 2, to use functional features and functional structure. Since case-marking alternation is a general strategy in Estonian, signaling oppositions in, for instance, voice or mood, the representation of the relations between predicates and case may plausibly be part of the functional structure.

In this analysis of transitive verbs, therefore, the interface with aspectual semantics is drawn between the functional structure and the semantic structure as in standard LFG (Glasbey (2001), Butt, Dalrymple and Frank (1997)). An important part of the analysis is the case morphology, which contributes features to the functional descriptions of lexical items. The choice to constrain sentential aspect simultaneously from case and verbs is based on the intuition about the current state of art in the

grammaticalization and lexicalization of aspectual meanings in Estonian object case and verbs. The intuition concerns evaluations about whether an object type occurs with a verb naturally or feels as coercion. The choice to account for aspectual composition in the f-structure syntax and not in the lexicon, which would mean that verbs contribute fully specified features, is based on those intuitions and considerations. Independent evidence from the work of Nordlinger and Sadler (2004) shows that encoding TAM on dependents instead of heads is a wider spread phenomenon.

7.2. The possibilities of the Lexical Functional Grammar framework

Importantly for this account, the LFG framework allows locating pieces of aspectual information and information about grammatical relations in many (discontinuous) constituents that may appear in several configurations in surface constituent structure syntax. Simultaneously, it allows locating them at one place at the other syntactic level, the functional structure. This effect is achieved by means of constraints that pertain to relations between the levels of representation. The account relies on parts of several previous analyses and methods, basically Tamm (2004). I apply the analyses of Constructive case in LFG as in Nordlinger (1997) and Nordlinger and Sadler (2004), in King (1995) on Russian, in Butt and King (2005) on semantic case, and in Lee (1999) on Korean. The approach of Toivonen (2001) to the interaction between the Swedish aspectual particles and verbs is adopted here for modeling the interaction between verbs and case, which is the basis for possible later elaboration of the interface with semantics. The basic advantage of the LFG framework is that it allows locating pieces of aspectual information and information about grammatical relations in many (discontinuous) constituents that may appear in several configurations in surface constituent structure syntax and locating them at one place at the functional structure.

7.2. Boundability and boundedness

This section concentrates on the terminology and on how the aspectual information from lexical entries specifies structures of syntactic representation. The main observation that this paper wishes to capture is that lexical entries provide partial but basic information about clausal aspect at the f-structural level of syntactic description. I discuss telic verbs. The data shows that regardless of their inner structure, telic verbs are only potentially telic, appearing in sentences either as atelic or telic, depending on the object case. The same problem appears with relating perfectivity and case. The proposal is that the terms telicity and perfectivity be dropped since confusion that may rise from the intuition that there is an “inner”, event structural “telicity” or “perfectivity-punctuality” and an “outer”, a grammatical aspectual “telicity” or “perfectivity”. Considering also the states where total objects relate to the maximal coverage or containment of bounded space (see Tamm 2004a), the term boundedness is used. Also, as the borderline between two levels of aspect is unclear and case seems to be a transition phenomenon from inner aspect marking to outer aspect marking. As many earlier Estonian accounts suggest treating Estonian aspect in terms of boundedness and verbal boundability, based on the intuition that transitive verbs are either boundable or not, I propose the terms bounded or boundable for describing the two types of telic verbs (*frighten/win* versus *write*) and the terms bounded or non-bounded for sentences.

The proposal is to represent the information about the aspectual boundedness also in the functional descriptions of the verb entry. Exactly as a Slavic verb must be specified for aspect, an Estonian transitive verb's object must encode the aspectual value in the sentence. Object case alternating telic verbs such as *kirjutama* ‘write’ do not specify their aspect themselves but specify only that the sentence where the verb occurs must have aspect. The representation of the presence of aspect is comparable to the presence of an object. Transitive verb entries contain a lexical constraint about an object but do not specify the exact content of the object. In a well-formed sentence, a transitive verb does not occur without an object, that is, without a value of the OBJ attribute; by the same token, a boundable transitive verb does not occur without aspect and aspectual case marking on its object.

Objects and the type of aspect that relates to the Estonian total case cannot be related more tightly, since the study on Tenny's aspectual interface hypothesis showed that boundability and transitivity are independent lexical requirements of a given verb. However, on the one hand, the existence of

boundability is still dependent on transitivity, since grammatical aspect emerges in Estonian clearly and unambiguously only with transitive verbs. On the other hand, as discussed above, boundability and transitivity are similar in constraining the conditions of the well-formedness of a sentence. In order to capture this parallel, the valueless boundedness feature is formalized as an existential constraint (B) exactly as the attribute (OBJ). The presence of the existential constraint in the functional specifications associated with the lexical entry means that the attribute must obtain a value in order to form a well-formed functional structure.

In case of the transitive telic verbs such as *write* verbs, the functional description consists of the boundedness attribute (B) that is either valueless (the correspondent of the possibility of being bounded). In case of the transitive telic verbs such as the *win* verbs, that is, the partitive-object telic verbs that are telic in their own right and cannot have total objects, the functional description consists of the boundedness attribute (B) that has the value (MIN) meaning minimally bounded. In this way, the lexical entries encode lexical boundability or lexical boundedness, respectively.

The characterization of telic verbs is follows in (29).

- (29)
 Boundable verbs: *kirjutama* ‘write’
 Bounded verbs: *võitma* ‘win’

In my classification, if a verb is telic and lexically bounded, then its boundedness feature is specified. Indications about the boundedness of the verb belong to the functional specifications in the verb entries and in the respective terminal node of the constituent-structure.

$$(30) \text{ } v\ddot{o}itma, V: (\uparrow PRED) = \text{‘WIN } \langle (\uparrow SUBJ), (\uparrow OBJ) \rangle \text{’}$$

$$(\uparrow B) = \text{MIN}$$

$$(31) \left[\begin{array}{l} PRED \text{ ‘WIN } \langle SUBJ, OBJ \rangle \text{’} \\ B \quad \quad \quad MIN \end{array} \right]$$

These specifications have the form of defining equations as in the verb entry of *võitma* ‘win’ (30). In this case, boundedness is specified in the lexical entry of the verb and clausal aspect is determined by the verb. As a result of the mapping from constituent structure to functional structure, the f-structure is constrained to contain the specified boundedness feature, that is, an attribute with a “fixed” value (31). Having a fully specified feature (a defining equation) as part of its lexical entry, such as $(\uparrow B) = \text{MIN}$, means for the verb that its boundedness is lexicalized, that it is an inherently perfective or telic, an inherently bounded verb. Since clausal aspect is modeled in terms of the unification of boundedness features in the f-structure, the failure in unification explains the restrictions on case marking patterns in the model where case contributes different values. This means that these verbs are not boundable by further elements and the range of aspectual case marking possibilities is restricted.

If verbs are boundable, their boundedness feature is valueless. They can be bounded, and the range of case marking possibilities is open. Indications about the boundability of the verb also belong to the functional specifications in the verb entry and are present at the terminal verb node of the c-structure. These specifications have the form of existential constraints in LFG as in (32).

$$(32) \text{ } kirjutama, V: (\uparrow PRED) = \text{‘WRITE } \langle (\uparrow SUBJ), (\uparrow OBJ) \rangle \text{’}$$

$$(\uparrow B)$$

In this case, clausal boundedness is not determined by the verb (by the lexical entry of the verb) but only as the result of the unification of features in the clausal f-structure (33). As a result of the

mapping from constituent structure to f-structure, the f-structure is constrained to contain only the attribute part of the boundedness feature, that is, an attribute without any value.

$$(33) \quad \left[\begin{array}{c} \text{PRED 'WRITE <SUBJ, OBJ>} \\ \text{B} \end{array} \right]$$

Having an existential constraint ($\hat{\uparrow}B$) means that the attribute B must be present in the f-structure feature matrix that corresponds to the verb in c-structure. As clausal aspect is modeled in terms of the unification of boundedness features in the functional structure, the possibility of the unification with features with different values explains the wider range of case marking patterns. In my model, the “underspecified” features become fully specified by the features of case-marked objects.

The next question is: given the incomplete f-structure, how will the values be obtained? Before discussing the verbs’ contribution to the sentence and the interaction with case-marked objects, I present the features associated with the three types of case markers.

7.3. Inside-out constraints for features associated with case-marked objects

Boundedness is also the term for the aspectual features in the f-structure feature matrix, where the B attribute can have the value of MINimal (in minimally bounded sentences) or MAXimal (in maximally bounded sentences). A maximally bounded sentence denotes an event with clear boundaries and that cannot be continued. A minimally bounded sentence denotes an event that either has existing but unspecified clear boundaries or can be continued.

The total case is the case that encodes the maximal boundedness in sentences; it appears in sentences that denote an event with clear boundaries and that cannot be continued. The lexical entry of the total case contains a defining equation, an inside-out constraint for the maximal boundedness feature, $(B\hat{\uparrow})=MAX$. The entry for the total case is presented in (34). A total case-marked nominal specifies the f-structure information in (35).

$$(34) \quad \text{TOT:} \quad \begin{array}{l} (\hat{\uparrow}\text{CASE}) = \text{TOT} \\ ((\text{OBJ } \hat{\uparrow}) \text{ B}) = \text{MAX} \end{array}$$

$$(35) \quad \left[\begin{array}{c} \text{B} \\ \text{OBJ} \end{array} \right] \quad \left[\begin{array}{c} \text{MAX} \\ \text{CASE TOT} \end{array} \right]$$

The indication $(\text{OBJ } \hat{\uparrow})$ secures that the higher f-structure contains an object to which the immediate f-structure containing the case-marked nominal belongs. The association between the nominal and its grammatical function is established by virtue of the case marker attached to it (cf. Nordlinger and Sadler 2004). I leave the semantic constraints that constrain the mapping between the f-structure and c-structure aside.

Partitive is the default case; it encodes only the constraint that the sentence is not maximally bounded (36). A constraint equation captures this constraint on the f-structures.

$$(36) \quad \text{PART1:} \quad \begin{array}{l} (\hat{\uparrow}\text{CASE}) = \text{PART} \\ ((\text{OBJ } \hat{\uparrow}) \text{ B}) \neq \text{MAX} \end{array}$$

Partitive object NPs specify the information in the f-structure feature matrix as in (37). If the f-structure matrix contained a B attribute with a MAX value, the structure would be ill-formed.



The general well-formedness conditions of LFG secure the sensitivity of aspectual case to verb classification and vice versa. The sentence is ill-formed as a result of a feature clash between the features specified by the total case, $(\hat{B})=MAX$, and the verb *võitma* ‘win’, $(\hat{B})=MIN$. Partitive marked objects and the bounded verb form well-formed minimally bounded sentences, since the verb entry constrains the f-structures to have a “minimally bounded” feature, and the features are unifiable, and the entry for partitive fixes that the structure should not contain a “maximally bounded” feature, which it does not. The two types of bounded sentences formed by the verb *kirjutama* ‘write’, which has an entry with an existential constraint, are also explained: the “minimal” and “maximal” values of the attribute are provided by the case-marked objects partitive plural and total, respectively.

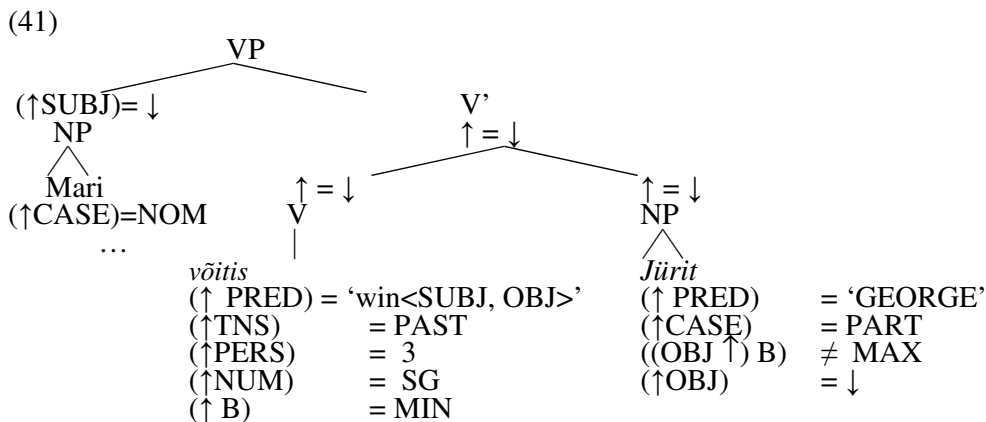
- (38) *kirjutama* ‘write’ ... (\hat{B})
võitma ‘win’... $(\hat{B}) = MIN$

The following example (39) is analyzed below. This is an example of a bounded verb, and a minimally bounded sentence. The lexical entries for the verb and the object are represented as in (40) and the constituent structure of (39) is presented in (41).

- (39) *Mari võitis Jürit.*
 M.nom win.3.sg.past George.part
 ‘Mary won George.’

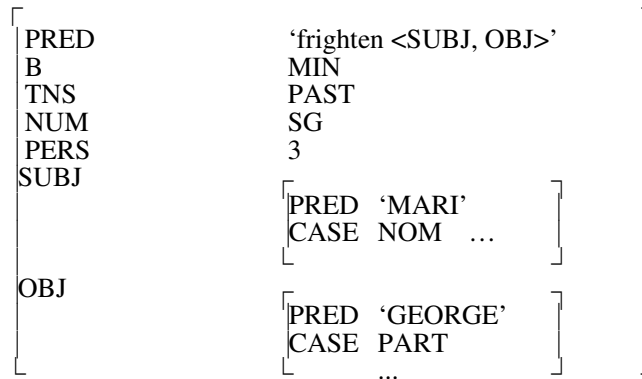
- (40)
- | | | | |
|---------------|---|---------------------------|---|
| <i>võitis</i> | V | $(\uparrow \text{ PRED})$ | = ‘win <(\uparrow SUBJ), (\uparrow OBJ)>’ |
| | | $(\uparrow \text{ TNS})$ | = PAST |
| | | $(\uparrow \text{ PERS})$ | = 3 |
| | | $(\uparrow \text{ NUM})$ | = SG |
| | | $(\uparrow \text{ B})$ | = MIN |

- | | | |
|----------------|--------------------------------------|--------------------|
| <i>Jürit</i> N | $(\uparrow \text{ PRED})$ | = ‘GEORGE’ |
| | $(\uparrow \text{ CASE})$ | = PART |
| | $((\text{OBJ } \uparrow) \text{ B})$ | $\neq \text{ MAX}$ |



The corresponding functional structure of (39), *Mari vōitis Jūrit*, containing the relevant information, is unified without any violation of well-formedness conditions (42).

(42)



Also, boundable verbs in maximally bounded sentence (43) are unified without any violation of well-formedness conditions.

(43) *Mari kirjutas raamatu.*
 M.nom write.3.sg.past book.tot
 'Mari wrote a book.'

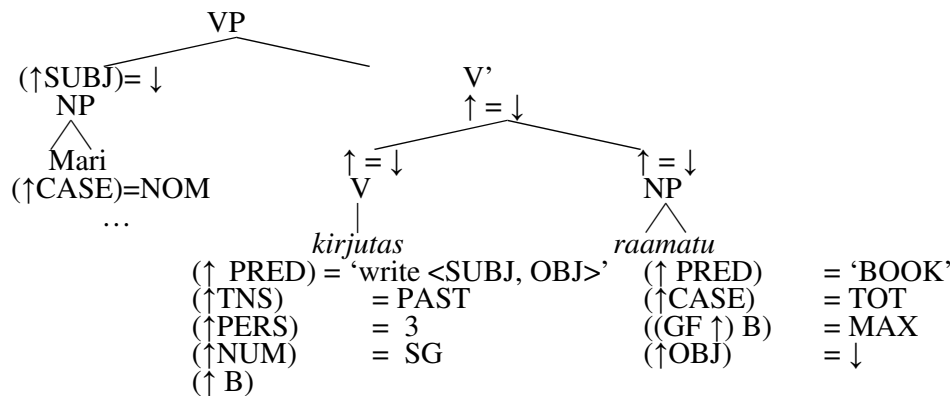
The lexical entries for the verb and the object of (43) follow in (44).

(44)

<i>kirjutas</i> V	(↑ PRED)	= 'write <(↑ SUBJ), (↑ OBJ)>'
	(↑TNS)	= PAST
	(↑PERS)	= 3
	(↑NUM)	= SG
	(↑ B)	
<i>raamatu</i> N	(↑ PRED)	= 'BOOK'
	(↑CASE)	= TOT
	((OBJ ↑) B)	= MAX

The constituent structure of *Mari kirjutas raamatu* (43) follows in (45).

(45)



The corresponding functional structure of (43) does not violate well-formedness conditions (46).

(46)

PRED	'write <SUBJ, OBJ>'								
B	MAX								
TNS	PAST								
NUM	SG								
PERS	3								
SUBJ	[<table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 2px;"> PRED 'MARI' </td> <td style="padding: 2px;">] </td> </tr> <tr> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 2px;"> CASE NOM </td> <td style="padding: 2px;">] </td> </tr> <tr> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 2px;"> ... </td> <td style="padding: 2px;">] </td> </tr> </table>	PRED 'MARI']	CASE NOM]	...]		
PRED 'MARI']								
CASE NOM]								
...]								
OBJ	[<table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 2px;"> PRED 'BOOK' </td> <td style="padding: 2px;">] </td> </tr> <tr> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 2px;"> CASE TOT </td> <td style="padding: 2px;">] </td> </tr> <tr> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 2px;"> NUM SG </td> <td style="padding: 2px;">] </td> </tr> <tr> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 2px;"> ... </td> <td style="padding: 2px;">] </td> </tr> </table>	PRED 'BOOK']	CASE TOT]	NUM SG]	...]
PRED 'BOOK']								
CASE TOT]								
NUM SG]								
...]								

8. Conclusion

The Estonian aspectual phenomena, especially the relation between aspect and the object case alternation, bear resemblance to the better-known Finnish aspectual phenomena (e.g., Kiparsky 1998, 2005) and Scottish Gaelic (Ramchand 1997). The account presented here addresses new Estonian data about verbs and case alternation and proposes a way to deal with the syntactic side of the phenomenon in LFG. This contribution adds to the puzzles of the Finnic partitive case, mainly as presented in earlier sources such as Tamm (2004a) and Kiparsky (2005). The latter source on Finnish provides considerably more data and semantic insights than Kiparsky (1998), the previous, VP-compositional account of the Finnish partitive. As my account uses Lexical Functional Grammar, the composition is not within the VP, but at the syntactic level of functional structure and is modeled in terms of feature unification. Kiparsky (2005), in its handout form, does not aim at giving either a complete semantic or syntactic account. My shortcut choice to account for aspectual composition in the f-structure syntax and not in the semantics is motivated by the difficulties in formalizing identical output from several inputs (cf. the same difficulties with the Finnish data and explanation in Kiparsky 2005) and also by the general intuition that multiple and partly overlapping functional constraints reflect the grammaticalization of the Estonian aspect more flexibly, witnessed by the volatility in the judgements on grammaticality and interpretations by native speakers. It remains to be clarified what are the costs and benefits of placing a part of the explanation to syntax and how to articulate the semantic account of the phenomenon.

Alongside with providing Estonian data that allow drawing parallels between Finnish and Estonian, this article concentrates on one of the several differences of the Estonian aspectual system that lead to a more nuanced account of the data, namely, the Estonian transitive telic verb classes that pattern with partitive object case marking (e.g., *win*, *frighten*). Taking into account that some atelic accusative-object verb classes in Kiparsky (1998), (2005) have partitive objects in Estonian, it can be concluded that the partitive-object verb classes are more numerous in Estonian. This article proposes an aspectual verb classification for Estonian transitive “telic” verbs: they are either lexically (minimally) bounded (*win*, *frighten*) or lexically boundable (*write*, *read*, *find*, *give*, *push to the store*). This classification is the basis for the observed systematic compatibility of verb classes with certain clausal aspectual object case marking patterns. Clausal aspect is understood in terms of boundedness. A clause or a sentence is maximally bounded if it describes an event with clear boundaries that cannot be continued. Clausal boundedness is encoded in the form of features at the syntactic level of functional structures. This article studies those aspect-related attributes and values that transitive telic verbs contribute to the f-structure. The lexical entries for transitive verbs are provided with valued or unvalued boundedness features in the proposed LFG lexicon. If a verb is classified as lexically minimally bounded, its functional specifications contain a valued boundedness feature. This restricts the range of aspectual case marking possibilities. If verbs are boundable, their boundedness feature is

unvalued. Since clausal aspect is modeled in terms of the unification of boundedness features in the f-structure, the possibility of the unification of features with different values explains the wider range of case marking patterns. The features become fully specified in the process of the unification with the features of case-marked objects. Verbs fall into aspectual classes, distinguished from each other according to the pattern of the attributes and values in the functional specifications of the verbs' lexical entries. This verb classification of two verb classes is the basis for accounting for the interaction between Estonian aspect, verbs, and case; however, many other verb classes and aspectual phenomena of Estonian are not addressed here.

Referenes

- Ackerman, Farrell and John Moore. 2001. *Proto-Properties and grammatical encoding: a correspondence theory of argument selection*. CSLI Publications, Stanford.
- Belletti, Adriana. 1988. 'The Case of Unaccusatives.' *Linguistic Inquiry* 19: 1-34.
- Butt, Miriam. 2006. *Theories of Case*. Cambridge University Press, Cambridge.
- Butt, Miriam and Tracy Holloway King. 2005. 'The Status of Case.' In Veneeta Dayal and Anoop Mahajan (eds.) *Clause Structure in South Asian Languages*. Springer Verlag, Berlin.
- Butt, Miriam, Mary Dalrymple and Anette Frank. 1997. 'An Architecture for Linking Theory in LFG.' In Miriam Butt and Tracy Holloway King (eds.), *Proceedings of the LFG 97 Conference*. <http://www-csli.stanford.edu/publications/>
- Comrie, Bernard. 1976. *Aspect. An Introduction to the Study of Verbal Aspect and Related Problems*. Cambridge University Press. Cambridge, London, New York, Melbourne.
- Dahl, Östen. 1985. *Tense and Aspect systems*. Blackwell, Oxford.
- Depraetere, Ilse. 1995. 'On the necessity of distinguishing between (un)boundedness and (a)telicity', *Linguistics and Philosophy* 18.1: 1 – 19.
- Erelt, Mati, Tiiu Erelt, and Kristiina Ross. 1997. *Eesti Keele Käsiraamat*. [The Handbook of Estonian] . Eesti Keele Sihtasutus, Tallinn.
- Erelt, Mati, Reet Kasik, Helle Metslang, Henno Rajandi, Kristiina Ross, Henn Saari, Kaja Tael and Silvi Vare. 1993. *Eesti Keele Grammatika II. Süntaks. Lisa: Kiri*. [The Grammar of the Estonian Language II. Syntax]. Eesti Teaduste Akadeemia Keele ja Kirjanduse Instituut. Tallinn.
- Erelt, Mati. 1985. 'MA-, -MAS- ja –MAST-infinitivist eesti keeles.' [On -MA, -MAS and –MAST infinitive in Estonian] In: *Ars Grammatica*. Academy of Sciences of the Estonian SSR Institute of Language and Literature. Valgus, Tallinn: 4 – 22.
- Glasbey, Sheila. 2001. 'Tense, Aspect and the temporal structure of discourse: towards an LFG account.' In: Miriam Butt and Tracy Holloway King. *Proceedings of the LFG01 Conferece*. CSLI Publications, Stanford.
- Harms, Robert T. 1962. *Estonian Grammar*. Indiana University Publications. Uralic and Altaic Series. Vol.12. Indiana University/Mouton & Co., Bloomington/the Hague.
- Hiietam, Katrin. 2003. *Definiteness and Grammatical Relations in Estonian*. PhD dissertation, Manchester.
- de Hoop, Helen. 1996. *Case Configuration and NP Interpretation*. Garland, New York.
- Kiparsky, Paul. 2005. *Absolutely a Matter of Degree: The Semantics of Structural Case in Finnish*. Handout CLS, April 2005.
- Kiefer, Ferenc. s.d. *Jelentésmélet*. [Semantic theory]. Corvina, Budapest.
- King, Tracy Holloway. 1995. *Configuring Topic and Focus in Russian*. Stanford, California: CSLI Publications.
- Kiparsky, Paul. 2001. 'Structural Case in Finnish.' *Lingua* 111:315 – 376.
- Kiparsky, Paul. 1998. 'Partitive Case and Aspect.' In: Miriam Butt and Willem Geuder (eds.) *The Projection of Arguments*. Stanford, CSLI Publications: 265 – 307.
- Klaas, Birute. 1996. 'Similarities in case marking in Estonian and Lithuanian'. In: (ed.) Erelt, Mati (ed.). *Estonian: Typological Studies I*. Publications of the Department of Estonian of the University of Tartu 4:35 – 67.
- Klaas, Birute. 1999. 'Dependence of the object case on the semantics of the verb in Estonian, Finnish and Lithuanian.' In: Erelt, Mati (ed.) *Estonian. Typological studies III*. Publications of the Department of Estonian of the University of Tartu 11:47 – 83.

- Kont, Karl. 1963. 'Käändsõnaline objekt läänemeresoome keeltes.' [The declined Object in Baltic Finnic languages] ENSV Teaduste Akadeemia Keele ja Kirjanduse Instituudi uurimused IX, Tallinn.
- Krifka, Manfred. 1992. 'Thematic Relations as Links Between Nominal Reference and Temporal Constitution.' In: Ivan Sag and Anna Szabolcsi (eds.), *Lexical Matters*. CSLI Publications, Stanford: 29 – 53.
- Larsson, Lars-Gunnar. 1983. 'Studien zum Partitivgebrauch in den ostseefinnischen Sprachen.' *Acta Universitatis Upsaliensis. Studia Uralica et Altaica Upsaliensia* 15. Uppsala.
- Lee, Hanjung. 1999. 'The Domain of Grammatical Case in Lexical-Functional Grammar' In: Miriam Butt and Tracy Holloway King (eds.) *Proceedings of the LFG99 Conference*. CSLI Publications, Stanford University. <http://www-csli.stanford.edu/publications/>
- Maling, Joan. 1993. 'Of nominative and accusative: the hierarchical assignment of grammatical case in Finnish.' In Holmberg, Anders and Urpo Nikanne (eds.), *Case and other functional categories in Finnish syntax*. Mouton de Gruyter, Berlin: 49-74.
- Metslang, Helle. 2001. 'On the Developments of the Estonian Aspect: the Verbal Particle ära.' In: Östen Dahl and Maria Koptjevskaja-Tamm (eds.) *The Circum-Baltic Languages: Their Typology and Contacts. Studies in Language Companion Series* 55. Benjamins, Amsterdam: 443 – 479.
- Metslang, Helle. 1994. 'Temporal Relations in the predicate and the Grammatical System of Estonian and Finnish.' Oulun Yliopiston Suomen ja saamen kielen laitoksen tutkimusraportteja 39. Oulu.
- Metslang, Helle and Hannu Tommola. 1995. 'Zum tempussystem des Estnischen.' [On the tense system of Estonian.] In Rolf Thieroff, *Tense Systems in European Languages II (Linguistische Arbeiten, 338)*. Niemeyer, Tübingen: 299 – 326.
- Nelson, Diane. 2003. 'Case and adverbials in Inari Saami and Finnish.' In: Anne Dahl and Peter Svenonius (eds.) *Proceedings of the 19th Scandinavian Conference of Linguistics. Nordlyd* 31.4:708 – 722.
- Nelson, Diane. 1998. *Grammatical Case Assignment in Finnish*. Garland, New York.
- Nemvalts, Peep. 1996. 'Case Marking on Subject Phrases in Modern Standard Estonian.' *Acta Universitatis Upsaliensis. Studia Uralica Upsaliensia* 25.
- Nordlinger, Rachel and Louisa Sadler. 2004. 'Tense Beyond the Verb: Encoding Clausal Tense/Aspect/Mood on Nominal Dependents.' *Natural Language and Linguistic Theory* 22. 597–641.
- Nordlinger, Rachel. 1998. 'Constructive Case: Evidence from Australian Languages.' *Proceedings of the LFG97 Conference*. CSLI Publications, Stanford.
- Pereltsvaig, Asja. 2001. 'On accusative adverbials in Russian and Finnish, In: A. Alexiadou and Peter Svenonius (eds.). *Adverbs and Adjunction*, Linguistics in Potsdam 6: 155 – 176.
- Ramchand, Gillian Catriona. 1997. *Aspect and Predication: The Semantics of Argument Structure*. OUP.
- Pihlak, Ants. 1982. 'Vene aspektikategooria ja eesti ajakategooria suhtest.' [On the relation between the Russian category of aspect and the Estonian category of tense.] *Voprosy sopostavitelnogo izutshenija leksiki i grammatiki na materiale estonskogo i russkogo jazykov*. ENSV Teaduste Akadeemia Keele ja Kirjanduse Instituut. Tallinn: 87 – 100.
- Rätsep, Huno. 1978. 'Eesti keele lihtlausete tüübid.' [Types of Estonian simple sentences.] *ENSV TA Emakeele Seltsi Toimetised* 12. Valgus, Tallinn.
- Rätsep, Huno. 1957. 'Aspektikategooriast eesti keeles.' [On the category of aspect in Estonian]. *Emakeele Seltsi Aastaraamat* III: 72 – 77.
- Pusztay, János. 1994. *Könyv az észt nyelvről*. [A book about the Estonian language.] *Folia Estonica*. Tomus III. Savariae, Szombathely.
- Rajandi, Henno and Helle Metslang. 1979. 'Määratud ja määramata objekt.' [Defined and undefined object.] ENSV TA KKI, Valgus, Tallinn.
- Smith, Carlota. 1991. *The Parameter of Aspect*. Kluwer Academic Publishers, Dordrecht.
- Sulkala, Helena. 1996. 'Expression of Aspectual Meanings in Finnish and Estonian.' In Mati Erelt (ed.) *Estonian: Typological Studies 1*. Publications of the Department of Estonian of the University of Tartu: 165–217.

- Tamm, Anne. To appear. *Scalar structure underlies telicity and evidentiality: On the aspectual partitive marking of the objects and the evidential partitive of the -vat form in Estonian*. Paper presented at TAMTAM, Nijmegen.
- Tamm, Anne. 2006. 'Estonian object and adverbial case with verbs of motion.' In *Proceedings of Grammar and Context - New Approaches to the Uralic Languages*. Budapest.
- Tamm, Anne. 2004a. *Relations between Estonian verbs, aspect, and case*. Doctoral dissertation, ELTE, Theoretical Linguistics Program, Budapest.
- Tamm, Anne. 2004b. 'On the grammaticalization of the Estonian perfective particles.' *Acta Linguistica Hungarica*. Vol. 51.1-2:143 – 169.
- Tamm, Anne. 2003a. 'Estonian transitive verb classes, object case, and the progressive.' In Anne Dahl and Peter Svenonius (eds.) *Proceedings of SCL Working papers of Language and Linguistics*. Nordlyd 31.4.
- Tamm, Anne. 2003b. 'Delimitedness, telicity, direct objects and obliques.' In: János Puszty (ed.) *Specimina Sibirica. Vol. XXI, Materialen der Konferenz Valencia Uralica. Szombathely, 18. – 19. April 2002*. Savaria University Press. Szombathely:115-149.
- Tauli, Valter. 1968. 'Totaalobjekt eesti kirjakeeles.' [Total object in Estonian.] In *Suomalais-ugrilaisen Seuran Toimituksia* 145. Helsinki: 216 – 224.
- Tauli, Valter. 1983. *Estonian Grammar II. Syntax*. Uppsala.
- Tenny, Carol. 1994. 'Aspectual Roles and the Syntax-Semantics Interface.' *Studies in Linguistics and Philosophy*, Vol. 52. Kluwer Academic Publishers. Dordrecht/ Boston/ London.
- Toivonen, Ida. 2001. *The phrase structure of non-projectig words*. Doctoral dissertation, Stanford University.
- Vainikka, Anne and Joan Maling.1996. 'Is Partitive Case Inherent or Structural?' In: Jack Hoeksema (ed.) *Partitives. Studies on the distribution and meaning of partitive expressions*. Mouton de Gruyter, Holland: 179 – 208.
- Verkuyl, H. 1993. *A Theory of Aspectuality: The Interaction between Temporal and Atemporal Structure*. Cambridge University Press, Cambridge.