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HELENA METSLANG

Grammatical relations in Estonian:
subject, object and beyond



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ABSTRACT

Grammatical relations, including subject, object and their border areas, are central elements of sentence structure and have been at the heart of debate in Estonian linguistics, and in linguistics in general. This thesis focuses on grammatical relations in Estonian from the viewpoint of typological, cognitive and functional theories of grammar. What unites all the different insights of this dissertation are the empirical approach and the common parameters that have been used in exploring the grammatical relations as well as the extensive use of corpus data.

In the thesis, the Estonian subject category is determined in a novel way by focusing on the morphosyntactic behavioural properties. The study also provides an integrated model for making comparisons of object's, the existential construction's argument's and extent adverbials' case-marking in Estonian. The impact of different semantic and message-packaging properties on case-marking is analyzed. Special attention is paid both to restrictions and statistical properties. The findings of the thesis suggest that the spread of fluid intransitivity is significant in Estonian.

The study also analyzes the applicability of the typological Referential Hierarchy on Estonian data. The hierarchy creates the hypothesis that the more salient referents tend to be zero-marked in the transitive subject position and have overt marking in the object position. It also suggests that the lower ranking referents are more likely to have overt marking as transitive subjects and zero-marking as objects (cf. Bickel 2010b). The study shows that the Estonian data confirms some of the predictions of the hierarchy while rejecting others. The studied data confirms the predictions of the typological Hierarchy of Grammatical Relations Constructions (which makes predictions on the accusative and ergative alignment of arguments in different behaviour constructions) and the Behavioural Potential universal (that assumes a link between a category's high token frequency in the discourse and the versatility of syntactic behaviour; Croft 2001: 146). The findings of this thesis may have implications for the theory on argument behaviour regarding the factors that condition the syntactic behaviour of arguments. It was found that in addition to the simple basic factors suggested in typological literature (topicality, agentivity and case), a composite factor (clausal construction type) can also determine Estonian subject behaviour. In the same way as it is acknowledged that argument coding can be influenced by a complex set of (sometimes composite) factors, the conditioning of argument behaviour should not be restricted to single determinants.

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I. INTRODUCTION

This thesis is a typologically, cognitively and functionally based contribution to determining the grammatical relations (grammatical functions) in Estonian and their borderline cases from the viewpoint of their morphosyntactic as well as semantic and pragmatic properties. It describes the distributions, coding and behaviour of the core arguments, as well as the coding of adjuncts (object-like degree adverbials or OLDAs) that share some semantic and coding properties with the core arguments. It contributes to determining the subject category in Estonian, as well as provides a unified account of the intricate case alternation systems of three grammatical relations: the object, the existential construction's NP (called e-NP in this thesis) and the OLDA.

The introductory sections of this thesis aim toward giving an overview of some relevant theories on grammatical relations and comparing earlier studies on Estonian grammatical relations and the findings of the present thesis with these theories. The theoretical introduction of the dissertation is comprised of two parts: the discussion of linguistic categories (section 2) and of the realization of semantic arguments in grammatical relations (section 3). More specifically, section 3 will first deal with the role of constructions and predicate verbs in argument realization (section 3.1). I will then proceed to outline some theoretical views from the literature on arguments and semantic roles (section 3.2) and also on grammatical relations and on the linking between form and meaning (section 3.3). This will be followed by a brief overview of the cross-linguistic means of argument realization such as case, agreement, word order and syntactic behaviour (e.g. antecedence of reflexives, raising and control; section 3.4). The final parts of the theoretical overview outline the theory on argument realization determinants (section 3.5) and alignment phenomena (section 3.6).¹ Section 4 reviews earlier studies on Estonian. It discusses clausal constructions (a term used by Barðdal (2006) for clause level constructions) and lexical predicates as determinants of argument coding frames (section 4.1) and the notion of clause type in Estonian linguistics, compared to the theoretical background (section 4.2). Section 4.3 will look at how grammatical relations have been determined in Estonian, while sections 4.4 and 4.5 discuss several ways of argument coding. The few previous studies on Estonian argument behaviour are reviewed in 4.6. In the thesis overview section I will present the results of determining (defining) arguments and constructions (section 5.1) as well as of coding systems and their determinants (section 5.2). The Conclusion summarizes the main contributions of this thesis to the field and makes suggestions for future studies.

¹ The term *alignment* is used in the sense of the morphosyntactic alignment between arguments. Alignment is a clustering that holds between sets of arguments that have the same formal treatment (e.g. case or agreement) in some context.

The five articles that comprise the empirical part of this dissertation are referred to as Metslang (2007), Metslang (2008), Metslang (2012), Metslang (to appear a) and Metslang (to appear b) in this introduction, see the List of articles section. The examples of the introductory chapters are from the Balanced Corpus of Estonian (a subcorpus of the Corpus of Written Estonian) unless otherwise indicated.

2. LINGUISTIC CATEGORIES

2.1. Preliminaries

When identifying and characterising grammatical relations, it is essential to determine what is meant by linguistic and syntactic categories and how the categories and their members relate to each other. It is also necessary to determine the constructions in which the categories occur and describe the category members' properties in these constructions. Therefore I will start the introductory chapters with this more general theoretic discussion.

Every linguistic theory faces the question of categorization. Categorization helps to systematize and compare relevant data and find the principles, rules and main building blocks of language that the theory wants to say something about. The kind of phenomena categorized in linguistic enquiry already since antiquity have involved a vast array of phenomena. These include for example word classes, constructions, conceptualizations of events and their elements, and communicational means. What is of special interest in this study, are the ways clausal constructions and their elements (e.g. grammatical relations, arguments and adjuncts) have been categorized both from semantic and formal angles (the latter includes morphosyntax; in principle, also message packaging, in the sense of Chafe 1976 could be treated as the formal expression of pragmatic information; see section 4.5).²

When establishing linguistic categories, usually the following aspects are considered in the literature (cf. among others, Aarts 2007; Croft 2001; Gries 2003; Rauh 2010; Goldberg 1995):

- a) deciding what type of phenomena the category concerns (e.g. semantic, syntactic or pragmatic on the one hand and atomic³ or complex on the other hand);
- b) identifying the (criterial) properties that help to make the decision whether particular entities belong to the category or not (e.g. semantic, syntactic properties). This features-based approach to defining categories is called the intensional definition (see below);
- c) identifying the internal structure of the category (for example the prototype structure or the classical structure with necessary and sufficient conditions for category membership);
- d) delimiting the borders of the category;
- e) identifying the category's relationship with other related categories.

² Although establishing pragmatic categories is important, for the reasons of space it is not possible to address this issue in this introduction.

³ Basic building blocks that other (syntactic) phenomena are derived from (e.g. Croft 2001: 4, 10).

As it will be shown in the following sections, these issues are highly relevant for several questions studied in this thesis. In the following I will discuss each of these aspects closer.

Examples of the **types of phenomena** that have been objects of linguistic categorization and are relevant for this thesis are:

- basic situation or event types conveyed by simple sentences (for example the event types of doing something to someone and possessing something);
- semantic roles (e.g. agent and patient);
- clausal constructions (e.g. transitive clause);
- phrase types (e.g. NP) and grammatical relations (e.g. subject and direct object).

These categories are important because the systematic linking between all or some of these four kinds of phenomena has been the focus of many theories of grammar. The theories account for how these categories are used to form both core and noncore structures in grammar (e.g. Goldberg 1995: 6). This thesis focuses on the categories regarding the core of sentences (like argument structure constructions) but also touches upon the non-core structures (the use of adjuncts). The notions *semantic category* and *syntactic category* can either be used to describe the types of phenomena being categorized or the properties chosen to define categories. In general, the first two examples in the list above are identified as semantic phenomena, while the last two are regarded as syntactic phenomena.

2.2. Criterial properties of syntactic categories

Theories differ from the point of view whether they find syntactic, morphological, semantic or some other criterial properties or a combination of them as more essential for basic grammatical description. Croft (2001: 132) summarizes one of the greatest divides in contemporary linguistics by stating that one of the central differences between formalist and functionally oriented theories is that formalist theories argue that categories such as syntactic roles are purely syntactic, while functionalist theories claim that they are purely semantic. For example Cognitive Grammar (e.g. Langacker 1987) and Cognitive Construction Grammar (e.g. Goldberg 1995) build their categories on the *meaning* of sentences and their elements. The approaches that focus strictly on *syntactic properties* are for example branches of Generative Grammar and also Aarts (2007) who discusses numerous linguistic topics from the literature, e.g. the properties of clausal constructions and core arguments, from the syntactic (formal) point of view (cf. section 3.1.3). Another example of the syntactically based approach is Rauh (2010) that studies how syntactic categories have been defined in a wide range of different linguistic theories, looking for example at the treatment of word classes (cf. section 2.3), phrase

types and, to a lesser extent, clausal constructions (see section 3.3). The third type of studies combines the use of different levels of grammar: e.g. Gries’ discussion of the English ditransitive construction and its close counterpart prepositional construction (2003; see the discussion in section 2.4) and also Taylor’s treatment of parts of speech (1989). For a different basis of the classification of criterial properties, see the summary of the classical and prototype-based categorization in section in sections 2.3 and 2.4.

Rauh (2010) suggests that true syntactic categories must be defined by using syntactic properties. In her treatment, **syntactic categories** are language-specific; they are categories “that refer to the set of linguistic items that may occur in the same positions in the structures of the sentences of a given language” (ibid.: 322, 338). This view has earlier been proposed by other linguists, e.g. Dryer (1997) and Croft (cf. 2001: 92). In Croft’s (2001) treatment, the subject is a language-specific syntactic category, as it is defined by its distribution: subjects occupy the same positions in behavioural test constructions (Croft 2001: 59; Rauh 2010: 317, 336–337; see example (14) in section 3.4).

However, Rauh does not exclude semantics from the identification of categories. Also the categories of the semantic (notional) type can be defined by formal, feature-based, i.e. syntactic, description. For example, lexical items largely depend on semantic relationships between each other in the sentence, but syntax is still important in defining these items (ibid.: 312). According to Rauh’s definition, structures are hierarchical. A mere position in a linear sequence of words or sentence functions is not a feature distinguishing syntactic categories (ibid.: 331, 383, 387). In Rauh’s view, syntactic categories also include for instance (i) lexical items in phrases and (ii) Van Valin’s syntactic templates (partial language-specific structures) that are combined to form simple and complex sentence structures (Van Valin 2005: 15). Figure 1 shows some examples of these templates.

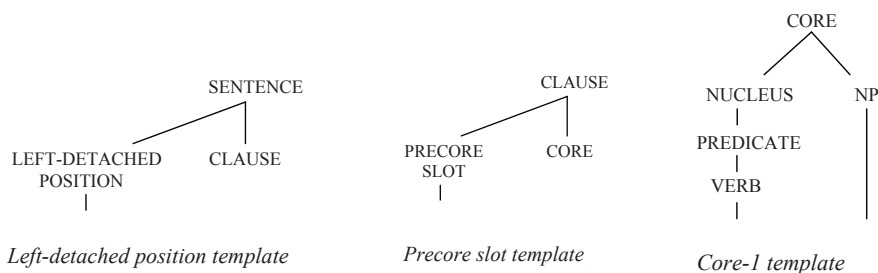


Figure 1. Syntactic categories: examples of partial syntactic templates (Source: Van Valin 2005: 15).

Van Valin's (2005) syntactic templates consist of syntactic units that usually have underlying semantic elements. However, there can be "dissociations between the semantic motivations and the syntactic instantiation of these concepts" and sometimes the syntactic units can be pragmatically motivated instead (ibid.: 8). The syntactic units are for example the following: Nucleus (the underlying semantic element: Predicate), Periphery (e.g. locative and temporal phrases, underlying semantic elements: Non-arguments), Core (underlying semantic elements: Predicate + Arguments) and Clause (Core + Periphery, underlying semantic elements: Predicate + Arguments + Non-arguments). The nucleus, core and periphery are the primary constituent units of the clause. In addition, sentences can involve for example the precore slot and left-detached position. Precore slot is a position where question words and fronted elements (*Bean soup I can't stand*) can occur. In addition to a clause, a simple sentence (i.e. a single clause sentence) can contain a left-detached position. This can include adverbials or other sentence-initial elements that are separated from the clause by a pause (*Yesterday, I bought myself a new car*). It is the detached phrases and extra-core slots that, as Van Valin suggests, seem to be pragmatically motivated or at least associated with constructions that have strong pragmatic conditions on their occurrence (ibid.: 4–8).

In many theories, in addition to structural configurations, also syntactic principles, rules and conditions can be involved in determining syntactic categories.

Rauh distinguishes the extensional and intensional approach in defining syntactic categories. The extensional approach defines categories by simply listing the sets of their members. The intensional method identifies the set of members of a syntactic category and also describes which properties items must be specified for to be able to occupy given positions in sentence structures (ibid.: 8). The extensional approach involves for example the method of identifying grammatical relations by sets of syntactic behaviour tests where the subject or object-like treatment is determined on the basis of the argument's occurrence in certain positions of the sentence structure (e.g. Croft 2001; Van Valin and LaPolla 1997; see section 4.3 below). This method was used in the article (Metslang to appear, a) of this thesis.

2.3. Classical category structure

Two common approaches to defining the internal structure of linguistic categories are the classical approach and the prototype approach. The classical approach that came from Aristotle has been especially concerned with the parts of speech and defines categories by a fixed set of necessary and sufficient conditions for each category. Every element that gets assigned to a particular category must fulfil the entire set of criteria. In this vein, all category members have equal status of the category. The criteria are context-independent and

category boundaries are strict. Although categories can be positioned on a continuum with respect to each other there are no grey overlap areas between them. Entities cannot have an interim status between categories, see for example Gries (2003: 1) and Rauh (2010: 319).

Rauh (ibid.: 320) suggests that syntactic categories are described as classical: an entity either can or cannot occupy a certain position in a certain sentence structure. Rauh also provides an example of how the building blocks of syntactic categories are defined by classical conditions. In *Localist Case Grammar* (Anderson 1971, 1997, 2000), lexical items are the building blocks for the formation of syntactic categories, and they are defined in the classical way. For instance, determiners can be regarded as both lexical items and as a syntactic category. As *lexical items*, determiners are defined as a word class that is specified for the feature of only occurring as semantic arguments and not as predicates in sentences (as a comparison, common nouns have more than just one semantic feature that is specified: they can occur as arguments and as predicates, but they are more frequently employed as an argument than as a predicate). The classical structure is revealed by the following feature specifications of lexical items.

- Only those items that have all the required features specified in their feature representation are members of the category.
- Each feature of such a feature representation of a lexical category is relevant to the category definition (Rauh: 270, 319).

In turn, as a *syntactic category*, determiners are specified as a category involving the lexical items that can only occur as semantic arguments and that take nouns as complements (ibid.: 270, 280, 319).

2.4. Prototype category structure

Especially starting from Rosch's well-known psychological research (e.g. 1973) and Labov's (1973) study on the boundaries of word meanings, a host of evidence has been published against the extensive use of the classical model in language descriptions. It was found that some linguistic phenomena are instead better described with the prototype category structure. Although it is especially the cognitive linguists who claim that linguistic categories should be described on a prototypical basis rather than an Aristotelian basis, typologists and functional linguists also subscribe to a more flexible approach to categorization and make use of prototypes (Rauh 2010: 313; Aarts 2007: 30). Prototype Theory describes categories as having some members belonging to the category's core. The theory states that they are better, more characteristic examples of the category than the other items. However, the peripheral members of the category are also still its full-fledged members. This idea is illustrated by the Blakean dictum cited in Aarts (2007: 97) which reads "*A good*

apple tree or bad, is an apple tree still ...” The set of a prototype category’s criterial features is not set; in the prototype structure, “entities share several or only one property with each other and/or with the prototype, but ... they do not share all the relevant properties” (Rauh 2010: 6). Many studies regard the boundaries of prototype categories as being smooth and overlapping with other categories (e.g. Rosch 1973). In Croft’s (2001: 103) view in the discussion on parts of speech prototypes represent cross-linguistic universals, however boundaries are features of language-particular categories. Hence in his treatment, even prototype categories do have boundaries. This brings Croft’s treatment of the category structure closer to Aarts’ subjective gradience model (see section 2.5).

Gries (2003) shows that the criterial properties of the prototype category are statistical tendencies (and not strict rules) and that they are not absolute: even if the criteria for using one category are fulfilled, speakers may choose to express themselves using another, competing category. He discusses the English ditransitive construction and a close but still distinct prepositional construction:

- (1) Ditransitive construction: John gave [_{NP_{Goal}} him] [_{NP_{Patient}} the book].
- (2) Prepositional construction: John gave [_{NP_{Patient}} the book] [_{PP} to [_{NP_{Goal}} him]]. (ibid.: 5)

On the basis of a number of earlier studies, Gries suggests that the membership criteria of these two clausal construction categories include the semantics of the whole construction, the semantic properties of the NP referent, the part of speech of the NP’s head (pronoun, noun, proper name), combinatorial properties (combination with a determiner) and message packaging (the length of the NP and the number and distance of the last mentions). Most of these properties are parameters that prototypically have opposite values in those two constructions. Gries shows that in corpus sentences, depending on the combination of these values (that can incline more toward the prototype of either construction), either one or the other construction tends to be chosen. However, in rarer cases, the speakers may choose to express themselves using a competing category despite the fact that many criteria of the other category are fulfilled. For example, consider the following corpus sentence with the prepositional construction:

- (3) Fans wrote letters to the band. (ibid.: 14)

More criteria of the ditransitive construction are fulfilled than those of the prepositional construction: the utterance denotes prototypical transfer instead of metaphorical transfer, the referent of NP_{Goal} is mentioned repeatedly in the preceding clauses, and the referent of the NP_{Patient} is discourse-new. Nevertheless, the use of prepositional construction has been preferred to the ditransitive construction in the corpus (ibid.: 15).

Although prototype effects were first observed in the field of cognition of real world entities, linguists find that also grammatical phenomena display prototype effects, although they are not entirely identical to those of real world phenomena. Grammatical phenomena differ from the real world entities in that:

- language speakers are more aware of the objects in the world than for instance the properties of the *adjective* category or the like;
- the features of real world entities are inherent, whereas grammatical categories belong to the domain of abstract grammar frameworks, therefore their features are relational.

(Aarts 2007: 87–89).

Linguists have used many different criteria for identifying linguistic **prototypes**. They are related to psycholinguistic experiments, language acquisition, the features' occurrence frequencies and cue validity,⁴ semantics, morphological and syntactic properties, less restricted use and distributional versatility, markedness and cognitive simplicity (Gries 2003; Aarts 2007; Rauh 2010; Croft 2001; Haspelmath 2002).

From the viewpoint of semantics, Goldberg (1995: 66) suggests that it is the most representative *specific* member of the category, and not an abstraction of the constructional meaning, that should be regarded as the semantic prototype of a construction (see Taylor 1998 for a similar approach). For Goldberg, extensions (the more peripheral members) of a category may be more abstract than the prototype or deviate from it in some other way. For example a sentence denoting physical transfer is a more prototypical example of the prepositional construction than metaphorical transfer:

- (4) Sally threw a football to him. (Goldberg 1995: 92) (physical transfer)
- (5) The idea presented her with an opportunity. (Goldberg 1995: 94) (metaphorical transfer)

There are several syntactic studies that deal with defining grammatical prototypes (cf. Comrie 1989 on defining the morphosyntactic subject category; and Aarts 2007 on the critical discussion of studies on the syntactic prototype effects of constructions). A mixed approach to identifying prototypes, uniting syntax, semantics and pragmatic features has been applied by Croft (2001), Gries (2003) and Taylor (1989). Croft unites the semantic and formal components of the prototype category by suggesting that the semantic distinctness of the peripheral category member from the prototypical one usually also predicts that there will be a formal divergence between the prototype category and peripheral category (2001: 118).

⁴ A term originating from Rosch's 1970s works that denotes conditional probabilities in categorization.

In this thesis, grammatical relations are defined both on the basis of classical and prototype based approach to categorization. For example the construction-specific coding and behaviour features of arguments are described on the classical basis and the semantic and information structural features of the global subject category show a prototype approach where the e-NP (that can be classified as a non-canonical intransitive subject) only bears some of the canonical intransitive subject's features (see sections 5.1.1 and 5.1.2 and Metslang to appear a, b).

2.5. Other views on the structure of syntactic categories

Some linguists (for example Wierzbicka 1989 and Aarts 2007) have criticized the excessive use of prototypes and other gradience account because this can bring about unnecessary vagueness in the linguistic description. In many such cases it is possible to categorize linguistic phenomena exactly and identify strict boundaries. Being primarily concerned with syntax, Aarts shows that many accounts of gradient linguistic phenomena can actually be replaced by precise classical categorization. However, even after eliminating several unnecessary gradience accounts, he still finds that gradience phenomena are widespread in grammar. In his study he narrows down the description of gradience and takes a position between the views of those he calls the 'categorizationalists' and those who are of the opinion that 'gradience is everywhere'. Aarts suggests that a particular formative may have properties of one or two categories, but that the borders of the categories are still clear (2007: 242). He shows that linguistic gradience has two kinds of structure: subsective gradience and intersective gradience.

Subsective gradience is a category type that concerns particular classes of linguistic elements or construction types. It has features in common with the prototype category structure because it recognizes a core and periphery within linguistic form classes. Subsective gradience permits for a particular element of the category to be closer to its prototype than another element from the same category. The members of a subsective gradience category may have some semantic features of other categories (ibid.: 79, 206). Aarts defines intersective gradience as a means of categorization that concerns two distinct categories. In his definition, these categories only converge in the sense that there can be elements that share a subset of properties of each category (ibid.: 79).

In the case of both subsective and intersective gradience, he denies the existence of fluid category boundaries and prefers to draw a line between categories. He finds it useful from the point of view of the methodology of linguistic enquiry, as a certain degree of idealization is inevitable in language description (ibid.: 224). Drawing arbitrary boundaries has been found to be less desirable in other studies (cf. e.g. Comrie 1989: 103). Aarts also denies

elements' multiple class membership (ibid.: 224–225). He argues this approach is justified, as single class membership makes language acquisition easier.

Other approaches of defining the internal structure of categories include for example gradient matrices (Crystal 1967) and schematic network structures (Langacker 1987).

3. IDENTIFICATION AND REALIZATION OF GRAMMATICAL RELATIONS

Grammatical relations and simple clause argument structure belong to the most central and most intensively studied areas of grammar. Since antiquity, numerous scholars from various schools of thought have studied these phenomena from different viewpoints and angles. Due to the vast number of ideas it is not possible to give a substantial overview of all of these approaches and their development in this introduction. This section only focuses on outlining a sketch of how these phenomena have been treated in Construction Grammar and the typological approaches that were used in the empirical analyses of this thesis. The overview mainly relies on the works of Bickel (2004, 2010b, 2011), Croft (2001), Dixon (1994), Goldberg (1995), Van Valin (2005) and Witzlack-Makarevich (2011).

The following aspects are important in identifying and characterizing grammatical relations:

- 1) how semantic roles are assigned in the clause;
- 2) what the role of particular verbs and constructions is in determining the arguments of the clause;
- 3) how semantic roles are linked to grammatical relations;
- 4) how referential properties affect the realization of NPs.

The following sections discuss each of these questions. The empirical studies of this thesis focus on questions (3) and (4) and, to a lesser extent, discuss questions (1) and (2).

Two main strategies that are commonly discussed regarding argument marking are discrimination and indexing. Comrie (1978) outlines the discriminatory view on argument marking by showing that it concerns particularly the identification of the transitive clause arguments. In intransitive sentences there is only one core argument and therefore the identification of S is in general unproblematic. However, in transitive sentences, there are two core arguments, A and O and there is a need to differentiate which element is which. In accusative languages it is common to distinguish A from O by marking O. O marking is in the majority of accusative languages more complex than the nominative (i.e. the case of A) (ibid.).⁵

Dixon (1994) suggests that in the case of indexing, each instance of use of a verb is dealt with separately depending on the semantic functions of the argument NPs. Depending on the semantics of situations, in each instance of use of arguments are marked directly without following the prototypical template that a verb might have for marking its arguments (like in the case of the discriminatory strategy). Languages where direct marking dominates tend to

⁵ Comrie uses the abbreviation P instead of O.

have more fluid grammatical requirements, e.g. the optionality of argument NPs in sentences. Indexing and discrimination are idealizations of argument marking strategies, it is likely that to a certain extent both strategies occur in every language (Dixon 1994: 24).

3.1. Constructions and lexical predicates as determinants of argument realization

Argument realization is the morphosyntactic expression of the arguments of a verb or a construction (cf. Levin and Rappaport Hovav 2005; Witzlack-Makarevich 2011: 114–118). This includes whether an argument can be selected as a subject or an object of particular verbs and constructions and the arguments’ case assignment and other coding properties (see section 3.4). According to Levin and Rappaport Hovav, some argument alternations are meaning-driven, while others are determined by message packaging (assigning information status to discourse elements, e.g. given/new), etc. (2005: 205–216). Although this term has mainly been used for argument coding and configurations that are determined by lexical predicates, I find ‘argument realization’ a useful umbrella term for all kinds of ways of referring to arguments morphosyntactically and information structurally. This thesis discusses a host of different argument realization factors.

In the following section, I will outline the central role of verbs’ lexical properties and clausal constructions in determining argument structures (sections 3.1.1 and 3.1.2). Section 3.1.3 will detail how Construction Grammar describes constructions in general, and more specifically on the argument structure level. Section 3.1.4 will look at Construction Grammar’s account of verbs’ and clausal constructions’ division of tasks in argument structure determination. (Also sections 3.5.2 and 3.5.3 discuss verbs and clausal constructions and their impact on differential argument marking. The focus of these sections is on particular argument types, and not whole argument structures.)

3.1.1. Effects of lexical predicates on argument structures

Lexical items, in particular the ones that can be classified as verbs and nouns (content words) have very complex meaning structures. They contribute a large amount of information into linguistic expressions. For example, individual verb lexemes carry the meanings of aspect and manner, specify argument structures, etc.:

- (6) Ø Saat-si-n üh-t nais-t koju.
 (I.N) escort-PST-1SG one-P woman-P home.IL
 ‘I was escorting one woman home.’

In (6) the predicate verb *saatsin* has two arguments (the agent and patient), the aspect is atelic and the manner of the activity may be interpreted as a rather peacefully paced stroll.

Syntactic theories deal in one way or another with the question of how verbs impact the assignment of grammatical relations in a sentence:

“Though theoretical frameworks differ greatly in their visions of what kind of information is represented in the lexicon, the effects of lexical (or lexical-semantic) properties of predicates on grammatical relations are obvious and very common in the languages of the world.” (Witzlack-Makarevich 2011: 100)

As several other authors, Van Valin approaches this problem of what determines argument structures by suggesting that it is **particular predicates** (as opposed to whole constructions) that specify argument positions in their semantic representation (2005: 31–60; see Witzlack-Makarevich 2011: 28 for discussion). In Van Valin’s Role and Reference Grammar framework, argument positions are thematically specified slots in the semantic representation of the verbs in the lexicon. This is a bottom-up approach to analyzing sentence structures. Van Valin suggests a rich decompositional system for representing a verb-related logical structure. The basic predicates are Vendler’s (1967) states and activities, and the logical structures of the other predicate types (achievements, accomplishments and their subtypes) are derived from them. The decompositional structures involve relevant semantic properties of the verb’s meaning. In addition to aspectual features (e.g. ingressive, semelfactive) and causation, also argument positions with generalized specifications about the suitable thematic relations that could fit in them. Van Valin’s generalized thematic argument positions are groups of thematic relations (like the agent, wanter, judger, judgement etc.; see the more detailed treatment of semantic roles in section 3.2. below). He places the thematic relations on a continuum that is arranged on the basis of the argument’s agentivity and the verbs’ aspectual properties that they combine with. The continuum starts with the agent and ends with the patient and entity.

Also several other theories of grammar assign argument structures directly to predicates. For example in Dik’s Functional Grammar (1989) the predicates are stored as frames in the extended lexicon (in Dik’s terms, *the fund*), including verbs’ argument structure positions and their semantic restrictions. On the next, higher level, predicates’ argument positions are filled with terms (Dik 1989: 59–61). For example *to give* is specified in the fund as a predicate type called ‘verbal’ and as an argument structure with three arguments: the animate agent, the (unspecified) goal and the animate recipient.

In her lexical typological study on particular verbs, Nichols (2008) shows how cross-linguistically individual verbs in particular languages form groups on the basis of their argument coding frames (see section 3.5.2). (By *argument coding frames* I mean the the case, agreement and prototypical word order

preference of the set of semantic arguments in an argument structure. I use this term to separate formal coding from semantics – in this study I regard *argument* as a semantic notion and *argument structures* as the sets of semantic roles specified by verbs or constructions; cf. section 3.2 and 3.4.)

Researchers have not reached an agreement on whether it is the verbs' lexical-semantic structure that influences the realization (e.g. case-marking) of their arguments, or whether verbal semantics should be discarded in this discussion. The former has been proposed for example by Dowty (1991), Primus (1999), Onishi (2001), Ackerman and Moore (2001). However, there are still many unsolved issues with this account. Witzlack-Makarevich (2011) points out a problem that occurs when we identify a group of verbs on the basis of some semantic trait they share and then claim that this trait causes similar morphosyntactic behaviour (e.g. case-marking) of its arguments. Namely, this does not imply that the same verb group sharing this property will be treated the same way by other coding constructions, e.g. by agreement. Often it is also rather the etymology that is more indicative of the case-marking factors of verbs' arguments than the synchronic semantic profile (Witzlack-Makarevich 2011: 116–117; see also section 4.1 for an analysis of the respective Estonian data).

Nichols' (2008) approach is taken forward by Bickel (2010b) and Witzlack-Makarevich (2011: 107–109) who only take a *lexically* determined argument subset formation (i.e. an argument group's occurrence in a certain case or agreement construction) and not verbal *semantics* as the main basis for discriminating predicate classes. According to their analyses, every such coding device can potentially distinguish between verb groups in its own idiosyncratic way. Bickel and Witzlack-Makarevich also regard this as one of potential methods of identifying language-specific alignment patterns. For example, a particular predicate class in a given language can allow for the generalization of the accusative alignment pattern of its arguments on the basis of case-marking. However from the viewpoint of agreement, it rather shows neutral alignment (see also section 3.6).

To summarize, it is rather common that argument structures and argument coding frames are not exclusively projected from a verb's semantics (semantic features).

3.1.2. Effects of clausal constructions on argument structures

It is necessary to distinguish a verb's lexical semantics from the semantics of the whole expression in cases where the same verb appears in several different argument structure arrays (Goldberg 1997: 384). This subsection shows that in some clausal construction types the verb lexeme cannot be regarded as responsible for contributing information about the arguments. This is the case with some intransitive and existential constructions in Estonian, which is shown by the following:

- (7) Elisabeth leba-s ristseliti sohva-l.
 Elisabeth.N lie-PST.3SG on.her.back sofa-AD
 ‘Elisabeth was lying (on her back) on the sofa.’ (intransitive construction)
- (8) Riiuli-te-l leba-si-d raamatu-d.
 shelf-PL-AD lie-PST-3PL book-N.PL
 ‘There were books lying on the shelves.’ (existential construction; see also section 4.2)

Both clauses have the predicate verb *lebama* ‘to lie’ and also a single core argument: *Elisabeth* in the intransitive construction (7) and *raamatud* in the existential construction (8). However, there are some systematic differences between these construction types that pertain to the semantic, information structural and syntactic properties of the construction as well as the argument. In the intransitive constructions, the single argument is usually animate, active in the discourse, the semantic starting point of conceptualization of the situation, and passes the syntactic subjecthood tests (control, raising, etc.). The e-NP (the single argument of the existential construction) is the opposite in all respects: it is usually inanimate and inactive in the discourse, it tends not to be the starting point of the semantic conceptualization of the situation, and fails most of the syntactic subjecthood tests (cf. Metslang 2012 and to appear a). The role the arguments play in the depicted situation is rather determined by the whole construction (see also Goldberg 1995: 3 and Gries 2003 for an analogous example of English dative and prepositional constructions). This is the top down method of argument structure formation and is essential in Radical Construction Grammar (Croft 2001).

3.1.3. Construction Grammar’s account of argument structures

Sections 3.1.1 and 3.1.2 show that when modelling the syntactic makeup of sentences, grammatical theories have differences in whether they build sentences by taking the properties of the predicate verb lexeme or the construction as a starting point. In the following I will give a brief outline of an example of the latter kind of approach, the Construction Grammar. A branch of Construction Grammar, Radical Construction Grammar, has largely been used in this thesis. The empirical studies of this dissertation also rely extensively on another typological approach, Bickel’s theory, that has in the main parts greatly on the same foundations. Construction Grammar has proved suitable for analysing several “grey” areas of grammar which are also under scrutiny in this dissertation. The Construction Grammar perspective has for example been successfully used in analyzing grammatical phenomena in Estonian that other theories could not deal with so well: infinitival constructions and action nominalizations (cf. Penjam 2008 and Sahlai 2011 respectively).

Construction Grammar is a syntactic theory that was developed in the 1980s and 1990s (cf. for example Fillmore et al. 1988; Goldberg 1995, 1997; Kay and Fillmore 1999; Lakoff 1987; Wierzbicka 1982). In Construction Grammar constructions are the central, basic and primitive units of grammatical representation (i.e. units not derived from or built up out of other grammatical units; e.g. Goldberg 1995; Croft 2001). Constructions are form-meaning correspondences that are symbolic units of the speakers' linguistic knowledge. As in Cognitive Grammar, in Construction Grammar no strict division is assumed between the lexicon and syntax (Goldberg 1995: 7; Croft 2001: 58; Langacker 1987: 54). Thus the term "construction" has a very wide meaning in this theory and it involves grammatical units that may be atomic or complex, schematic or substantive (Croft 2001). In Construction Grammar, constructions involve for example case and agreement constructions, lexical items, idioms, control constructions, non-finite constructions, argument structure constructions and word order constructions (cf. Bickel 2010b; Croft 2001; Goldberg 1995: 4, 7). An alternative, more narrow view determines constructions as larger syntactic structures, such as clause level units. In this view a distinct construction is said to exist if one or more of its semantic or formal properties are not strictly predictable from the knowledge of other constructions existing in the grammar (Goldberg 1995: 4). Such constructions themselves are found to necessarily carry meaning independently of the words in the sentence (Goldberg 1995: 1).

Radical Construction Grammar is a branch of Construction Grammar that was developed by Croft (2001) and it differs from other versions of the theory in a few respects. This branch of Construction Grammar does not posit syntactic relations between elements in constructions (e.g. between the subject and the predicate; cf. section 3.3).⁶ It only posits

- semantic relations between the semantic components of a construction and
- relations between syntactic elements of constructions and the corresponding components of the semantic constructional structures (symbolic relations).

Barðdal illustrates it with the following schema of the German subjectless construction *Mir graut* 'I fear (something)'.

⁶ This view is also shared by some other theories, e.g. Relational Grammar (Farrell 2005: 30).

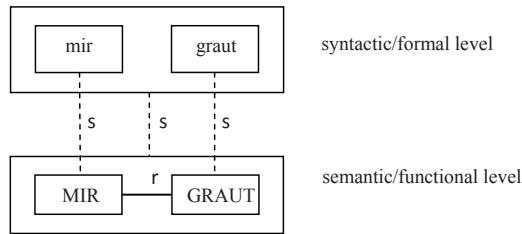


Figure 2. The semantic and symbolic relations between parts of a construction (s – symbolic relations; r – semantic relation).
 Source: Barðdal (2006: 76).

Hence Radical Construction Grammar suggests that significant grammatical generalizations can rather be found in semantic and syntactic relations and in the part-whole relationships between syntactic roles and constructions (and not in the relations between different syntactic elements; Croft 2001: 21–25). This makes the categories unique to each construction, thus Croft discards the notion of global categories (see section 3.3). In addition, Radical Construction Grammar argues that constructions are language specific (ibid.: 59). Constructions form hierarchical taxonomic networks, consisting of more and less specific and schematic constructions (for example, defined in terms of grammatical categories or lexical items respectively). Croft illustrates this with the hierarchy of clause types, see Figure 3.

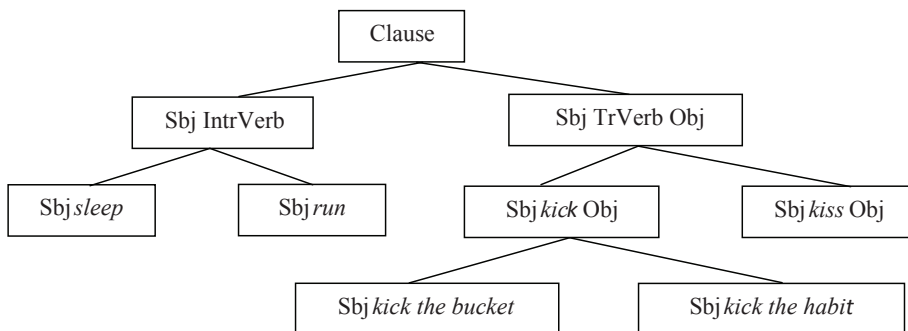


Figure 3. A taxonomic hierarchy of clause types. Source: Croft (2001: 24).

Also in Goldberg’s theory (1995: 5) the collection of constructions “constitutes a highly structured lattice of interrelated information”.

In this thesis, I call a subclass of constructions (the term is understood in the wider sense here), clause level units, *clausal constructions*. These include for example argument structures and argument coding frames, and are especially

relevant in the context of the discussion of argument realization. It is relevant here to discuss Goldberg's treatment of argument structure constructions in the context of clausal constructions.

Goldberg calls constructions involving basic argument structures *basic clause types* or *argument structure constructions* (1995: 5, 28). The set of constructions involving basic argument structures are shown to encode general semantic event types. They are associated with dynamic scenes basic to human experience, such as *someone volitionally transferring something to someone else, someone causing something to move or change state, someone experiencing something, something moving*, etc. (Goldberg 1995: 66; see also Fillmore 1968; Langacker 1991a).⁷ Semantically these constructions are categories with a prototype structure. Goldberg suggests that argument structure constructions have their semantic structures paired with the syntactic frames in as general a way as possible (1995: 4).

Such clausal construction types have been characterized in terms of cognitive schemas that are abstract prototypes or templates (Goldberg 1995: 26; Helasvuo 2001). In the rest of this subsection I will discuss a cognitive account of clause types that links with the views of Construction Grammar.

Helasvuo (2001: 4–8) maintains that the utterances often instantiate the prototypical schemas only roughly and may differ from them with respect to a certain parameter; the instantiation of schemas depends on their position in the discourse sequence, memory factors, etc. The emergence of cognitive schemas is explained by the processes of entrenchment and conventionalization (*ibid.*). Helasvuo discusses schemas from the syntactic viewpoint and suggests that in addition to the grammaticalization of particular arguments, some schemas are themselves more grammaticalized, and some less (for example the transitive vs. existential schema in Finnish that are also similar in Estonian). The construction can be regarded as more grammaticalized because it does not have lexical specifications for the predicate verb and also the word order is highly flexible. Also the realization of the subject is defined in very abstract grammatical terms in the transitive construction. Helasvuo shows that the existential construction, in turn, has a less grammaticalized (and rather lexically, i.e. more specifically bound) schema. She brings out the following features of the existential construction (2001: 5–8):

- there are lexical restrictions to which verbs can participate in it,⁸
- the realization of the e-NP is dependent on the construction or particular verb lexemes (i.e. on less general level phenomena),
- the word order of the existential construction is rather fixed.

⁷ The rationale for using such event types involves for example facts from language acquisition studies (Goldberg 1995: 66).

⁸ To a degree most of intransitive verbs can appear in existential constructions, however, most of them are very rare and used non-productively (e.g. Huumo 1999 on Finnish; Nemvalts 2000 on Estonian).

In this thesis I largely use clause types as a basis for defining arguments and grammatical relations. In general, this account of clausal construction types outlined above applies for them, too.

As mentioned above, like Helasvuo, Aarts advocates studying clausal constructions from a syntactic angle. He criticizes the semantic basis for determining constructions and finds that often the constructional meaning is too vague (this is especially the case with the more grammaticalized constructions like the transitives that Aarts has chosen as an example that can express a wide range of different meanings; cf. Aarts 2007: 194, 196–198). However, using meaning as a basis for defining constructions is illuminating at least in the case of different marked (i.e. the monofunctional) construction types discussed in this thesis, as their constructional semantics is narrow (e.g. existential construction, as in example (8) in section 3.1.2; see section 4.2 and 5.1.3 for an overview and discussion of Estonian clausal construction types that can either be multifunctional or monofunctional).

3.1.4. Division of tasks of verbs and constructions in the formation of argument coding frames

As discussed above, though constructions and the predicate verbs they contain are independent, they are interrelated. In Construction Grammar, verbs are marked to bear information about which event types they can be associated with. Hence the constructional information of argument structure is supplemented by lexical information (as in Role and Reference Grammar and Functional Grammar described in section 3.1.1). The relation of a particular verb and construction depends on the meanings of both, and on the constraints on when the verb can occur in a given construction. The constructional constraints specify the verb classes and event types that can be integrated in them (Goldberg 1995: 24, 40, 49, 66).

Similarly to several other frameworks, in Construction Grammar lexical items are equipped with rich frame-semantic knowledge, specifying all the details that, *inter alia*, allow felicitous use of adverbs and adjuncts, and also allow for making correct inferences and translations from the sentence (Goldberg 1995: 31, 66). The meaning of constructions is, on the contrary, more schematic, and captured by the use of semantic decompositional structures like X CAUSES Y TO RECEIVE Z (*ibid.*: 28).

3.2. Arguments and semantic roles

In order to determine and characterize grammatical relations, it is necessary to first define another category – the arguments – which plays an important role in their formation. Arguments are regarded as NPs expressing semantic roles specified in the meanings of verbs or constructions, and also as NPs specified

for their semantic role or referential type, e.g. as agent or animate respectively (Farrell 2005: 30; Bickel 2010b; Goldberg 1995; see also Dixon 1994). The difference between semantic roles and grammatical relations can be easily understood if one thinks of the grammatical relation *subject* that can mark both the agent argument in the active voice and patient argument in the passive voice.

In general, it is possible to define arguments either on the basis of syntactic properties (e.g. passivizability or deletion in imperatives) or semantic properties (e.g. prototypically denoting the most agentive argument of the clause). In this thesis, the latter approach has been chosen because it has been found a more reliable basis for:

- distinguishing arguments from each other when there are more than one in the clause (for comparison, the *form* of different argument in a clause can be similar, e.g. the use of nominative objects in Estonian, compare examples (50) and (52) in section 4.4);
- distinguishing arguments from adjuncts (NPs not specified for in argument structures, for example the nominative can also mark extent adverbials in Estonian, cf. (42) in section 4.3);
- identifying language-internal morphosyntactic argument properties (the *semantic definition* of the more active transitive clause argument, ‘the most actor-like participant of the clause’, defines a more uniform set of arguments than the alternative *formal definition*, for example ‘the nominative’ – nominative NPs can express a varied set of grammatical relations in Estonian: subjects, objects and adjuncts);
- comparing grammatical relations cross-linguistically (for example, if we were to compare objects cross-linguistically on the basis of coding properties we would fail to capture several similarities that Estonian genitive objects have with the objects of most other languages as genitive is not a common object case in the world’s languages).

(cf. Bickel 2010b; Croft 2001: 136; Witzlack-Makarevich 2011: 43–45, 61.)

In order to describe **semantic roles**, one can use various classifications. Goldberg has suggested a distinction that is based on whether the role is specified by the predicate verb or by the clausal construction. She calls the first type *participant roles* and the second *argument roles* (1995: 43–44; cf. section 3.1). Several other theories define semantic roles only on the basis of predicates. Another distinction is the division according to the degree of semantic specificity. On this basis I will discuss semantic roles on three levels (cf. Van Valin 2005: 53). Particular *verb-specific roles* are clustered together to form more general *thematic roles* (also called thematic relations or theta roles).⁹

⁹ In literature, these approaches vary, for example, Van Valin (2005) calls verb-specific roles *thematic relations* (see section 3.1.1).

Thematic roles, in turn, are generalized to *macroroles*. In different languages, it is either the macroroles or thematic roles that condition case-alignment or other means of argument realization (cf. Bickel and Nichols 2008: 307; Croft 2001: 136). In addition to semantic roles, propositions may also serve as arguments of a predicate (Lambrecht 1994: 74). In the following I will outline each level of the specificity-based division of semantic roles.

In the specificity-based division, the first most specific level is directly related to the verb. For example the verb *to hand* has the roles of the *hander* and the *handed* (cf. Goldberg 1995: 12). On a higher level the verb-specific roles are generalized (clustered) to the thematic roles (agent, patient, instrument, theme, etc.). As mentioned above, they hold between arguments and predicates that are typically verbs (Bickel 2010b) or between arguments and constructions (Goldberg 1995). Dowty (1991) defines a thematic role (in his terminology, a theta-role) as a cluster of entailments that verbs share about a certain argument position of theirs. According to Saeed (2001), the thematic role agent can be identified by the possibility of adding phrases like *deliberately*, *on purpose*, *in order to* in the sentence, or the possibility of asking the question *What did X do?* about a sentence where the agent is denoted by X. The means to identify the patient include the paraphrase possibility (*What happened to Y was...*) and the option of asking the question *What X did to Y was...* Here Y denotes the patient (ibid.). The idea that thematic roles are just entailments of predicates (or constructions) and not semantic primitives is also found in numerous other studies (e.g. Bickel 2010b; Croft 2001; Goldberg 1995; Van Valin 2005). Dowty (1991) suggests that thematic roles are categories with the prototype structure and without clear boundaries.

What is especially important in the discussion of grammatical relations is the third and the most abstract level of semantic roles, which are called macroroles. This is the least fine-grained distinction that cannot be associated with individual predicates. This notion was introduced by Dowty (1991) and in his terminology macroroles include two basic prototypes, the Proto-Agent and Proto-Patient, each of which contains a characteristic list of entailments. Van Valin (2005) characterizes macroroles as polysemous categories that subsume a number of thematic arguments.¹⁰ He defines them on the basis of the primary arguments of the transitive predication, as the actor and undergoer role. Both of them can also occur as the single argument of the intransitive verb. The use of the macrorole level categories is motivated by the fact that grammar often treats groups of thematic relations alike (Van Valin 2005: 60). For example, the argument that can be demoted in the passive can bear the verb-specific roles of the creator, mover and performer (i.e. actor) but, considerably less likely, the patient or entity role (i.e. the undergoer).

The arguments that fill argument structure positions and that have typically grammaticalized as subject and object roles are called *core arguments*. They are

¹⁰ In Role and Reference Grammar thematic arguments are verb-specific.

based on macroroles and include the A, S and O roles (cf. Croft 2001: 132).¹¹ The argument roles of transitive verbs are defined by only one necessary distinction (i.e. the minimal number) in numerical valences (Bickel and Nichols 2008: 307). The most actor-like argument of a transitive verb is A and the ‘not most actor-like argument of a transitive verb’ is O. S is different from the other core arguments because it is not determined by semantic means but only by the predicate valence: it is the sole argument of one-place predicates (cf. Bickel 2010b; Croft 2001).

Argument structures contain relational slots that specify which argument roles can be associated with them. Goldberg (1995: 49) shows this with the ditransitive clause. The decompositional structure of the ditransitive construction is X CAUSE Y TO RECEIVE Z, and its semantics is represented as CAUSE-RECEIVE <agent recipient patient>. It is important that the role specifications do not occur as an unstructured list in the (verbal) predicates’ or constructions’ argument structures. The roles that can occupy each position are specifically semantically constrained in the argument structure (e.g. Goldberg 1995; Van Valin 2005).

In languages it is common that not only different semantic roles receive different grammatical treatment but also arguments of different *referential types*. Therefore it sometimes also makes sense to use more detailed argument types, for example A_{definite} and A_{indefinite} (Witzlack-Makarevich 2011: 82; see section 3.5.1).

3.3. Grammatical relations and mapping between form and meaning

Once single arguments have been identified semantically, it is possible to build grammatical relations of arguments on the basis of their properties (Witzlack-Makarevich 2011: 61). In order to provide an example of grammatical relations, I will proceed with the determination of the subject provided by DuBois (1985) (which may be considered the most central grammatical relation). He establishes that in accusative languages, the subject represents a grammaticalization of property clusters (such as agent, experiencer and other semantic roles), discourse tokens (i.e. text structural units preferred by users) and the thematicity and continuity of referential identity (1985: 357). Hence grammatical relations have developed in the process of the association of semantic roles with discourse roles. Subject and object profile particular roles as being semantically salient and as having discourse prominence, for example being topical (Goldberg 1995: 43–44). In this background, the role of grammatical

¹¹ Also obligatory oblique arguments are often regarded arguments of the clause. However, the discussion here focuses on the non-oblique, core arguments.

relations is relating an argument to a clause: grammatical relations are relations between arguments and their (clause level) constructions (Bickel 2010b).

It is difficult to characterize grammatical relations in semantic terms, as they are hugely polysemous (Croft 2001: 234) and range from actors to undergoers. Due to the difficulty of applying meaning-related criteria to defining grammatical relations, there was a shift towards prioritizing morphological and syntactic properties for determining grammatical relations (cf. Keenan 1976; Keenan and Comrie 1977). In this approach any syntactic construction, combinatorial rule or constraint can identify a grammatical relation (Bickel 2010b: 16). Such method of defining grammatical relations is based on the view that syntactic categories are best defined on the basis of their ability to fill the same positions in sentence structures (see section 2.2). However, the syntactic properties of a syntactic unit that is in several theories considered the same grammatical relation are not always identical. For example, although the Estonian active clause subject can occur as the antecedent of a reflexive pronoun, the passive subject in general cannot (see also Comrie 1989: 99–100 for an example with the elements of the English existential construction):

- (9) Ø Selle korteri ost-si-n enda-le.
 (I.N) this.G flat.G buy-PST-1SG self-ALL
 ‘I bought this flat for myself.’ (active transitive subject as an antecedent of a reflexive pronoun)
- (10) Politsei töö kergendamise-ks ol-i-d (ta-l_i) enda_{i/*j} kõrvale
 police.G work.G simplifying-TR be-PST-3PL s/he-AD self.G beside
 jäe-tud juhiloa-d_j.
 leave-PASS.PST.PTC driving.licence-N.PL
 He had a driving licence left next to him to make the police’s work easier. Lit.
 ‘(To him_i,) the driving licence_j was left beside self_{i/*j} to simplify the police’s work.’ (passive subject, the general impossibility of anteceding reflexive pronouns)

Due to such phenomena it has been suggested that grammatical relations are by nature **construction specific**, as well as language specific (incl. Croft 2001: 133; Barðdal 2006: 39; Bickel 2010b: 2).

According to Bickel (2010b) grammatical relations are **equivalence sets**: arguments are “treated the same way by some construction in a language, for example, being assigned the same case in a language, or triggering the same kind of agreement”. In many accusative languages the subject relation is for example determined as the argument in the passive construction that the predicate agrees with, or as the controllee of interclausal control constructions (the subordinate clause is deleted under coreference, see example (14) in section 3.4), among other possibilities. Furthermore, from the point of view of the case construction, a direct object in the partitive can be considered a different grammatical relation from a direct object in the nominative in Estonian (cf. Van

Valin 2005: 89ff. and section 4.4 on Estonian object marking). Instead of focusing on whether a language has a subject or any other relation or not, it is more informative to analyze in detail how each construction sensitive to grammatical relations defines these relations and describe what information these relations are influenced by (Bickel 2010b). The clustering of grammatical relations on the basis of distributional patterns is also a necessary precondition for a cross-linguistic explanatory theory of grammatical relations (Witzlack-Makarevich 2011: 7).¹²

Using a construction-specific approach to determining equivalence sets results in stating a large number of grammatical relations, because arguments have many morphosyntactic properties (Croft 2001). In linguistic description, it is often helpful to generalize over a number of (largely) coinciding equivalence sets and posit broader grammatical relations on the basis of a number of different criteria. I use the example of subject here to discuss the formation of such global (more general) grammatical relations (see also section 5.1.1 and Metslang to appear for the treatment of the global and construction-specific categories in Estonian).

Barðdal (2006) uses subjecthood criteria as a means for making predictions about the subject category. She shows that when a set of syntactic subjecthood criteria is identified, it is likely that it will turn out that not all subject-like arguments fulfil all these criteria, i.e. that they do not meet all the predictions and they are subject-like to a varying degree (cf. *ibid.*: 73–74). This was also shown in the study Metslang (to appear a). Whether subject-like arguments (like the ones discussed by Barðdal) will be regarded as full-fledged subjects, peripheral subjects or non-subjects depends on the approach of the researcher: whether s/he determines the global subject as a classical or prototype category and where s/he sets the boundaries of the category or its prototype. In Metslang (to appear a) the construction-specific morphosyntactic properties of different subject-like arguments are systematized and presented together in such a way that reveals the prototype effect of the global category. Recognizing overall global categories also allows to identify cross-linguistic prototypes. The classification of particular arguments may be influenced by different weights the researcher assigns to different criteria (cf. Comrie 1989; Aarts 2007; Gries 2003). Usually quantitative measures are used as a recognized method of weighing different features with respect to each other (Aarts 2007; Gries 2003). For example, in Estonian, case is a stronger subjecthood feature than word order as frequency-wise the subject's position varies, however A and S are always in the nominative.

¹² Such studies will be possible by using the empirical data in typological databases, for example the AUTOTYP database that has been developed at the University of Zurich and Univeristy of California, Berkley. It contains information about the distributions and variation of typological features, <http://www.spw.uzh.ch/autotyp/> (retrieved December 20th 2012).

So far we have talked about the semantics and formal features of grammatical relations separately. The second part of this subsection will look at the **semantic interpretation of constructions** and discuss how grammatical relations' semantics and grammatical form are linked together in constructions. The mapping between the form and meaning of constructions can be represented by linking rules (general semantic interpretation rules) or constraints (as in modular theories like Generative Grammar and its offshoots) or by construction-specific symbolic units or relations (i.e. pairings of grammatical form and corresponding meaning, as in Cognitive Grammar and Construction Grammar as described in section 3.1.3). According to Cognitive Grammar and Radical Construction Grammar, semantic structures of constructions construe situations by using conventionalized imagery and they are (similarly to syntactic structures) language-specific (Croft 2001: 109; Langacker 1987). The more fundamental level structure that underlies the semantic structure is the conceptual structure which concerns the content of our thoughts. It is one of several different ways to construe the experience being communicated. It is a (cross-linguistically) universal structure of conceptual knowledge for communication in human beings (Croft 2001: 105–110).

Croft (2001: 234–236) outlines the specific subactivities that are necessary for a hearer to understand, interpret an utterance. According to Croft, s/he has to (i) identify the constructions in the utterance, and (ii) in the case of each construction, then to access its semantic structure. Finally the hearer (iii) determines which element is which in the semantic and syntactic structures and (iv) identifies correspondence relations between syntactic and semantic elements in the construction. Croft regards iconicity (cf. Haiman 1980) as one of the main factors influencing the mapping between the form and meaning of constructions: every piece of syntactic structure corresponds to a matching part of the semantic structure (Croft 2001: 208, 236). However, Croft suggests that in addition to iconicity there are also other ways how the hearer can identify the semantic components corresponding to the syntactic elements of a construction (2001: 108, 235). He discusses several cues that help the hearer identify semantic structures (ibid.: 236–237). These include:

- word order and other role-identifying devices (e.g. case-marking, adpositions and agreement markers);
- the structure of the discourse (for example, in English an agentless passive clause is likely to be preceded by another agentless passive clause (Weiner and Labov 1983 as cited in Croft 2001: 237);
- the speaker's repetitions that provide semantically and syntactically less dense discourse (e.g. self-repairs, repeating the construction with different words).

It is probably also justified to add lexical items to Croft's list of cues helping to recognize semantic structures. For example content words can carry information

about their complements and their properties, about the manner of the action etc. (see section 3.1.1).

Interpretation of an utterance is often made more difficult when the main syntactic elements are meaning-wise not the exact building blocks of the construction, like in the following more complex example:

(11) The shop managed to run out of yogurt. (Croft 2001: 238)

In the syntactic structure the NP *the shop* appears in the position that is typically occupied by actors in the corresponding semantic structure (it is in the clause-initial subject position and if the present tense was used, the predicate verb would agree with the NP). Hence, this particular NP would be identified as an actor in the case of prototypical mapping between the elements of syntactic and semantic structures. However, the hearer of the utterance is expected to understand that despite the unusual conceptualization, the real actor of the situation might be the manager of the shop. Using Langacker's (1987) metaphor, Croft suggests that the morphosyntactic devices only provide a scaffolding, minimal cues, and not building blocks to the understanding of clauses (Croft 2001: 238; see also Cann and Miljan 2012 on the underspecified meaning of the case category¹³). Abandoning verb-determined grammatical relations in Radical Construction Grammar, allows us to move away from trying to putatively assign them to the semantic structure that is often not iconically linked to the syntactic structure. Constructionally determined grammatical relations are more loosely tied to the verb and allow such semantic underspecification (Croft: 237–240).¹⁴

As another example of scaffolding Croft discusses noun incorporation in Gunwinggu, an Australian language, citing Oates (1964). A function of noun incorporation in Gunwinggu is denoting part-whole relationship. However, as can be seen in (12) and (13), the referent of the incorporated noun can either be the part of an entity or the whole.

(12) bene-**dulg**-naŋ **mangaralaljmajn**.
 3DU-tree-saw cashew.nut
 '...They saw a cashew tree.'

(13) dja **baŋdadgen** **ŋale**-baye-ŋ galug
 and stone.axe handle-(3SG) bite-PST then
baŋdadgen **ŋale**-wogdayn
 stone.axe handle-(3SG) speak:PST
 [the chicken hawk] bit the handle of his stone axe and rattled its handle [arousing himself to kill the wirwiryag]. (Oates 1964; as cited in Croft 2001: 239)¹⁵

¹³ Cann and Miljan (2012) discuss the semantics and pragmatics of the partitive in Estonian (which is the most frequent object case) that is largely specified in the context.

¹⁴ Croft (2001) uses the term *syntactic roles* here instead of *grammatical relations*.

¹⁵ Emphasis added by the author of the dissertation.

In examples (12) and (13), the grammatical device incorporation only gives a minimal cue and not a full instruction for the interpretation of the relations between the entities.

Croft (ibid.: 146) proposes two implicational universals to predict crosslinguistic mapping between the semantics and form of arguments. He takes frequency as a predictor of the semantic prototypicality when doing this. The *Structural coding universal* states that the category with lower token frequency is encoded by at least as many morphemes as the category with higher token frequency. This means that the semantically less prototypical categories bear at least as many morphemes as the more prototypical categories. For instance, the subject as a central syntactic category usually bears the nominative case which has no inflectional marker, whereas adjuncts are marked by various semantic cases with overt inflectional morphemes. According to the *Behavioural Potential universal*, the category with higher token frequency will display at least as much grammatical behaviour as the category with lower token frequency (see the next subsection). In other words, the semantically more prototypical category will be able to participate in at least as diverse set of different (syntactic) behavioural constructions as the less prototypical one (this is an example of the distributional versatility aspect of prototypes, cf. section 2.4). For example, the Estonian intransitive subject participates in considerably larger number of syntactic behaviour constructions than the existential clause subject(-like) argument (Metslang to appear a).

3.4. Means of argument realization

Arguments can be realized in case and agreement constructions, in certain word order positions and contiguity groups, in the use of zero-anaphora, in different syntactic behaviour constructions (see below) and in the use of different prosodic means. Argument realization also concerns whether an argument can occur in certain clausal constructions at all (see also section 3.1). All these grammatical devices define grammatical relations.

The properties of arguments can be divided into coding features and behavioural features (Keenan 1976; for convenience, I sometimes use the term *morphosyntactic behaviour*, which denotes coding and syntactic behaviour together). Different studies define these notions differently.

One possible approach that is applied in this thesis is subsuming case, agreement, zero-anaphora and word order under the properties that *encode* events and their participants (coding properties). Croft (2001: 234) groups case-marking, adpositions, agreement markers and groupings based on things like contiguity and prosody together under the heading *coded dependences*. The role of coded dependences is (i) helping language users to identify which element in the construction is which and (ii) coding symbolic relations (i.e. a correspondence relation between a syntactic element and its counterpart semantic component in the construction).

Raising, control, antecedence of reflexives, relativization, passivization, etc. are regarded as (syntactic) behaviour properties – properties that make *reference* to participant roles (cf. Croft 2001: 35, 148–149). Subject control in Estonian is an example of a (syntactic) behavioural subjecthood property.

- (14) Ma luba-si-n Ø harjuta-da.
 I.N promise-PST-1SG (I) practice-INF
 ‘I promised to practice.’

In this behavioural construction, the subject of the matrix clause (*ma*) is coreferent with the subject of the subordinate clause (\emptyset (*I*)). In such constructions where the matrix clause subject controls the lower clause subject, the subordinate subject has to be deleted in Estonian. Occurrence in this deleted (controllee, pivot) position in the lower clause is a subject-defining property. Objects and adjuncts cannot take this position in Estonian (cf. Metslang to appear a). Another example of behavioural subjecthood constructions is object control where the matrix object is controlling the coreferent deleted pivot in the lower clause. Again, the pivot can only be the subject in this lower construction (see example (65) in section 4.6). Subject-to-subject raising is a construction where there is only a pivot but no controller in the sentence: the infinitival (lower) clause pivot occurs as the subject of the matrix verb, although it is not its semantic argument (see example (66) in section 4.6). In subject-to-object raising, the pivot is used as the matrix verb’s object, although it is actually the semantic argument of the infinitival verb (Van Valin 2005: 96; see example (67) in section 4.6).

A coding or behaviour construction can only be regarded as criterial for identifying a grammatical relation if it can clearly distinguish between different types of grammatical relations (for example between the subject and object); if a construction merely distinguishes agents from non-agents or topics from non-topics, it cannot be used as a subjecthood or objecthood criterion or the like. For example, in Metslang (to appear a) I assumed that from the viewpoint of clausal constructions, the prototypical transitive subject and the prototypical object are two distinct grammatical relations. I therefore chose subject behaviour criteria on the basis of the exclusion of the prototypical object.

In languages, the same argument can be treated according to the accusative schema in one coding or behaviour construction and according to the ergative schema in another (e.g. Croft 2001: 153–154). The hypothesis of the *Hierarchy of Grammatical Relations Constructions* has been proposed to make typological predictions on this (cf. Kazenin 1994; Croft 2003 and Bickel 2010b). The following instance is from Bickel (2010b):

- (15) Hierarchy of Grammatical Relations Constructions (Bickel 2010b)
 CASE > AGREEMENT > RELATIVIZATION / FOCUS / OPERATOR FLOATING > CONJUNCTION
 REDUCTION > COREFERENCE CONSTRUCTIONS / COREFERENCE MARKING

The hierarchy predicts that if grammatical relations in a language are ergatively-aligned in the constructions on the right hand side of the scale, then it is likely that they are also ergatively-aligned towards the left hand side of it. In other words, if a coreference construction like control treats the S and O argument in one way and the A argument in the other way, then it is likely that also the conjunction reduction construction (deletion in coordination) treats the S and O argument in the same way, and differently from the A argument. However, in several languages there are also counter-examples to this hierarchy (Bickel 2010b: 36). The Hierarchy of Grammatical Relations Constructions has also been applied in the analysis of phenomena that are not linked to ergativity (e.g. the grammaticalization of subjecthood properties on oblique subject-like arguments; Croft 2001: 155–159). This thesis shows that in Estonian the distribution of coding and behaviour properties of 10 different subject-like arguments supports this hierarchy (see section 5.1.1 and Metslang to appear for examples and discussion).

To summarize, the realization of even the same argument can be varied throughout coding and behaviour constructions, and this brings about different splits: differential argument marking (also called non-canonical argument marking) that includes various phenomena discussed under the names of differential subject marking, split intransitivity, fluid intransitivity, unergativity and unaccusativity, differential object marking, etc. (cf. Witzlack-Makarevich 2011 for discussion).

The rest of this section views differential subject marking (DSM) and differential object marking (DOM) – instances of argument coding that have many properties in common. DSM and DOM have been widely discussed in different theories and they have been defined in multiple ways. In their introduction to the volume on DSM de Hoop and de Swart (2009: 5) characterize it as a multifactor phenomenon that can express a variety of fine-grained distinctions. This extends to DOM as well. I will start the discussion on the issues on differential marking with two broad typological descriptions of the notions DSM and DOM (the definition of DSM is based on a recent optimality-theoretic study, and the description of DOM is from a general typological overview of grammatical relations).

“O arguments are mapped into different GRs [grammatical relations] ... for some construction, depending, mostly in a probabilistic rather than categorical way, on such referential properties as animacy, humanness, definiteness, specificity or more general notions of saliency.” (Bickel 2010b)

“DSM is a cross-modular phenomenon that is not triggered or constrained by semantic or pragmatic features in the input alone. Rather, it is the optimal outcome of a conflict between certain rules, which can be syntactic, semantic, pragmatic, morphological or phonological in nature.” (de Hoop and de Swart 2009: 5)

These descriptions differ in that while Bickel focuses on the referential properties of O that bring about differential mapping to coding constructions then de Hoop and de Swart also include other levels of grammar to the subject coding factors.

Regarding DSM, this thesis employs a rather wide definition that involves different layers of language: “In a broad sense, a language may be said to have DSM if some subjects have a different [c]ase, agree differently, or occur in a different position than others.” (Woolford 2009). In the literature the term DSM (or non-canonical subject marking) has been used with various kinds of splits in the marking of S and A in both accusative and ergative languages, caused by factors on any level of grammar (cf. Dixon 1994: 70–110; Witzlack-Makarevich 2011: 65–157; Woolford 2009 and section 3.5 below). This approach allows the incorporation of indexing and discrimination, split and fluid intransitivity and several other phenomena (see the beginning of section 3 and subsections 3.5.2 and 3.5.3). Narrower approaches (not used in this thesis) restrain the notion of DSM to the marking caused by subject features alone (Woolford 2009: 17, see also Witzlack-Makarevich 2011: 76) or more specifically, to the marking of semantically lower subjects (Aissen 2003) or to predicates’ argument structure based splits (cf. Witzlack-Makarevich 2011: 102).

Language-specific studies on Estonian show that it is possible to identify rather strict rules for the case-alternation of both the subject and object. For example, there are few exceptions to the rule that negation requires partitive object-marking in Estonian. The article Metslang (to appear b) studies whether there are also any statistical preferences for object’s and the existential construction’s e-NP’s (i.e. the non-canonical subject / subject-like argument) case across different semantic, coding and message-packaging properties. However no such biases were identified (cf. section 4.4 for earlier findings on Estonian object-marking and sections 5.2.1 and 5.2.3 and Metslang to appear b for the analyses of this thesis). Examples (16) and (17) illustrate DSM in Estonian. The intransitive construction’s subject only occurs in the nominative, the verb agrees with it and it is normally clause-initial. The e-NP can occur in the partitive, can lack verbal agreement, and is usually clause-final (see section 5.2.1 for the analysis of e-NP’s case-marking).

(16) Elisabeth leba-s ristseliti sohva-l.
 Elisabeth.N lie-PST.3SG on.her.back sofa-AD
 ‘Elisabeth was lying (on her back) on the sofa.’ (subject of intransitive construction)

(17) Maa-s ol-i rohtu.
 ground-INE be-PST.3SG grass.P
 ‘There was (some) grass on the ground.’ (the existential construction’s e-NP)

Estonian object case alternates between the partitive (18) and what is called total cases in Estonian linguistics (cf. section 4.4; the latter involve the nominative and genitive and one of their functions are marking perfective aspect and inclusive, total quantity of the referent), see example (19).

- (18) Osta-me oma tehnika-t / masina-i-d Austria-st.
 buy-1PL our.G technology-P / machine-P-PL Austria-EL
 ‘We are buying our technology / machines from Austria.’ (HM) (object’s partitive case caused by imperfective aspect and referent’s non-inclusive quantity)
- (19) Ost-si-me oma tehnika / masina-d Austria-st.
 buy-PST-1PL our.G technology.G / machine-N.PL Austria-EL
 ‘We bought our technology / machines from Austria.’ (HM) (object’s total case caused by perfective aspect and the referent’s inclusive quantity)

3.5. Argument realization factors

The previous subsection looked at how arguments can be realized in grammar. This section discusses more in detail the factors that motivate different ways of argument treatment. Witzlack-Makarevich shows that several coding and behaviour constructions make the selection which arguments can participate in them very simple – this is selected on the basis of argument roles (2011: 62–63). She gives an example from Nias, an Austronesian language where an argument’s case merely depends on whether the argument is an S, A or O. Also the traditional categorization of languages into alignment types (accusative vs. ergative languages; cf. Plank 1979) relies on a classification method purely based on argument roles (cf. Witzlack-Makarevich 2011: 63 and section 3.6 below). This thesis looked at subjecthood properties in Estonian and identified 14 coding and behaviour constructions that, without any additional restrictions, distinguish A and S arguments from O (see section 5.1.1 and Metslang to appear a).¹⁶

However, often the choice of case-marking, agreement and other coding and behaviour devices depends on a more complex set of factors. On the fundamental level these means are used for expressing the asymmetric organization of participants. Bickel (2004) summarizes this phenomenon by showing that in most situations, some participant is more prominent than the other(s) in a particular sentence or discourse. The more prominent arguments tend to

¹⁶ When saying this I only consider the (prototypical) A and S of unmarked clauses (i.e. the clauses where the main clausal topic is realized as the grammatical subject) and not the subject-like arguments of marked clauses (see sections 4.2 and 5.1.1 for details). In addition, some properties included in the study are statistical and/or dependent on referential and other properties.

gravitate towards topical positions. They are privileged antecedents for reflexivization and other anaphora. However, Bickel argues that there is a great variation in languages whether these arguments also get privileged morphological and syntactic treatment (ibid.).

There is a complex network of relations between the argument realization devices (case, agreement, control, etc.) and factors (animacy, predicate's form, etc.). The factors that influence an argument's occurrence in criterial morphosyntactic behaviour constructions include for example topicality, animacy and case (Bickel 2004: 90–97; Kroeger 2004: 104; Van Valin and LaPolla 1997). This thesis also suggests that clausal construction (clause type) can determine an argument's occurrence in behavioural constructions (see section 3.1.3 on the notion of clause type and section 5.1.1 and Metslang to appear on the analysis of the factors of Estonian subjecthood behaviour). Dixon (1994: 70–110) presents a comprehensive system of **differential argument marking factors** that includes:

- 1) referential factors (animacy, definiteness, etc.);
- 2) lexical predicates and generalized predicate classes;
- 3) clausal conditions that include tense, aspect and mood, the morphological form of the predicate, matrix vs. lower clause, polarity and other arguments in the clause.

This system is used especially in accounting for coding distinctions. This list is not exhaustive but presents the typologically better-known possibilities (see also Witzlack-Makarevich 2011: 73–157). In the following I will discuss each of these factors more in detail and comment upon how they are applied in this thesis.

3.5.1. NP's referential properties as factors of argument realization

The NP's referential features are one of the main determinants affecting argument realization:

“The grammatical relations of many languages rather favour animates than inanimates, known than unknown referents, etc. These properties can determine for example inclusion/exclusion from the subject, object or some other category (e.g. only the semantically higher, more agent-like entity can occur in the subject position), case-assignment (e.g. animate O receives dative marking and inanimate O receives nominative marking), agreement rules, etc.” (Bickel 2010b: 410; see also Givón 2001: 200, 220–221)

In typology, this kind of discourse rank or referents' social importance is organized by referential hierarchies (cf. among others, Silverstein 1976; Moravcsik 1978; Comrie 1981; Givón 2001; Bickel and Nichols 2007). Bickel summarizes them as follows:

- (20) Referential hierarchies (Bickel 2010b: 410)
 SPEECH ACT PARTICIPANT > KIN/NAME > HUMAN > ANIMATE > INANIMATE > MASS
 SPECIFIC > NONSPECIFIC REFERENTIAL > GENERIC/NONREFERENTIAL
 KNOWN/TOPICAL/THEMATIC/DEFINITE > NEW/FOCAL/RHEMATIC/INDEFINITE
 SINGULAR > PLURAL

Less typical fillers of participant roles (e.g. A low in animacy, O high in definiteness) are likely to receive overt coding (case or adpositions). For instance, it has been suggested that in many languages, O arguments that are higher on hierarchies of prominence, animacy, definiteness and the like receive different case-marking from the O arguments lower on the hierarchy (Comrie 1989).¹⁷ Several approaches predict that in various languages, higher O arguments should carry overt (accusative) case-marking in contrast to lower O arguments, which carry no overt case-marking (i.e. be in the unmarked nominative) (Witzlack-Makarevich 2011: 76). This is because higher Os are more likely to be mistaken for a subject (i.e. for the reasons of discrimination; Croft 2001: 234). Often more than one of these dimensions listed in (20) co-determine argument realization. Thematic importance reflected by these hierarchies is an aspect of topicality that also statistically determines whether the referent remains topical in the subsequent discourse or will not be mentioned again (Givón 2001: 198–199, 455–456). Recent quantitative studies have cast doubt on whether the case-marking predictions that referential hierarchies make can be regarded as a cross-linguistic universal (Bickel and Nichols 2008; Bickel et al. to appear). See section 5.2.3 on the application of the Referential Hierarchy on Estonian subject and object case-alternation data and section 5.1.2 for the discussion on how the referential properties are statistically distributed among different argument types in Estonian and how they in this way help to determine grammatical relations.

As mentioned above, different argument marking devices like case and agreement tend to treat arguments differently. Bickel (2008) finds that as case is realized on NPs, it is more closely related to nominal reference and therefore more sensitive to referential distinctions (as in (20)) than agreement is. Agreement is different from case in the sense that it codes the more prominent participants that are often left unexpressed by NPs, as they are highly accessible (Croft 2001: 234–235). It is cross-linguistically also more common that case treats arguments according to the ergative schema than agreement morphology (in languages, the set of different arguments that can bear some grammatical case is usually larger than the set that can be indexed by agreement; see the Hierarchy of Grammatical Relations Constructions in section 3.4).¹⁸

¹⁷ Comrie uses the abbreviation P instead of O.

¹⁸ By grammatical case I mean a case expressing grammatical relations like subject or object, as opposed to semantic cases that express various specific semantic roles.

3.5.2. Lexical predicates as factors of argument realization

It is typologically very common that verbs determine the coding frame of their arguments. Sections 3.1.1 and 3.1.4 looked at the verbs' impact on whole argument structures. This subsection looks at their influence on particular argument marking alternations. A wide-spread argument marking split in the world's languages is **split intransitivity**, where the alternation of the intransitive subject marking is determined by the choice of the lexical predicate verb. Analyzing split intransitivity allows for comparing languages in terms of verb classes that choose different subject marking patterns (e.g. by case, agreement or word order). These verbs assign marking on a fixed basis. According to the definition, the intransitive subject's case should be the same every time it co-occurs with a given predicate verb (Dixon 1994: 71–83; Witzlack-Makarevich 2011: 131, 136).

Nichols (2008) carried out a study in the field of lexical typology (a subfield of typology introduced in Nichols et al. 2004) that looks at split intransitivity.¹⁹ It describes the use of split-prone intransitive verbs in a sample of 40 languages and places them on a continuum on the basis of how common A-like or O-like marking is on the S argument (i.e. S_A and S_O-marking, Nichols' S.a and S.o, see Figure 4). She looks at both head-marking and dependent-marking languages, hence coding is not only delimited to case in this study but can also manifest in agreement etc. The verb list includes verbs denoting human action, perception, emotion and sound (Nichols 2008: 129–130, 136–137).

In Figure 4, the predominantly ergative languages cluster in the top left and the mainly accusative languages in the bottom right corner. Languages with high scores in split intransitivity are in the centre. Hence, split intransitivity is a dominating feature in some languages, while in other languages the classes of verbs with non-canonical S-marking are marginal. In Figure 4, Finnish is placed among strongly accusative languages. Although O-like marking of e-NPs is widespread in Finnish (like it is in Estonian), the phenomenon is better described by fluid rather than split intransitivity (see the next section) which is one of the reasons why Finnish received such a high accusativity score.

¹⁹ Nichols uses the term *stative-active* instead of *split intransitivity*. In addition to split S marking discussed here, Nichols also studied split A marking.

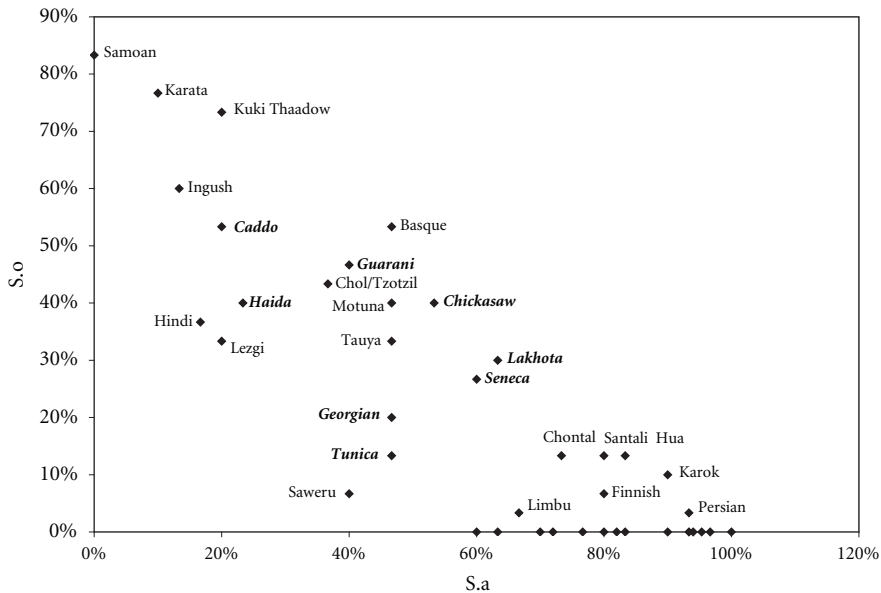


Figure 4. Degrees of split intransitivity in different languages. (Every language received its S_A and S_O scores on the basis of the percentages of intransitive subject marking in the set of example sentences in the verb list survey results.)
Source: Nichols (2008: 130).

Onishi (2001) identifies five semantic predicate classes that are cross-linguistically prone to the use of non-canonical arguments. For example, he suggests that the verb class of *possession, existence and lacking* marginally also takes non-canonical subject-like arguments in the Finnic languages.

In this thesis I was unable to find evidence for split intransitivity in Estonian: although there are large open classes both for the verbs that only allow nominative subjects and for the verbs that allow subject case alternation between S_A and S_O (intransitive subject and e-NP), there are no clear instances of verbs that only take partitive subjects (Metslang 2012).²⁰

3.5.3. Clausal factors as determinants of argument realization

Another common case of differential marking of intransitive subjects is the **fluid intransitive** pattern. In this case, the argument marking reflects constructional or conceptual properties. By the definition of fluid intransitivity, each intransitive verb has the possibility of two kinds of marking for its core

²⁰ An exception to this is the verb *piisama* 'to suffice', which can take a partitive or elative but not a nominative argument.

NPs (Dixon 1994: 71–83; Witzlack-Makarevich 2011: 131, 136). Hence, fluid intransitivity concerns both the factors discussed in this subsection and section 3.5.1. In the Finnic languages, subject case, agreement and word order alternations represent the fluid type (see the examples (7) and (8) in section 3.1.2 for the word order distinction, section 5.2.4 and Metslang to appear b on the discussion of the topicality-related fluid intransitivity in Estonian).²¹ Dixon’s and Witzlack-Makarevich’s classifications of constructional and clausal factors affecting arguments’ case or other realization devices involve the following grammatical phenomena:

- a) tense, aspect and mood (e.g. in Georgian, the main predicate class’ arguments’ case and agreement depend on particular combinations of these three properties; Witzlack-Makarevich 2011: 140–142. Often the explanation of such splits involves a mix of pragmatic factors as well; Bickel and Nichols 2008: 320);
- b) morphological form of the predicate (in Estonian, converbs make their objects partitive);
- c) ‘clause type’ (main vs. subordinate clause; for example in the Nilotic language Pāri, S is usually treated like O but in purposive clauses it is treated like A; Dixon 1994: 103);
- d) polarity (in Estonian, objects and e-NPs occur in the partitive in negation – this phenomenon could also be treated under (b));
- e) scenario (the role and referential properties of arguments of a clause can affect the realization of other arguments; Bickel 2010. Bickel also explains a syntactic phenomenon in Finnish with scenario: the lack of overt subject NP in imperatives causing the use of the nominative instead of the usual accusative. This grammatical phenomenon, also present in Estonian, could also be treated under (b)).

Examples (21)–(23) demonstrate that the Estonian imperative requires the total case object to be in the nominative (conditions b and e):

- (21) Ta sõ-i küpsise.
s/he.N eat-PST.3SG biscuit.G
‘She ate a biscuit.’ (the use of a genitive total object in non-imperative context)
- (22) Söö küpsis!
eat.IMP.2SG biscuit.N
‘Eat a biscuit!’ (the use of a nominative total object with the imperative)

²¹ In the case of Estonian fluid intransitivity, the subject case and agreement constraints determine the alternation between *only nominative* and *nominative/partitive case* and between required and optional verbal agreement respectively. The subject position alternates between preverbal and postverbal position, depending on clausal and information structural factors (Metslang to appear a).

- (23) *Söö küpsise!
 eat .IMP.2SG biscuit.G
 Intended: ‘Eat a biscuit!’ (the impossibility of the use of the genitive total object with the imperative)

Subsections 3.5.1–3.5.3 discussed Dixon’s and Witzlack-Makarevich’s classifications of argument realization determinants, including the effect of NPs’ referential properties, lexical predicates and clausal/constructional factors on influencing case and other argument coding. In addition to these, there are some other determinants that were not discussed here that can play a role in influencing argument realization (e.g. nouns’ inflectional classes and the specific nature of morphological forms; Bickel & Nichols 2008: 320; Witzlack-Makarevich 2011: 93).

3.6. Alignment of arguments

This section looks at the argument realization phenomena from the angle of alignment. Alignment is a clustering that holds between sets of arguments that have the same formal treatment (e.g. case or agreement) in some context. According to the recent view, alignment patterns define construction-specific and language-specific grammatical relations (Bickel and Nichols 2008: 305). Arguments can receive the same or different treatment by a specific construction, e.g. so that they can all trigger the same agreement paradigm on the verb, or so that they can all be assigned the same case-marking. In this way the arguments can be subsetted or *aligned* with each other (Bickel 2010b; emphasis added; as it was discussed in section 3.3, grammatical relations are defined on the same basis).

Alignment has been of great importance for multiple typological studies, for instance on case-marking, agreement, word order and their mutual relationships (e.g. Dryer 2002; Greenberg 1963; Nichols 1992; Siewierska 1996, etc.). In the world’s languages, several different alignment types have been found, the most wide-spread ones of which are accusative and ergative alignment. According to the definition of accusative alignment, the coding and behaviour constructions treat the S and A argument in one way and the O argument in another way (for instance, in Estonian S and A bear the nominative case whereas O is usually in the partitive or genitive). In ergative alignment, S and O are treated in the same way, while A is treated differently. Dixon (1994: 10) brings the following examples of ergative alignment from Dyirbal, an Australian language:

- (24) ŋuma banaga-n^yu
 father+ABS return.NONFUT
 ‘father (S) returned’

- (25) η uma yabu- η gu bura-n
 father+ABS mother-ERG see-NONFUT
 ‘mother (A) saw father (O)’

According to Givón (2001: 203), the languages where accusative case alignment dominates have pragmatically-oriented case-marking that is designed for coding the grammatical subject and direct object, regardless of semantic roles or transitivity. DuBois (1985: 355) suggests that in accusative languages there is discourse pressure to roughly mark both topics and agents. In the latter, DuBois’s view differs from Givón’s but due to the great diversity in the semantic roles of intransitive subjects, agentivity is indeed a less frequent property of subjects than topicality. In predominantly accusative languages, the subject and topic role are merged to a large extent, and the subject role is preferentially filled by higher positions of the Referential Hierarchy that are inherently more likely to be topical (cf. Bickel: 2010b). In (predominantly) ergative languages, there is discourse pressure to roughly mark new information (DuBois 1985: 355).

The argument types do not always have uniform marking: there are several splits in the realization of S, O as well as A in the world’s languages (splits in Estonian S and O marking were already discussed in section 3.5.3). Usually there are no clear alignment types in languages (one cannot speak of e.g. fully accusative or split intransitive (active-stative) languages), it is rather only possible to distinguish dominating and less wide-spread alignment tendencies in individual languages.

A great majority of alignment studies focus on head and dependent marking, especially on case and agreement. Word order is less frequently cited as a determiner of alignment. Yet it has been typologically attested that word order can code accusative and ergative alignment, as well as split intransitivity (Donohue 2008: 27–28). As mentioned above, this thesis suggests that there is a word-order based split in intransitive subject marking which can be characterized by the notion ‘fluid intransitivity’. Word order is also found to have some correlations with case and agreement marked alignments (Siewierska 1996).

4. TREATMENT OF GRAMMATICAL RELATIONS IN ESTONIAN LINGUISTICS

Estonian is a morphologically rich language, and perhaps this is why the discussion on the realization of Estonian simple sentence arguments has largely focused on their case-marking. The most comprehensive descriptions on simple sentence clause structure in Estonian include Rätsep's (1978) monograph and the reference grammar of Estonian (Erelt et al. 1993). The theoretical foundations of Rätsep (1978) lie in the generative approaches to linguistic description, while those of of Erelt et al. (1993) largely lie in functionalist theories and also in constituency grammar. In the following I will outline some prevailing ideas in Estonian linguistics about Estonian simple sentence clause structure and clausal construction types. I will also discuss the predicate verb's and the whole construction's impact in conditioning the occurrence and coding of arguments in them, and the coding and behaviour properties of the primary grammatical relations, subject and object, as well as of extent adverbials (a subtype of adverbials that has properties in common with the object).

4.1. Constructions and lexical predicates as determinants of argument realization

Similarly to the approaches outlined in section 3.1, the generation of (influence on) argument structure frames has been attributed both to verbs and whole clauses in Estonian linguistics. Erelt et al. (1993: 17–18) state that the verbal predicate is grammatically, and usually also semantically, the central axis of the Estonian sentence structure. Erelt et al. maintain that the Estonian verb determines the number of its bound complements, as well as their semantics and form possibilities. By doing that the verb shapes the clause's syntactic and semantic structure. The predicate verb determines the semantic nature and meaning structure of the situation that is being depicted by the clause, as well as the situation's relationship with the reality (time, communicative function, modal evaluation, etc.). They also show that the verb's semantics determines the arguments' thematic roles.²² From the formal viewpoint, in Erelt et al.'s approach, government is regarded as a phenomenon where both the lexical meaning and grammatical form of the head can influence the dependent's grammatical form. An instance of the latter is the impersonal verb form's impact on the object's case:

²² As Erelt et al. (1993) treat thematic roles and macroroles in a way very close to the views described in 3.2, I will not discuss them in this section.

- (26) ... kuhu ehita-takse järgmine varjualune.
 where build- IMPERS next.N shelter.N
 ‘... where the next shelter will be built.’ (nominative total object governed by the impersonal verb form)

Rätsep (1978: 63–64), on the contrary, classifies the grammatically determined object case as an instance of grammatical agreement and not as government. In his definition, grammatical agreement is the case when the dependent’s form is determined by the head’s grammatical form. Hence in his view object case can be determined both by government and agreement. However, regarding situations like in example (26) the agreement account feels counterintuitive as the head’s and dependent’s forms are different.

Rätsep (1978) looks at the government relations between the verb and its bound complements in Estonian and presents a list of 380 generalized *elementary sentences*. The list aims towards an exhaustive description of Estonian simple clause patterns and consists of about 12,000 specific *verb-governed sentence patterns* of nearly 6000 different verbs. In Rätsep’s approach, argument realization can depend on general semantic features of the main verb (e.g. static, causative) or the verb’s whole meaning (a rich detailed set of meanings). They both can condition the complement’s (i) precise grammatical form, (ii) set of different alternative forms or (iii) the use of a complement belonging to a class of semantically close grammatical forms. The set of alternative forms (option ii) is defined for example in the following pattern:

- (27) Verb-governed sentence pattern No. 17.0. (Rätsep 1978: 108)
 $N_{\text{NOMINATIVE}} V N_{\text{NOMINATIVE/GENITIVE/PARTITIVE}}$
 Jaan remont-is oma korteri.
 Jaan.N repair-PST.3SG own flat.G
 ‘Jaan repaired his flat.’ (meaning: the repair work is completed)²³

The same pattern allows the use of a partitive post-verbal NP:

- (28) Jaan remont-is oma korteri-t.
 Jaan.N repair-PST.3SG own flat-P
 ‘Jaan was repairing his flat.’ (meaning: the repair work is ongoing at the time the speaker is referring to) (HM)

With the plural, also a nominative post-verbal NP can be used:

- (29) Jaan remont-is oma korteri-d.
 Jaan.N repair-PST.3SG own flat-N.PL
 ‘Jaan repaired his flats.’ (meaning: the repair work is completed) (HM)

²³ It is common to emphasize perfective aspect with a resultativizing particle: *Jaan remontis oma korteri ära*. ‘Jaan repaired his flat.’ (see section 4.4).

Hence, in Rätsep’s pattern, the verb determines a complementary distribution of this post-verbal NP (see also examples (48)–(50) in section 4.4). The notion *substitution classes* is used to describe the cases when the verb determines the use of a class of semantically close grammatical forms (option iii). Rätsep’s substitution classes contain case forms, adpositions and adverbs, and are grouped on the basis of their semantic features. Substitution classes include for example *extralocal directionals* with the meaning ‘from somewhere’, ‘source’ or ‘a place where a participant leaves’ that contains for example the elative and ablative case, adpositions *alt* ‘from under’ and *vahelt* ‘from between’ and the adverb *eemalt* ‘from distance’. Another example of the substitution classes is *intralocal state modals* that have a dynamic, directional meaning component. They denote the position that a participant takes. The class involves adverbs like *lahti* ‘to the open position’, *istukile* ‘to the sitting position’, etc. (Rätsep 1978: 43–51). Compare the uses of close members of the same substitution class in examples (30) and (31) below.

- (30) Peeter jõi-i **pudeli** **seest** piima.
 Peeter.N drink-PST.3SG bottle.G from milk.P
 ‘Peeter drank milk from the bottle.’

Hence, the verb determines its complements’ form in a general way: it determines the set of alternative case uses (option ii) or a significant semantic feature of the form (like the verb *jääma* ‘to stay, remain’ requires as a bound complement an intralocal state modal, e.g. *Aken jä-i lahti* [window.N stay-PST.3SG open] ‘The window stayed open.’; option iii) (ibid.: 49). Often the verb does not determine its complement’s specific case or adposition. Rätsep suggests that this specific form is rather determined by the whole clause (ibid.: 259). This is interesting because Construction Grammar suggests that verbs have more specific frame-semantic knowledge than constructions do (see section 3.1.4). Estonian object data shows the importance of Dixon’s and Witzlack-Makarevich’s classification of different level argument realization factors (see section 3.5; see also section 4.4 on Estonian object’s case-assignment factors).

Rätsep also finds that the lexical meaning of the verb influences (in addition to case-marking) the order of the members of the context free elementary sentence.

Rätsep distinguishes between three kinds of complements: obligatory and optional bound complements and a class that he calls *vabad laiendid* (free subordinate members of the clause). The verb requires the existence of obligatory bound complements in the clause, and governs their form (cf. both arguments in (28)). The optional bound complements are not obligatory in the clause, but if they are used the verb still governs their form:

- (31) Verb-governed sentence pattern No. 2.1.40. (ibid.: 82)
 N_{NOMINATIVE} V (Extralocal directional) (N_{NOMINATIVE/GENITIVE/PARTITIVE})
 Peeter jõe-i (pudeli-st) (piima).
 Peeter.N drink-PST.3SG bottle-EL milk.P
 ‘Peeter drank (milk) (from the bottle).’

This pattern has two optional bound complements, the extralocal directional and a noun that can occur either in the nominative, genitive or partitive (i.e. the direct object). The use of these optional forms is governed by the verbs *jooma* ‘to drink’ and *sööma* ‘to eat’.

The treatment of obligatory and optional bound complements determines the difference between verb-governed sentence patterns and elementary sentences. Verb governed sentence patterns also involve optional bound complements while the elementary sentences do not. This sentence pattern in (31) belongs to the elementary sentence N_{NOMINATIVE} V.

Rätsep’s class called *free subordinate members of the clause* involves phrases that depict place, time and other circumstantial phenomena. Strictly speaking, they are not complements: in most cases they are optional adjuncts (1978: 15). However in some cases their use is mandatory:

- (32) Isa jä-i üksinda.
 father.N remain-PST.3SG alone
 ‘(His) father was left alone.’ Lit. ‘Father remained alone.’ (Rätsep 1978: 51)

The sentence would be ungrammatical without this element:

- (33) *Isa jä-i.
 father.N remain-PST.3SG
 ‘*Father remained.’ (Rätsep 1978: 51)

As Rätsep’s aim is to describe basic sentences, his patterns are context-free. Such patterns rely on the verb – the central member of the clause – and the elements that are determined by it. These patterns form the foundation for further linguistic descriptions. Rätsep suggests that his study could be built upon by providing the identification of other elements and features of the clauses, describing the patterns’ modification rules, and binding simple clauses into more complex units, among other things. (ibid.: 243).

It has been shown above that Rätsep regards the lexical meaning of the head, and not the whole construction, as the primary factor influencing the dependents’ form (or choice of forms). This also seems to be the view of Erelt et al. (1993: 8). Rätsep’s rationale for regarding lexical semantics as a determinant of case-marking is based on facts of verbal polysemy, the equivalence of different frames that are determined by the same verb, the similarity of similar verbs’ argument coding frames, the frames of deadjectival verbs and nominalizations, as well as the impact of semantic specificity and

concreteness (1978: 233–235). In the following I will look at these phenomena closer.

Polysemous verbs tend to have different sentence patterns for each sub-meaning. Often, though not always, verbs with similar semantics belong to the same or similar patterns. For example the pattern N_{NOMINATIVE} V Loc (the substitution class Locatives) involves verbs like *elama* ‘to live’, *asuma* ‘to be located’, *majutuma* ‘to be accommodated’, and *ööbima* ‘to stay overnight’. In the case of deadjectival verbs, the source adjective’s complement preserves its case also in the derived verb’s case frame. For example:

- (34) Paat on vee-st tühi.
 boat.N be.3 water-EL empty
 ‘The boat is empty of water.’ Lit. ‘The boat is empty from water.’ (the elative argument is determined by the adjective)
- (35) Paat tühje+ne-s vee-st.
 boat.N empty+AUTO-PST.3SG water-EL
 ‘The boat was getting empty of water.’ Lit. ‘The boat was emptying (itself) from water.’ (the elative argument of the deadjectival intransitive verb is determined by the underlying adjective)
- (36) Poiss tühje+nda-s paadi vee-st.
 boy.N empty+CAUS-PST.3SG boat.G water-EL
 ‘The boy emptied the boat of water.’ (the elative argument of the deadjectival transitive verb is determined by the underlying adjective)

In addition the form of nominalizations’ arguments depends on the deadjectival verb’s stem, e.g. *paadi tühje+nda+mine vee-st* [boat.G empty+CAUS+NMLZ.N water-EL] ‘the emptying of the boat of water’. Rätsep also gives an identical set of examples with the adjective *vaba* ‘free’.

Rätsep observes the tendency that the verbs with a very general, vague meaning allow for a larger number of different patterns than verbs with a more specific meaning. Also the sentence patterns of concrete uses of polysemous verbs (in clauses depicting situations with a concrete meaning) are richer and more complex than the patterns of abstract verb uses. The patterns of concrete verb uses have a wider choice of optional bound complements and alternating object cases (ibid.: 236–237).

This allows one to conclude that Rätsep (ibid.: 236–237) is demonstrating the prototype effect of verbal meaning in relation to polysemy. Rätsep himself does not use the term *prototype* here, but instead talks about the *primary* and *secondary meaning of the verb*. Rätsep’s primary meaning (concrete uses) of verbs can be regarded as being more prototypical than his secondary meaning (abstract uses) of the same verbs. This complies with Goldberg’s (1995) view on semantic prototypes of constructions where the member with a simple concrete meaning is the best candidate for the constructional prototype. This

also goes along with Aarts' (2007) and Croft's (2001) views that grammatical prototypes are used less restrictively and they also occur in more construction types (see section 2.4).

These factors lead Rätsep to the conclusion that it is either the whole verb's semantics or its particular semantic features that determine the argument's patterns. However in the case of the examples of verbal derivation (deadjectival verbs and nominalizations), one could also argue that it is merely lexically determined that adjectives like *tühi* and *vaba* require elative arguments; it is not directly caused by the adjective's semantics. Although these uses depict relatively basic physical (and not abstract) situations, the prototypical extralocal meaning of the elative case is less evident here (compare the non-prototypical use of the elative case in (35) and (36) with the prototypical use in example (31); see also (61) in section 4.6 for another less clear motivation of the elative use). The link between the verb lexeme and the coding device in (35), (36) and (61) can be considered a rather opaque instance of government which does not prove the particular importance of verbal semantics in governing sentence patterns.

Hence, the impact of lexical semantics on coding (including argument coding frames) seems to be less global in Estonian than Rätsep suggests. This is also supported by his division of all the verb-governed sentence patterns into three groups on the basis of the semantic similarity of their predicate verbs (*ibid.*: 235) which are the following:

- 1) patterns containing verb groups with very general common semantic features (or with features among which it is difficult to find anything in common), e.g. intransitivity. Some of these patterns contain a very large number of verbs;
- 2) patterns that contain only one verb;
- 3) patterns of verbs with close meanings.

It is only the last group of patterns that is formed on the basis of their verbs' meaning and where the verb's semantic impact on the elements' coding is clearly visible. This implies that in other cases, other factors play a role in argument realization, including the impact of the whole clausal construction. Rätsep also admits that the syntactic information in his sentence patterns is often too scarce for allowing mapping between the semantic and syntactic features in them. He suggests that if more detailed syntactic information was presented in those patterns, the currently heterogeneous groups could be separated into semantically more homogeneous ones (*ibid.*: 236). However, it is likely that not all patterns can be directly linked to a common (synchronic) meaning. Etymology, grammaticalization, arbitrariness and other factors can also play a role in lexically-tied argument realization in place of it.

When studying a specific type of Estonian simple sentences, the existential constructions, Nemvalts also concludes that although Estonian sentence structure is largely verb-governed, this is not the case in many existential

clauses. Here it is also the whole construction that conditions the case-marking of the e-NP, and not merely the verb (2000: 31, 105–109). It is characteristic for existential constructions that the most frequent predicate verb in them is *olema* ‘to be’, which is also used in a large number of other patterns, including as a copula in predicative constructions. See also Metslang (2012) for a discussion of the verbs’ and constructions’ impact on the case of the e-NP. How frequently constructions and lexical predicates occur as factors influencing O’s and e-NP’s case in the corpus data is presented in Table 6 and Figure 6 in section 5.2.3.

4.2. Clause types as determinants of argument realization

Estonian arguments realization has been discussed as being specifically tied to particular basic *simple sentence clause types* (clause types for short; Erelt and Metslang 2006; see also Erelt et al. 1993; Huumo 1993; Erelt 2005; Nemvalts 2000). As these clause types involve a distinctive subject or subject like argument(s) and in some cases also object, they have also been looked at in this thesis (Metslang to appear a, b).

Clause types can be regarded as highly schematic clause level constructions of Construction Grammar (cf. Goldberg 1995; Croft 2001). Clause types differ in how the main clausal topic and several morphosyntactic, semantic and information structural properties are realized (Erelt and Metslang 2006). Erelt and Metslang’s approach divides clause patterns into two basic types: unmarked basic clauses and marked basic clauses. The *unmarked basic clauses* (‘unmarked clauses’ for short; see example (30) in section 4.1) are multifunctional and the main clausal topic is realized as the nominative fully grammaticalized subject (ibid.: 254). The unmarked basic clause type involves transitive clauses and the intransitive clauses that meet the above requirements. The *marked basic clauses* (‘marked clauses’) are monofunctional. As the authors show, the clausal topic is not a fully grammaticalized subject in these clauses but an adverbial, oblique or object (see example (17) in section 3.4). The monofunctional clauses are defined in terms of their pragmatic, semantic and coding properties (Erelt and Metslang 2006; Nemvalts 2000: 41). Semantically they express the situation types basic to human experience: possessive relations, existence, experience and result. This is close to Goldberg’s view on basic clause types (or argument structure construction types; cf. section 3.1.3). In Estonian linguistics these constructions have been characterized as follows (cf. Erelt and Metslang 2006; Erelt et al. 1993; Erelt 2005; Nemvalts 2000):

- The **existential** clause is a basic clause type that is used for presenting a new entity in the discourse by stating the existence of a referent in a spatial or temporal location (see example (8) in section 3.1.2 and (17) in section 3.4). The clause type is based on the location schema (cf. Heine 1997: 92) and contains as the only obligatory components the predicate verb and an

NP whose referent is being introduced into the discourse and that occurs either in the nominative or partitive. Usually there is also a topical adverbial in the clause that marks the spatial or temporal location.

- The **possessive** clause is a basic clause type that is also expressed by the location schema. It contains an adessive NP with the possessor meaning, the predicate verb ‘to be’ and a nominative NP with the possessee meaning that can take the partitive under certain circumstances. For example:

(37) Ta-l ol-i punane auto.
s/he-AD be.PST.3SG red.N car.N
‘He had a red car.’

- The **experiential** clause type has been defined very broadly. It involves very different grammatical constructions that are often only united by the experiential meaning. The experiencer argument is usually the topic, and is either marked by the allative, adessive or partitive case (in the case of the first two, the clauses tend to have a similar structure and meaning with possessive clauses; in the case of the third case use, the clause is an atypical transitive clause; cf. Lindström 2012 for a recent treatment). The verb is either ‘to be’ or some mental verb. The stimulus argument is either a nominative or partitive NP or a nominative adjective. For example:

(38) Ta-lle meeldi-b fotograafia.
s/he-ALL be.likeable-3SG photography.N
‘He likes photography.’

(39) Min-d huvita-b fotograafia.
I-P interest-3SG photography.N
‘I am interested in photography.’

- The **source-marking resultative** (change of state) construction is a clause type containing as the only obligatory components an elative NP marking an entity that changes its state, the predicate verb and a nominative or partitive NP marking the resultant state.

(40) Maria-st sa-i õpetaja.
Maria-EL become-PST.3SG teacher.N
‘Maria became a teacher.’

See also section 3.1.3 for a comparison between marked and unmarked clause types.

Several common properties have been found between the nominative (-partitive) clause-final NPs of the existential, possessive and source-marking resultative clauses (Erelt and Metslang 2006). Nemvalts also argues that possessive clauses are a subtype of existentials (2000: 46–47). Erelt et al.

(1993: 42) also classify source-marking resultatives under existential clauses. This thesis reaffirms that possessive clauses and source-marking resultatives do show great morphosyntactic closeness with existentials (Metslang to appear a). See also section 5.1.3 for a discussion on the usefulness of the clause type notion in Estonian linguistics.

4.3. Grammatical relations

This subsection outlines how the subject, object and a type of adverbials – object like degree adverbials (OLDAs) – have been defined in Estonian. In the literature, semantic, coding and behaviour properties, as well as topicality have been discussed as suitable criterial features.

As the reference grammar of Estonian (Erelt et al. 1993) largely relies on the notion of constituency, grammatical relations have also been defined by it on the basis of the grammatical functions constituents have in sentence structures. According to Erelt et al. Estonian grammatical relations are the grammatical predicate, the grammatical subject, object, predicative, adverbial and modifier (see also Tauli 1980 and 1983 on the grammatical relations in the Estonian simple sentence clause structure).

In the discussion of **subjecthood**, Erelt et al. (1993: 10) distinguish the grammatical subject and the semantic subject (the semantically foregrounded argument in the clause that is at the same time the clause’s most agentive argument; *ibid.*: 14) in a similar fashion that is done by several theories of grammar. In addition, the pragmatic subject (the theme of the clause) is also specified. The source defines the grammatical subject on the basis of coding and semantic properties (*ibid.*: 39–41): the subject is the NP or other phrase that is in the predicational relationship with the predicate. The predicate determines the subject’s occurrence in the clause and its meaning type. The subject controls agreement in person and number on the verb in the moods where the verb bears agreement markers. The subject is usually in the nominative. Erelt et al. regard the subject of the *unmarked clause* (i.e. the most typical subject) as the primary theme of the clause, and state that it is usually the semantic subject. Usually the unmarked clause subject is definite and has a clause-initial position (cf. for example *paat* in sentences (34) and (35) in section 4.1). Erelt et al. (1993: 40–41) as well as Nemvalts (2000: 32) suggest that also the *marked clause types* contain a subject: it is the NP that can be coded by the nominative or partitive case (see (41) and example (8) in section 3.1.2).

- (41) Riuli-te-l leba-s raamatu-i-d.
 shelf-PL-AD lie-PST.3SG book-PL-P
 ‘There were some books lying on the shelves.’ (partitive e-NP)

Similarly to earlier studies in Finnish linguistics, the existential clause’s partitive e-NP has formerly also been treated as an object (Erelt 1978) due to its

intermediate status. In this thesis these (global) arguments of unmarked clauses are rather considered subject-like to a degree (cf. Metslang to appear a). The examination of the e-NP (Metslang 2012 and to appear b) suggests that it is also acceptable to consider it a marginal, non-canonical subject.

The grammatical object has been described in Erelt et al. (1993) as the partitive, genitive or nominative marked NP (or some other element of the clause that can be substituted by such a form) that is governed by a transitive verb; the action depicted by the verb is usually directed to the object's referent. However, transitive verbs can also occur without the object and sometimes non-canonical objects occur as complements of intransitive verbs. In a clause that is communicatively neutral, the object has been analyzed as usually occurring as the rheme (Erelt et al. 1993: 47). Erelt et al. (ibid: 12–13, 47) also show that the grammatical object has some syntactic and semantic properties that relate to or bring it closer to the subject (passivization, subject-to-object raising, the semantic roles in causative constructions).²⁴

The thesis also looks at grammatical relations that occur in the borderline of arguments and adjuncts: **OLDAs**. These involve duration, iteration and quantity adverbials. All of them permit object-like case alternation between the total cases (the nominative and genitive) and the partitive. These adverbials have been described for example by Rannut 1958; Kont 1963; Erelt et al. 1993; Tamm 2004 and Metslang 2007; 2008).

These adverbials tend to occur as free subordinate members of the clause (see section 4.1) but some also occur as bound complements of verbs (e.g. *kaaluma* 'to weigh', *kestma* 'to last'; Erelt et al. 1993: 86). Erelt et al. (1993: 83–87) provide the following examples:

- (42) Juku suusata-s kaks tundi.
 Juku.N ski-PST.3SG two.N hour.P
 'Juku skied for two hours.' (duration adverbial in the nominative)
- (43) Juku ei suusata-nud kahte tundi=gi.
 Juku.N NEG ski-PST.PTC two.P hour.P=CL
 'Juku did not even ski for two hours.' (duration adverbial in the partitive)
- (44) Heit-si-n korra pilgu enda taga kasva-va-le järjekorra-le.
 cast-PST-1SG once.G glance.G self.G behind grow-PTC-ALL queue-ALL
 'I took a glance once at the queue growing behind me.' (iterative adverbial in the genitive)
- (45) Kõndi-si-me veel paar kilomeetri-t.
 walk-PST-1PL more couple.N kilometer-P
 'We walked a couple of kilometers more.' (quantity adverbial in the nominative)

²⁴ Erelt et al. (1993: 47) do not actually use the term 'subject-to-object raising'. They refer to the phenomenon as the 'transformational subject origin' of the direct object. See example (67) in section 4.6.

- (46) Raamat maks-a kopika-i-d.
 book.N cost-3SG copeck-P-PL
 ‘The book (only) costs kopecks (i.e. not much).’ (quantity adverbial in the partitive)

See also (53) and (54) in section 4.4 for genitive-marked duration and quantity adverbials. These adverbial types occur as NPs whose head is a noun or a quantifier (due to its distinct structure and syntactic properties, the latter type is called a *quantifier phrase* in Estonian linguistics; Ereht et al. 1993; see also Koptjevskaja-Tamm 2001). See section 4.4 for a more detailed account of the combination of Estonian extent adverbials with the Vendlerian verb classes by Tamm (2004).

4.4. Case-marking of objects and OLDAs

Most of the descriptions of Estonian grammar operate with three grammatical cases: the nominative, genitive and partitive. Some authors have also discussed the suitability of the accusative case in the Estonian case system (Hiietam 2003, 2004; Miljan 2009). This thesis did not study the question of postulating the accusative case in Estonian and followed the contemporary tradition of using three object cases. The benefit of such a choice is the possibility of giving a more precise, nuanced description of the distinctions in object use. The problem with adding the accusative to the Estonian case system is the complete lack of a distinctive morphological form.

The **object** only occurs in grammatical cases, but at the same time it has a wide array of meanings (the prototypical semantic roles of the object are patient and theme, and its adjunct-like roles are instrument, location, etc.; cf. Ereht et al. 1993: 47 and Kont 1963: 14). The object’s case-marking does not reflect such semantic variation.²⁵ Kont (ibid.: 18) states that in Estonian, as in other Finnic languages, the singular genitive and plural nominative as object cases express the perfectivity and resultativity of the action with respect to the object and that the object as a whole is totally affected by the action. For this reason, these two cases are called *total cases* in the Finnic tradition. The partitive as an object case expresses that the entity is only partially subjugated to the activity and that the activity is imperfective and irresultatative with respect to the object (ibid.). The object case depends on the following factors in Estonian (cf. Kont 1963; Ereht et al. 1993: 49–53; Rajandi and Metslang 1979; Tauli 1968):

²⁵ The situation is similar with the genitive and nominative noun modifiers (Kont 1963: 16).

Lexical factors:

- the lexical requirements of the predicate verb;
- the occurrence of indefinite objects in phrasal verbs and frozen expressions.

Semantic and clausal factors:

- the object referent's inclusive or non-inclusive quantity;
- the perfectivity (cursivity or terminativity) or resultativity of the situation;
- the denoting of the future or present tense;
- the verbal particles in the clause.

Grammatical factors:

- the type of the object's phrasal head (a noun, quantifier, personal or reflexive pronoun);
- negation;
- the complementation of the supine (i.e. the *ma*-infinitive and its inessive and elative forms);
- the complementation of the *da*-infinitive (as an infinitival clause or a noun modifier);
- the complementation of an imperative verb form;
- the complementation of an impersonal verb form;
- the complementation of converbs (*-des* and *-mata* forms).

The object case depends first and foremost on the lexical predicate it is the complement of (e.g. Kont 1963: 75; Erelt et al. 1993: 49–51; Klaas 1999; Vaiss 2004; Tamm 2004: 201–207; Rätsep 108–157, 260). Estonian verbs are divided into three main groups based on the object case and aspectual properties: the verbs requiring a partitive object (partitive verbs), the verbs allowing object case alternation between the partitive and total cases (aspectual verbs), and the verbs requiring a total case object (perfective verbs):

(47) Kohta-si-n ainult üh-t inimes-t.
meet-PST-1SG only one-P person-P
'I only met one person.' (lexical predicate determining object case: partitive verb)

(48) Komandant kirjuta-b praegu Peetri-t sisse.
housemaster.N register-PST.3SG at.the.moment Peeter-P in
'The housemaster is registering Peeter at the moment.' (HM) (aspectual verb, imperfective aspect, closed quantity referent)

(49) Komandant kirjutas Peetri sisse.
housemaster.N register-PST.3SG Peeter.G in
'The housemaster registered Peeter.' (HM) (aspectual verb, perfective aspect, closed quantity referent)

- (50) Komandant kirjuta-s min-d sisse.
housemaster.N register-PST.3SG I-P in
‘The housemaster registered me.’ (special coding of personal pronouns: the partitive occurring with an aspectual verb, perfective aspect and closed quantity referent)
- (51) Leid-si-n väljapääsu.
find-PST-1SG exit.G
‘I found an exit.’ (perfective verb)
- (52) Söö kook ära!
eat.IMP.2SG cake.N up
‘Eat up the cake! (Finish the cake!)’ (Erelt et al. 1993: 53) (aspectual verb, the choice of the object’s total case (the nominative) depends on the use of the imperative)

Resultativizing particles and adverbs have a considerable effect on the Estonian object case. Namely, there is a large group of verbs that are either used as partitive or aspectual verbs, and another group that is usually used as perfective verbs but which can also be used as aspectual verbs, depending on the existence of such an element in the clause (Metslang 2001; Vaiss 2004: 100; Rätsep 1978: 260).

The case alternation of the **OLDAs** is largely influenced by a factor that is also one of the main determinants of object case, non-inclusiveness. More specifically, Erelt et al. (ibid.: 83–87) describe these elements’ semantically conditioned case-marking as follows. The total cases express bounded time, iteration or quantity (cf. (42), (44) and (45) in section 4.3 and (53) and (54) below) and the partitive expresses non-inclusiveness, unspecified extent and negation (cf. (43) and (46) in section 4.3).

The second part of this subsection provides a closer insight into **aspect as the determinant of the object’s case**. It is well known that aspect and the realization of verbs’ arguments are closely linked. For example, Van Valin includes Vendlerian verb classes in his lexicon of verbs’ decompositional structures (see section 3.1.1). It has been found that the mapping between lexical items and syntactic argument structures, specifically objects, depends on aspect (e.g. Tenny 1994).²⁶

Tamm’s doctoral thesis (2004) describes the interaction between case and verbs in Estonian (aspectual verb classes, object and OLDAs’ case and NP quantification). She discusses how the system of grammatical expression of space and time relates to the partially grammaticalized aspect category in Estonian. More specifically, she shows how Estonian verbs have lexical constraints on the possibility of using total case objects. The total case objects

²⁶ Tamm (2004: 125) shows that specific Estonian data call for a more fine-grained approach to this problem.

bound the situation and verbs are specified in the lexicon for boundability. Different types of Estonian verbs permit two kinds of bounding. Tamm (*ibid.*: 200) shows that the first kind involves semantics like telicity, culmination, transition, a natural or logical endpoint, result, or directed change. The second one includes durativity, cursiveness or irresultativity. Some verbs permit both kinds of bounding, some only one and some prohibit both. She presents an expanded list of Vendlerian verb classes that divides Estonian verbs accordingly (*ibid.*: 202–203). Bounding may already occur on the lexical level but it may also occur by the use of other elements of the clause (object case, adjunct case). Tamm (*ibid.*: 213) finds that verb-external bounding can only occur if the verb lexeme and the clause are otherwise unbounded. Relying on these facts, Tamm regards the total case as a semantic case, as it is an aspectual, grammatical marker.²⁷ She justifies this approach by the fact that the total case is only felicitous if certain types of lexical and semantic information is provided. Tamm shows that there is a homomorphic relationship between the aspect of objects and OLDAs. The objects and adjuncts that are marked by the total case can have an identical impact on events by bringing about telic interpretation. Total case marked objects as well as adjuncts that mark spatial distances and temporal spans can express this (2004: 204–211). She gives the following examples of the extent adverbials relying on Sulkala (1996: 186):

(53) Takso sõidutas Peetrit ühe kilomeetri edasi.
 Taxi.nom drive.3.past Peeter.part one.gen kilometer.gen further
 ‘The taxi drove Peeter further (by) one kilometer.’

(54) Takso sõidutas Peetrit ühe tunni edasi.
 Taxi.nom drive.3.past Peeter.part one.gen hour.gen further
 ‘The taxi drove Peeter further one hour.’ (Tamm 2004: 71)²⁸

The application of these aspectual rules on extent adverbials is not as systematic as it is with objects (Erelt et al. 1993: 87; see also Metslang 2008). The set of object case determining rules is also in other ways much more complex (see sections 5.2.2 and 5.2.3 and Metslang 2007 and 2008 for a juxtaposition of OLDAs’ and object’s case-assignment rules).

²⁷ It is relevant in this context that her work follows the tradition of Lexical Functional Grammar. In other traditions, this case would rather be categorized as being simultaneously grammatical and semantic as it marks a grammatical relation as well as meanings related to tense, aspect and mood properties.

²⁸ The glosses are from the source (Tamm 2004).

4.5. Other argument coding devices

In addition to the numerous studies on case systems, there is also considerable research on the other coding properties of Estonian grammatical relations. In the following I will briefly discuss the findings on Estonian verbal agreement, word order and zero anaphora.

Agreement is regarded as an argument coding means because the agreement marker on the verb indexes, i.e. makes reference to particular core arguments in the clause. The following outline of agreement in Estonian relies on Erelt et al. (1993); see also Mihkla (1962), Valgma (1963) and Neetar (1964). In Estonian, verbal agreement markers express person and number. These include: the first person singular, first person plural, second person singular, second person plural, third person singular and the third person plural markers. They can only refer to nominative subjects (i.e. including both subjects and subject-like arguments; however, as Torn-Leesik 2009: 85–86 points out, also the nominative object of impersonals tends to trigger exceptional agreement on the verb in contemporary use of Estonian – a phenomenon also attested in Icelandic dative subject constructions; cf. Kučerová 2007).

Regarding the *person* reference, the first and second person markers are used if the verb is in the mood that takes agreement inflection and the subject refers to a speech act participant (participants). The third person marker is used in all other cases. As regards the *number* category, in the case of the third person agreement, there are several factors that influence the choice between singular and plural marking. Number marking depends above all on whether the subject phrase is semantically and/or grammatically plural. Generalizing from Erelt et al. (1993), other subject phrase related factors include semantics (distributive/total quantity, definiteness and abstractness), the occurrence of a quantifier as the phrasal head and the subject phrase's theme/rheme status. The main clausal factor influencing singular and plural third person marking is coordination. In certain cases, the event semantics of the clause and the relationship between different NPs (i.e. scenario, cf. section 3.5.3) in the clause also have an impact (1993: 27–29). To summarize, the realization of agreement markers in Estonian, depends on semantic, morphosyntactic, lexical and pragmatic parameters. Erelt et al. (1993: 28) gives the following examples.

- (55) Kümme sipelga-t askelda-vad (askelda-b) usinasti ühe raokese kallal.
ten.N ant-P bustle-3PL bustle-3SG busily one.G twig.G at
'Ten ants are bustling busily on one twig.' (preference for plural agreement if the plural subject is in the theme position)
- (56) Ühe raokese kallal askelda-b (askelda-vad) usinasti kümme sipelga-t.
one.G twig.G at bustle-3SG bustle-3PL busily ten.N ant-P
'There are ten ants bustling busily on one twig.' (preference for singular agreement if the plural subject is in the rheme position)

- (57) Trammi-s ol-i palju inimes-i.
tram-INE be-PST.3SG many person-P.PL
‘There were many people on the tram.’ (quantifier in the phrasal head causing singular agreement)
- (58) Tul-id ka teise-d neli.
come-PST.3SG also other-N.PL four.N
‘Also the other four (people) came.’ (definite modifier causing plural agreement, despite the use of a quantifier as the phrasal head)
- (59) Ke-da küll huvita-b (huvita-vad) sinu tikkimine ja kudumine?
who-P ever interest-3SG interest-3PL you.G embroidering.N and knitting.N
‘Who cares about your embroidering and knitting? (coordinated subjects with a preference for singular agreement)
- (60) Püksid läk-si-d katki.
trousers.N.PL go-PST-3PL torn
‘The trousers got torn.’ (morphological plural causing plural agreement despite the singular semantics of the *plurale tantum* word)

Both **word order and zero-anaphora** may also be regarded as argument coding devices. Zero-anaphora and the position of the argument in the clause depend on a complex set of factors from different levels of language. The factors determining the use of zero-anaphora or certain positions in the clause are varied and they are as manifold as the factors influencing the case-marking of arguments. However, the importance of information structural and other pragmatic determinants is more significant with them. These two coding means, zero-anaphora and word order, are linked to particular grammatical relations statistically and not by strict constraints (as is the case with case and agreement).

Estonian word order is quite flexible and is mainly influenced by information structure and the syntactic ‘verb comes second’ (V2) rule (Lindström 2005: 185; Huumo 2002: 502; Tael 1988a: 40). In the beginning of the clause, syntactic factors play an important role (Tael 1990: 37). The V2 rule determines the subject position even if the inherent properties of the subject may suggest some other position in the clause. The V2 rule determines a word order frame, and inside it pragmatic tendencies are able to work (Huumo 2002: 502). Information structural factors especially play a role in determining word order on the right hand side of the clause. These factors include givenness of clause constituents and also the degree of focus (Lindström 2005: 185). The most frequent word orders in written Estonian are SVX and XVS (25% and 24% of clauses respectively; Tael 1988a: 6), compare examples (55) and (56).

In this thesis I treat zero-anaphora in the context of the phrase-weight domain, which is a means of information structural message packaging (the term *message packaging* was coined by Chafe (cf. 1976); it denotes the

linguistic means the speaker uses to present the hearer instructions on how to manipulate the message and to integrate it into his current knowledge; message packaging is the choice the speaker makes on which referents will be referred to as definite, given, topical, etc.). Estonian is a partial zero-subject language (Hiietam 2003: 145) and in certain contexts it allows the ellipsis of the subject pronouns and also the object pronouns that are known from the discourse. However, there is a strong tendency to omit the first and second person subjects of unmarked clauses, whereas the objects as well as the subject-like arguments of marked clauses tend to be overtly expressed. Lindström et al. (2008: 184–185) have shown that in Estonian dialects, there are a number of determinants influencing the ellipsis of the first person subject pronoun in the clause. The main factors are the referential distance from the previous mention, text structure, syntactic connection type between clauses and the presence of the first person singular agreement marker on the verb. To summarize, according to this source zero-anaphora depends on textual, information structural and morphosyntactic factors. You can see an example of zero anaphora in standard written Estonian in (51) in section 4.4. Erelt et al. (1993: 223) categorize the omission of personal pronoun subjects under structural ellipsis: the reference of the slot can be filled by using the information from the same clause, the referent is identified via the knowledge of language structure. This thesis does not discuss the phenomenon in depth but only measures its use with subjects and subject-like arguments. Its distribution is another means for determining subject properties in Estonian (cf. Metslang to appear a).

4.6. Syntactic properties of Estonian grammatical relations

There are few studies that look at the behavioural properties of Estonian unmarked clause subject and object (cf. section 3.4 for an introduction to behavioural properties). The most extensive study is Hiietam (2003) that studies the behaviour of arguments of several clause types and uses a host of different tests for both the subject and object. A small scale study on the behaviour of the experiencer argument from a type of experiential constructions was carried out by Lindström (2012). Erelt (2004) and Koks (2004) have published short overviews on the Estonian unmarked clause subject's behaviour. The purpose of these four descriptions is to characterize and/or define grammatical relations in Estonian (this is different from some other relevant studies, see below). The features that have been suggested as characteristic of Estonian subjects are reflexivization (antecedence of the possessive pronoun *oma* 'own' and the reflexive pronoun *iseennast* 'oneself'), deletion in coordination, subject control

(in *da*-infinitive constructions) and object control (in supine constructions),²⁹ subject-to-subject raising, subject-to-object raising, case in negation, deletion in imperatives and relativization. In the following I will present an example of each of these properties.³⁰

- (61) Peeter¹ jutusta-s kallima-le² oma¹ elu-st.
 Peeter.N tell-PST.3SG sweetheart-ALL own.G life-EL
 ‘Peeter told (his) sweetheart about his life.’ (reflexivization with *oma*; Erelt 2004: 9)
- (62) Peeter¹ jutusta-s kallima-le² iseenda-st¹.
 Peeter.N tell-PST.3SG sweetheart-ALL himself-EL
 ‘Peeter told his sweetheart about himself.’ (reflexivization with *iseennast*), (Erelt 2004: 9)
- (63) **Tüdruku-d** piilu-si-d poiss-e ja __ [tüdruku-d] itsita-si-d.
 girl-N.PL peek-PST-3PL boy-P.PL and girl-N.PL giggle-PST-3PL
 ‘The girls peeked at the boys and giggled.’ (deletion in coordination; Erelt 2004: 9)
- (64) **Mees** kavatse-s __ [mees] pu-i-d lõhku-da.
 man.N plan-PST.3SG man.N firewood-PL-P chop-INF
 ‘The man was going to chop firewood.’ (subject control with the *da*-infinitive; Erelt 2004: 10)
- (65) Pastor veen-is te-da naas-ma.
 pastor.N convince-PST.3SG s/he-P return-INF
 ‘The pastor convinced him to return.’ (object control with the supine; Koks 2004: 36)
- (66) **Peeter** näi-b hiljaks jää-vat.
 Peeter.N seem-3SG late stay-INF
 ‘Peeter seems to be late.’ (subject-to-subject raising; Erelt 2004: 10)

²⁹ Koks (2004: 36) also suggests that in Estonian there is a third type of control that she neither classifies as subject nor object control. In this construction the controllee of the infinitival clause is controlled by the matrix clause oblique. E.g. ... *ta käsk-is mu-l sisse istu-da*. [he.N order-PST.3SG I-AD in sit-INF] ‘He ordered that I sat in (the car)’ (the glosses have been added). In this thesis, this phenomenon is discussed under object control.

³⁰ When providing the English translations for these examples I rely on both the original sources and on the terms used in this thesis. In all the examples of this section, the glosses have been added but the emphases and other markings from the original sources have been preserved. The square brackets denote deleted arguments. Some examples have been shortened.

- (67) Arva-si-n **ta** kullaaugu valvaja ole-vat ...
 regard-PST-1SG s/he.G goldmine.G guard.N/G be-INF
 ‘I thought him to be the guard of the goldmine ...’ (subject-to-object raising;
 Koks 2004: 35)
- (68) Laps ei jalutanud.
 child.NOM NEG walk.PRTC
 ‘The child was not walking.’ (case in negation; Hiietam 2003: 188)³¹
- (69) _ [sa] lõhu pu-i-d.
 you.N chop.IMP.2SG firewood-PL-P
 ‘Chop firewood!’ (deletion in imperatives; Erelt 2004: 9)
- (70) ... pea-ks palga-le võt-ma välismaa ja Eesti
 should-COND salary-ALL take-INF abroad.G and Estonia.G
vahel teave-t vahenda-va-d inimese-d.
 between information-P mediate-PTC-N.PL person-N.PL
 ‘(We) should hire people mediating information between Estonia and abroad.’
 (relativization; Koks 2004: 38)

In this thesis (Metslang to appear a) I studied all of these tests as potential subjecthood properties, used the ones that I found suitable for defining Estonian subjects and added some new ones. From the list above, I chose not to use *deletion in coordination* and *deletion in imperatives* because I find that they merely characterize the subject but do not exclusively define it. I did not include deletion in coordination in the analysis because it is also possible to delete other grammatical relations in coordination if coreferent. Though, as it is more common to delete subjects in this position, deletion in coordination could in future studies be considered as a statistical subject property. It is also possible to omit objects in *imperative* clauses, hence this property does not distinguish subjects from objects.

Hiietam’s choice of the syntactic properties of Estonian objects involves passivization, impersonalization and negation (2003: 214). She characterizes these properties as follows (cf. *ibid.*: 209–213). In passivization the argument that becomes the nominative or partitive NP in the personal passive construction is the direct object.³²

- (71) Kass on vigaseks hammustatud.
 cat.NOM be.3 cripple.TRANSL bite.PRTC
 ‘The cat has been bitten so that it became crippled.’ (*ibid.*: 210)

³¹ The glosses of Hiietam’s (2003) examples are from the original.

³² Other treatments of Estonian passives only regard constructions with *on ...-tud* as passives if the sole argument of the passive clause is in the nominative – the sentences with a sole partitive argument are regarded as impersonals (cf. Torn-Leesik 2009). See Metslang (to appear a) for a summary on the literature on Estonian passives and impersonals.

In impersonalization the argument that becomes the sole argument of the clause is the direct object.

- (72) Kassi hammustati.
cat.PART bite.PAST.IMPS
'One bit the cat.' (ibid.: 211)

The non-subject non-partitive argument which becomes marked with the partitive case under negation is the direct object.

- (73) Koer ei hammusta-nud kassi vigase-ks.
dog.N NEG bite-PST.PTC cat.P crippled-TRANSL
'The dog did not bite the cat so that it got crippled.' Lit. 'The dog did not bite the cat crippled.' (HM)

In the corresponding affirmative clause *kassi* would be in the genitive.

In addition to the studies that deal with defining grammatical relations outlined above, there are numerous studies in Estonian linguistics that focus on these criterial constructions separately, without uniting them for the purpose of characterizing or defining grammatical relations. These include for example studies on passives and impersonals (Erelt et al. 1993; Torn-Leesik 2009; Torn-Leesik and Vihman 2010; Erelt 2011; Pihlak 1993), the use of infinitives (Erelt et al. 1993; Erelt 1987; Uuspõld 1966; 1972; 1982; 1985) and descriptions of Estonian pronoun use (Erelt et al. 1993; Viks 1972). This thesis has combined the data from both kinds of studies to collect information of the behaviour of Estonian subjects.

5. OVERVIEW OF THE THESIS

This overview outlines the main results of the five articles of the thesis. The topics of the articles are defining subjecthood in Estonian on the basis of coding and behaviour properities (Metslang to appear a), comparing core arguments in Estonian on the basis of statistical properties (semantic, coding and discourse and information structural properties) (Metslang to appear b) and systematizing the case-alternation system of the e-NP (Metslang 2012) and OLDAs (Metslang 2007, 2008). All these studies are based on the Corpus of Written Estonian (mainly the Balanced Corpus unless otherwise indicated). Table 1 describes the datasets and methods that were used in the articles of the dissertation.

Table 1. Data and methods used in the dissertation.

Article	Corpus data and method
Metslang (to appear a)	Multivariate analysis (cf. section 5.1.1): qualitative analysis on the basis of 1200 sentences, quantitative analysis on the basis of 2000 sentences (manually found examples)
Metslang (to appear b)	Quantitative analysis on the basis of 390 sentences and 520 arguments (manually found examples)
Metslang (2012)	Quantitative analysis on the basis of 279 sentences (from the Parsed Corpus, semi-automatically found examples)
Metslang (2007, 2008)	Qualitative analysis on the basis of manually found examples (it is not possible to give exact statistics)

Section 5 consists of two parts: subsection 5.1 discusses how grammatical relations can be defined in Estonian, mainly by using the example of the subject; subsection 5.2 outlines the results on argument coding analysis with a focus on differential case-marking of the e-NP, O (roughly the direct object) and OLDAs. The emphasis is on making comparisons between these arguments' coding and on finding ways for unifying their sets of case assignment factors. In section 5.2 I will also briefly discuss the topic of argument alignment in Estonian grammar.

This overview shows that despite the centrality of the topic of this thesis (the grammatical relations) in Estonian linguistic enquiry, there were still several important questions that needed to be answered or reviewed using novel theoretical views and corpus data. Some fundamental measures for defining grammatical relations (employed in this thesis) have been used little in Estonian linguistics, especially the argument behaviour tests and statistical comparisons of different argument and case uses (see section 6 for the contribution of this thesis to the field and the questions that still remained unanswered in this thesis).

5.1. Defining grammatical relations in Estonian

This thesis discusses the problem of defining grammatical relations in Estonian on the basis of corpus data on behavioural, referential, coding and message-packaging phenomena. I studied all of these properties of the transitive and intransitive subject, the e-NP and the direct object. In the case of the direct object, the analysis of behavioural properties is only partial, as only these properties were looked at which were necessary for distinguishing the subject from the direct object. I also studied the coding and behavioural properties of the passive subject and the subject-like arguments of the possessive, source-marking resultative and a type of experiential construction.

This thesis confirms that the most robust criteria for comparing the Estonian argument types and distinguishing between them are behavioural properties. When measuring different arguments' occurrence possibilities in clear-cut test constructions, it is possible to apply a multivariate analysis (see below) and indicate clearly whether an argument passes certain tests or not. When the argument passes these tests, it decreases vagueness in the analysis. Also, some coding properties (agreement and case) are useful in defining grammatical relations, as in most cases there are strict rules guiding the case and agreement marking of all the argument types.

The other argument features I looked at do not provide restrictions on arguments, but rather describe argument types by statistical biases and show probabilistic tendencies in how they are distributed among the arguments (for example in my analysis, 66% of transitive subjects are marked by zero-anaphora or pronominally whereas 60% of e-NPs are marked by a full NP or a heavy phrase; Metslang to appear b). Such statistical properties include semantic and other content-related features, incl. message-packaging. The semantic properties that I studied in the thesis are number, person, the Referential Hierarchy properties, discourse importance and the situation type the argument is participating in. The message-packaging measures I analyzed include phrase weight, word order, discourse activeness (givenness) and definiteness (see section 4.5).

5.1.1. Determining subjecthood on the basis of coding and behaviour rules

The article (Metslang to appear a) proposes a new way to define the subject category in Estonian. It mainly focuses on the rules-based subjecthood properties (with the exception of two statistical properties that have been integrated into the set of parameters), more specifically the coding and behaviour of 10 argument types. These include the transitive and intransitive subjects, the passive subject, the e-NP and the two arguments of the experiential, possessive and source-marking resultative constructions (see section 4.2). It largely relies on Radical Construction Grammar and typological

theory and uses the method of multivariate analysis. It focuses on subjecthood on two levels: on the subject as a construction-specific category and the global subject as a cross-constructional category (see section 3.3). The former allows for the documenting of the linguistic variation and the similarities and differences between close argument types very precisely. The latter allows for making generalizations on the basis of this first step. In this view different arguments (e.g. the transitive clause subject and the passive subject) show a different degree of subjecthood. A similar approach can be taken to define other grammatical relations in Estonian in future studies.

In the part of the subjecthood properties analysis that is based on Radical Construction Grammar, each test construction determines a separate subject relation. For example, the Estonian active transitive subject and the subject of the passive clause behave similarly with respect to case-marking in negation but differently in the subject control construction with the supine. Therefore negation and the control construction define different sets of grammatical relations (negation {A, d-S}; control {A}, {d-S}).³³

- (74) **Peeter** ei söö-nud õuna.
 Peeter.N NEG eat-PST.PTC apple.P
 ‘Peeter did not eat an apple.’ (transitive subject, nominative in negation)
- (75) **Võti** ei ol-nud pööningu-le peide-tud.
 key.N NEG be-PST.PTC attic-ALL hide-PASS.PST.PTC
 ‘The key was not hidden in the attic.’ (passive subject, nominative in negation)
- (76) Kogemus, **mis** ulatu-b puuduta-ma alateadvuse kiht-e.
 experience.N that.N extend-3SG touch-INF subconsciousness.G layer-P.PL
 ‘An experience that has extended to touch the layers of the subconsciousness.’
 (transitive subject, subject control with a supine)
- (77) ***Arve** lähe-b maks-tud ole-ma.
 bill.N go-3SG pay-PASS.PST.PTC get-INF
 Intended: ‘*The bill will go to be paid (to get paid).’ (passive subject, impossibility of subject control with a supine)

Both the active transitive and passive subject retain their nominative marking in negation. The transitive subject can be the controllee of the supine control construction (the obligatorily deleted coreferent argument of the lower clause) but the passive subject cannot be (see section 3.4 for a description for the control construction).

³³ The subsetting of the test constructions has been simplified here. A – transitive subject, d-S – passive subject.

The article (Metslang to appear a) looks at five *coding* features:

- restrictions: case in the affirmative clause, case in the negative clause and agreement;
- statistical properties: word order and zero-anaphora (although this section focuses on rules, these two statistical properties are discussed here, as they are an integral part of this study).

The multivariate analysis method used in Metslang (to appear a) is an approach in typology (cf. Bickel 2010a and 2011). It is a precise tool that helps to ensure the comparability of vaguely similar structures. It deals with fuzzy family resemblances by specifying which elements of the compared structures are identical and which ones are different (Bickel 2011). Often it is done by using matrices that juxtapose the compared values of variables. Multivariate analysis entails the development and analysis of variables that are in a single or in multiple relationships with each other. Witzlack-Makarevich (2011: 37) suggests that a properly designed set of variables should be large and fine-grained enough to capture the necessary diversity and also remain close to the observed linguistic data. This method has proved itself in its ability to reconcile the needs of more detailed language-specific research and typological linguistics that seeks to make large scale generalizations. It helps the researchers of both fields use the same terminology and do research while benefiting from each others' results without the need to forcefully reduce variation (Bickel 2011).

When determining the *behavioural* criteria suitable for Estonian, I first made a list of the properties suggested for prototypical subjects both in Estonian and Finnish linguistics (mainly Erelt et al. 1993; Hakulinen et al. 2004; Hiietam 2003) and in the typological literature (e.g. Barðdal 2006; Bickel 2004; Kroeger 2004; Van Valin 2005).

The following are the behavioural features that were examined (descriptions and examples are provided in sections 3.4 and 4.6 and below):

- antecedence of the possessive and reflexive pronouns;
- subject-to-subject raising and subject-to-object raising;
- subject control (deleted controllee position in constructions taking the *da*-infinitive, supine or converb);
- object control (deleted controllee position in constructions taking the *da*-infinitive or supine);
- relativization (both subject and object control with present and past active and passive participles with the suffixes *-v*, *-tav*, *-nud*, *-tud*);
- impersonalization (occurring as the deleted or demoted argument in the impersonal construction, see example (78)).

- (78) ... kuhu ehita-takse järgmine varjualune.
where build-IMPS next.N shelter.N
'... where the next shelter will be built.' (impersonalization of the A argument)

The following are the potential behaviour constructions that I found unsuitable for defining subjecthood in Estonian because they do not exclusively distinguish the subject (from the object and adjuncts):

- deletion in imperatives;
- conjunction reduction;
- antecedence of reciprocals;
- controller position in control constructions.

Depending on whether the representatives of the studied argument type passed each particular test productively, partially/marginally or not at all, they were given a certain amount of points according to the devised scoring system (2, 1 or 0 points respectively). After summing up the results of the 16 tests, the argument types were ordered as can be seen in Table 2.

Table 2. The occurrence of 16 subjecthood properties among different argument types (maximum score 32; on the basis of Metslang to appear a).

Argument type	Construction type	Total score
Transitive/Intransitive subject	unmarked active clause	30
Passive subject	passive	20
Stimulus	experiential	20
Goal	resultative	11
e-NP	existential	11
Possessee	possessive	7
Experiencer	experiential	6
Possessor	possessive	5
Source	resultative	5

The following examples demonstrate how some less prototypical arguments pass subjecthood tests.

- (79) **Karbi-st** saa-b oma elu lõpu-l
 shellfish-EL become-3SG own.G life.G end-AD
 isane või emane isend.
 male.N or female.N specimen.N
 ‘At the end of its life the shellfish (i.e. every shellfish) becomes a male or a female specimen.’ (antecedence of possessive pronoun, the source of resultative construction)

- (80) **Kõige tihedamini asusta-tud osa põle-s**
 most densely populate-PST.PASS.PTC part.N burn-PST.3SG
 maa-ni maha.
 earth-TERM down
 ‘The most densely populated part burned down entirely.’ (relativization, passive subject)

- (81) Kujutle-n **se-da** enda-le meeldi-mas.
 imagine-1SG this-P self-ALL be.likeable-INF
 ‘I imagine myself liking it.’ (object control, the stimulus of the experiential construction)
- (82) Esialgu tundu-si-d viimase-l poole-l ole-vat kõik **eelise-d**.
 initially seem-PST-3SG last-AD side-AD be-INF all advantage-N.PL
 ‘Initially the latter side seemed to have all the advantages.’ (subject-to-subject raising, the possessee of possessive construction)
- (83) Just seal arva-takse ole-vat maailma ilusa-ima-d **korallrifi-d**.
 exactly there think-IMPS be-INF world.G beautiful-SUP-N.PL coral.reef-N.PL
 ‘The world’s most beautiful coral reefs are thought to be right there.’ Lit.
 ‘Exactly there are thought being the world’s most beautiful coral reefs.’ (subject-to-object raising, e-NP)

The marked clause subject(-like) arguments have considerably lower subjecthood scores than the prototypical unmarked clause subject. This confirms Croft’s **Behavioural Potential universal** which states that the more frequent category (meaning the semantically more prototypical category) will be able to participate in at least as many different behavioural constructions as the less prototypical one (see section 3.3). The data in Table 2 should be taken with caution because some of the tests were dependent on close or the same phenomena as other tests. In the article, I proposed a possible solution to this problem. It has been suggested that cross-linguistically the behaviour of arguments can for example depend on topicality, semantics, coding or grammatical relations (thus for example only topics, actors, nominative or the A/S arguments can pass a particular test respectively; Bickel 2004: 90–97; Kroeger 2004: 104; Van Valin and LaPolla 1997; Siewierska and Bakker 2012). The Estonian data showed that in the single tests, the arguments roughly depend on two kinds of factors: topicality and case. The topicality dependent tests (Group 1) are word order, zero-anaphora and the antecedence of reflexive and possessive pronouns. The rest of the tests are dependent on the argument’s case (the nominative (-permitting) arguments are preferred) (Group 2). If we collapse the table on the basis of the basic subjecthood factors (case and topicality), the Estonian typically topical marked clause arguments and non-topical marked clause arguments (possessor, source, experiencer vs. possessee, goal, stimulus and e-NP) would get equal scores – they can be regarded equally subject-like on the basis of these 16 criteria.

Table 3. Groups of subjecthood properties (rounded average values of each group’s test results; Metslang to appear a).

Group of tests	Which arguments pass the test?	Argu-ments	A/S	d-S	St	Exp	Gr	e-NP	Pe	Pr	So	Total
	Typically topical?	yes	yes	no (yes)	yes	no	no	no	no	yes	yes	
1	Topical arguments	2	1	1	2	0	0	0	1	1	8	
2	Nom(-permitting) in affirmative	2	1	1	0	1	1	1	0	0	7	
Total		4	2	2	2	1	1	1	1	1		

According to the scores in Table 3, the overall scores reflect that the Estonian subjects and subject-like arguments can be roughly divided in two groups: the unmarked active clause subjects and the marked clause arguments (the passive subject and the experiential clause arguments are positioned between these groups). Hence in Estonian, clause type could be considered a higher level subjecthood factor. Unlike the factors that underlie subject tests that have previously been suggested in the literature, clause type is a composite factor that includes both topicality and argument coding frames (see the definitions of unmarked and marked basic clauses in section 4.2). I regard clause type as a viable factor in subject behaviour because:

- although Group 1 tests are in general passed by topical arguments, the unmarked clause arguments pass the tests productively, while the marked clause arguments pass them less productively or partially;
- although Group 2 tests are in general passed by arguments with the same case-marking, the unmarked clause arguments pass the tests productively, while the marked clause arguments pass them less productively or partially;
- the overall subjecthood sums of marked clause subject-like arguments are significantly lower than the sums of unmarked clause subjects;
- the clause type notion combines the same linguistic parameters that are cross-linguistically deemed as factors influencing arguments’ behaviour (see above).

The paper also looks at the applicability of the **Hierarchy of Grammatical Relations Constructions** (see section 3.4). The Estonian subjects and subject-like arguments generally behave according to this hierarchy. The following scale could be tailored for the Estonian data based on how diverse sets of arguments these constructions take:

CASE / AGREEMENT > RELATIVIZATION > OTHER CONTROL CONSTRUCTIONS

The scale shows that subject-like case and agreement allow for a greater diversity of argument types than relativization and other control constructions, and that subject case and agreement can be used on a larger selection of argument types. For example the case of the prototypical subject (the nominative) is productively used with the passive subject, the stimulus of experiential constructions and the goal argument of the resultative construction (2 points). It is also one of the cases of the e-NP and the possessee argument of the possessive construction (1 point). It only cannot be used with the oblique clause initial arguments of the experiential, possessive and resultative constructions (the experiencer, possessor and source arguments get 0 points). For comparison, the use of the subject control construction with the supine is much less productive across the different construction types under examination. This test is only productively passed by the unmarked active clause subject (2 points).

- (84) (Vedelik kōrveta-s nagu kee-v tina,)

liquid.N burn-PST.3SG like boil-PTC tin.N

aga Ø kurgu-st alla mahtu-s mine-ma küll

but (liquid.N) throat-EL down fit-PST.3SG go-INF indeed

'(The liquid burnt (me) like boiling tin) but could indeed fit (going) down the throat.' (e.g. in the context of drinking strong alcohol) (subject control construction with the supine, intransitive subject)

To a degree, the stimulus argument of the experiential construction also passes the test (1 point). Other argument types cannot occur as pivots of this test construction.

5.1.2. Defining grammatical relations on the basis of statistical biases

In the article (Metslang to appear b), I also present the statistical results of the distribution of the coding properties between the A, S, O and e-NP. I studied 390 corpus sentences with 520 arguments in total (130 of each). A total of 66% of the nominative arguments were unmarked clause subjects, 100% of the genitive arguments were direct objects, 58% of the partitive arguments were direct objects and 42% were e-NPs. With respect to agreement, the unmarked clause subjects are of course opposed to the direct object. The position of the e-NP in this comparison is ambiguous. Although in the data 88% of e-NPs show verbal agreement, actually only 14% of e-NPs are clear instances of it (in other cases the verb is either in the default form, third person singular, or negation, mood or the exceptional paradigm of the verb *olema* 'to be' neutralized the person/number distinction on the verb).

A popular topic in typological literature is the **Referential Hierarchy** hypothesis discussed for example by Givón (2001), Bickel (2008) and Bickel et al. (to appear). They summarize the widespread view in typology that the rank

of an argument in the Referential Hierarchy correlates positively with access to grammatical relations, as higher arguments are more likely to be topical. In the article (Metslang to appear b) I compare A, S, O and e-NP on the basis of a tailored version of several suggested hierarchies. I posed a hypothesis that the following scale can be used to describe the semantic preferences of the argument types in the Estonian corpus (the hierarchy is designed to capture the more detailed distinctions between the semantically lower arguments that were common in the corpus):

- (85) The version of the Referential Hierarchy used in this thesis (Metslang to appear b)
 SPEECH ACT PARTICIPANT > HUMAN > CONCRETE > ABSTRACT > EVENT > NON-REFERENTIAL

I analyzed whether the distribution of these referential properties is biased throughout both different argument types and their case uses. Although recent studies cast doubt on how accurate the hierarchy's predictions on case-marking are universally in the world's languages (Bickel et al. to appear) the scale is still a good tool for examining the distribution of these properties among differently case-marked arguments (see section 5.2.3 for this analysis).

All these referential properties are distributed probabilistically in the corpus: in general, almost all arguments take referents with several meanings. In the data, the hierarchy is divided between humans and inanimate entities. The referents on the left of the hierarchy occur in the S and A positions, and on the right as O and e-NP. A and S align together: reference to speech act participants and people naturally takes place in the A and S positions and rarely in the O and e-NP positions. This is shown by (6) and (7) from sections 3.1.1 and 3.1.2, repeated here as (86) and (87):

- (86) Ø Saat-si-n üh-t nais-t koju.
 (I.N) escort-PST-1SG one-P woman-P home.IL
 'I was escorting one woman home.' (A with a speech act participant referent)
- (87) **Elisabeth** leba-s ristseliti sohva-l.
 Elisabeth.N lie-PST.3SG on.her.back sofa-AD
 'Elisabeth was lying (on her back) on the sofa.' (S with a human referent)

S is a more heterogeneous category than A, and O is the most heterogeneous category of the four. O mainly expresses lower entities. The O and e-NP show considerable similarities with respect to the hierarchy: abstract and concrete inanimate entities primarily occur in these positions (78% of the abstract and 79% of concrete referents of the corpus). Examples (8) and (76) will be repeated here for convenience:

- (88) Riuli-te-l leba-si-d **raamatu-d.**
 shelf-PL-AD lie-PST-3PL book-N.PL
 'There were books lying on the shelves.' (e-NP with a concrete referent)

- (89) Kogemu-s, mis ulatu-b puuduta-ma **alateadvuse** **kiht-e**.
 experience.N that extend-3SG touch-INF subconsciousness.G layer-P.PL
 ‘An experience that has extended to touch the layers of the subconsciousness.’
 (O with an abstract referent)

The expression of non-referential content is largely restricted to the O position in the data: 79% of the non-referential elements occur as Os (mainly infinitival constructions and clausal constructions, including direct and reported speech):

- (90) Üksnes Renke ütle-s “**Tunne-n kaasa**” .
 only Renke.N say-PST.3SG sympathyze-1SG with
 ‘Only Renke said, “I am sorry”. (non-referential O)

In addition, I compared the four Estonian argument types – A, S, O and e-NP – from the point of view of five semantic properties and four message-packaging properties (Metslang to appear b). I also juxtaposed these results with the coding frequencies. In the following I will summarize the results of the comparisons between the most frequent parameter values of each argument type.

Ten criteria out of the 11 that were used appeared to be suitable for distinguishing the argument types from one other. These criteria are:

- coding: case and agreement;
- semantics: number, person, the Referential Hierarchy, discourse importance and the Vendlerian situation type the argument participates in (Van Valin’s (2005) classification);
- message packaging: phrase weight, word order, discourse activeness and definiteness.

The eleventh criterion, number, showed the same preference among all the arguments: the singular dominates everywhere. Plural distinguishes referential properties more than argument types: in comparison with other categories in the Referential Hierarchy, it is more common (but still not dominant) among inanimate concrete entities.

In the corpus, across all these criteria, the deepest division in the Estonian core-argument system is between the unmarked clause subjects (A and S) on the one hand and the partitive-permitting arguments (O and e-NP) on the other. Topicality-related message packaging features show a strong correlation with semantic properties (especially the Referential Hierarchy and discourse importance). From the point of view of these features S clusters together with A and O patterns with e-NP. Also coding correlates with these content properties. Two semantic properties, situation type and person, were in most cases not shared by these otherwise coherent argument groups.

The most clear-cut difference between subjects and partitive-permitting arguments is in message packaging, which depends on topicality and, in the case of O and e-NP, on the semantic bonding between these arguments and the predicate verb. The largest groups of the direct object and e-NP have the same

values in 6 criteria out of 10 (the Referential Hierarchy preferences, person, discourse importance, phrase weight, word order, and discourse activeness). O and e-NP also overlap in case and agreement. These results illustrate the major impact that topicality has on Estonian argument realization.

It was found that e-NP and subject (S or both S and A) only have the same values in 3–4 criteria out of 10. They share their preferred case-use (the nominative) and agreement (although the agreement between e-NP and the unmarked form of the verb is not a strong indicator of e-NP and subject similarity). It was found that e-NPs share with the intransitive subjects the preference for third person reference and for occurrence in states, see examples (87) and (88). These judgements were made on the basis of the largest group of e-NPs and the largest group of Ss. However, if we also look at the general distribution of all situation types of the S argument, it occurs more in the environments that are similar to the ones of A. As non-canonical arguments are sometimes quite different from their canonical counterparts and as there are these 3–4 shared parameters I regard it as possible to treat e-NP as a non-canonical S in the contexts where this is helpful (e.g. when studying the manifestations of ergativity). The Referential Hierarchy’s case use predictions also support the non-canonical subject analysis.

5.1.3. Clause types as a source for determining grammatical relations

Although the evaluation of the applicability of the traditional notion **simple sentence clause type** (Erelt et al. 1993; Erelt and Metslang 2006; see also section 4.2) was not the focus of this thesis, it was relevant to discuss the suitability of them for determining grammatical relations in Estonian (cf. Metslang to appear a).

Estonian clause types are mainly defined on the basis of topicality, the situation’s and arguments’ semantics, and argument coding frames. In Construction Grammar, the network of constructions entails constructions with different levels of schematicity and clause types position among the more schematic items in the system. The difficulty with using the clause type notion in the analysis of corpus data is that each clause type shows a great variation, and therefore it was often hard to decide whether the grammatical relation under scrutiny is a subject of an intransitive clause or an e-NP of an existential clause (91), an experiencer of an experiential clause or a direct object of a transitive clause (92), etc.

- (91) Helista-b mu endise mehe uus naine.
 call-3SG I.G former.G husband.G new.N wife.N
 ‘My former husband’s new wife is calling. / It is my former husband’s new wife who is calling.’

- (92) Min-d huvita-b fotograafia.
 I-P interest-3SG photography.N
 'I am interested in photography.'

Similarly to existential constructions, (91) presents a new referent in the discourse and has a clause-final focal subject. However, the verb is semantically very active, which is rather characteristic of unmarked (intransitive) clauses. The nominative case-marking and verbal agreement are characteristic of both intransitive and existential constructions.

The analysis is further complicated by the fact that often there are also obligatory non-arguments in the clause that are not part of the clause type's definition (compare (93) with (37) in section 4.2).

- (93) Mu-l on su-lle üks palve.
 I-AD be.3 you-ALL one.N request.N
 'I have a request for you.' (possessive clause with an obligatory allative NP)

Hence, at least in the case of some of the clause types, the variation is too large for making any predictions on the basis of them. For comparison, behavioural constructions determine grammatical relations more uniformly: an argument either can or cannot occur in a particular construction.

However, as the clause type notion captures the correlations between cognitively primitive human experiences and the entrenchment of grammar structures (see section 3.1.3), I find that the notion of clause types is largely useful in defining grammatical relations in Estonian. The establishment of some of the aforementioned clause types seems to be justified because they represent very widespread patterns (like the transitive and intransitive clause) or because the alternative, verb-centered approach (see section 3.1.1) would allow for too much variation. This is the case with the predicate (copula) verb *olema* 'to be' in existential, possessive and some experiential clauses.³⁴

To have a more precise understanding concerning the clausal environment of Estonian arguments and grammatical relations (which is regarded in syntactic theories as the basis for determining syntactic categories, see section 1), I suggest it may be useful to carry out further studies to revise and break down at least some of these large clause types into separate argument coding frames,³⁵ and define them on the basis of predicate classes where possible. For example, in the article (Metslang to appear a) I define the subtype of the experiential clause as an experiential construction with the structure *ALL – V – N/P – (X)* (that includes the following elements: the typically topical allative experiencer NP which sometimes alternates with an adessive NP, the predicate verb and the

³⁴ In the context of predicative constructions, Erelt et al. (1993) define *olema* as a grammatical but not semantic predicate.

³⁵ See an example of such an approach in Lindström (2012). I thank Liina Lindström for a fruitful discussion on this topic.

typically clause final stimulus NP which can occur in the nominative or partitive; sometimes there is another obligatory NP in the clause):

- (94) Ta-lle (experiencer) meeldi-b fotograafia (stimulus).
s/he-ALL be.likeable-3SG photography.N
'He likes photography.'

The argument coding frame is lexically determined: the list of predicates that have this frame includes for example *meeldima* 'to be likeable', *tunduma* 'to seem', *meelde jääma* 'to stay in memory', *meelde tulema* and *meenuma* 'to occur, come to mind'. Also source-marking resultative and some existential clauses (and likely many other construction types) may be better determined as verb class specific argument structure constructions (cf. Metslang to appear a).

5.2. The coding of grammatical relations

This section gives an overview of the findings of this thesis on the following topics: e-NP's case-assignment factors (section 5.2.1), OLDAs' case-assignment determinants (5.2.2) and suggestions for a unified account of O's, e-NP's and OLDAs' case-alternation systems (5.2.3). Finally I will briefly discuss one of Estonian's significant alignment types, fluid intransitivity (5.2.4).

5.2.1. e-NP's case assignment factors

A major part of the thesis discusses the Estonian core arguments' case-alternation systems. Metslang (2012) attempts to give a comprehensive account of the e-NP's case use. The case-marking of the e-NP has been earlier described in a monograph by Nemvalts (1996; 2000). Although Nemvalts' carefully designed system is in a vast majority of aspects adequate, it was necessary to revise it in order to make it more applicable for the corpus analysis (which was done by simplifying some restrictions, and by ordering and measuring them).

The Estonian e-NP's case largely depends on one fundamental semantic feature underlying most case-assignment levels, which is quantitative definiteness. According to Lyons (1999: 2–13), definiteness involves both quality and quantity-related notions. Whereas qualitative definiteness primarily concerns identifiability (the speaker signals that the hearer is in the position to identify the referent of the expression), quantification is about inclusiveness. If an NP is definite due to inclusiveness, the reference is to the totality of the objects or mass in the context which satisfies the description. For example, in the sentence *Beware of the dogs*, 'the dogs' is definite because it refers to all the dogs, i.e. inclusive amount relevant in this context (e.g. in a particular house).

The obligatory or optional marking of the Estonian e-NP referent's inclusive or non-inclusive quantity is either tied to certain verbs, noun lexemes, NPs or constructions (a similar phenomenon also occurs in the Estonian object case

system). This has also been attested typologically: the non-canonical marking of arguments can depend upon a semantic parameter (like volitionality) which can manifest itself on different levels of grammar (Onishi 2001: 23–40).

In the article (Metslang to appear a), the following specific features are shown to have influence on the e-NP's case: the lexical properties of the subject noun, the subject referent's inclusiveness in the usage context; lexical predicates and particular constructions (specified on the basis of Rätsep 1978 and Nemvalts 2000) and other clause level and pragmatic properties (polarity, implicatures and presupposition). There occurs an interplay of all three case-assignment factor types proposed by Dixon (1994) and Witzlack-Makarevich (2011): referential and constructional/clause level factors and the influence of lexical predicates. On the basis of this classification of argument realization factors, the paper proposes an ordered four-level system of grammatical case-assignment rules. In the order of factor dominance, it consists of (i) polarity, (ii) lexical predicates and particular constructions, (iii) the subject noun's lexical properties, (iv) the referent's inclusiveness and pragmatic properties. There is a great overlap of several factors, this treatment only focuses on the dominating, case-triggering ones: if there is a conflict between the argument's case factors that occur simultaneously, it is the dominant factor that determines the argument's case.

The flow chart on Figure 5 summarizes the proposed e-NP's case system.³⁶ The chart presents a simplified version of the system proposed in this thesis. For example, on the figure lexical predicates are treated together with clausal constructions. Also, Metslang (to appear b) treats the inclusiveness-related phenomena in a more fine-grained way – on two separate levels.

Among the 279 existential clauses that were studied in Metslang (2012), the most frequent subject case-assignment determinants are the nominative taking noun type (the 'Existential nominatives' group that includes for example singular count nouns and some abstract nouns that can only appear in the nominative in affirmative existentials; cf. (98) below), NP referent's situational (contextual) inclusiveness and negation. Also the specific nature of the partitive case (as a form marking non-inclusive meaning) has a general level influence on the subject case in affirmative existential clauses. However, the crucial precondition for the option of subject case alternation is usually the existential construction environment itself whose defining feature is the topicality effect (the topic of the sentence is the locational adverbial and the e-NP tends to serve as the focus of the clause).

³⁶ Flow charts have been used before for illustrating the hierarchical nature of differential object marking system in Estonian (e.g. Rajandi & Metslang 1979: 14) and Finnish (Vilkuna 1996: 119).

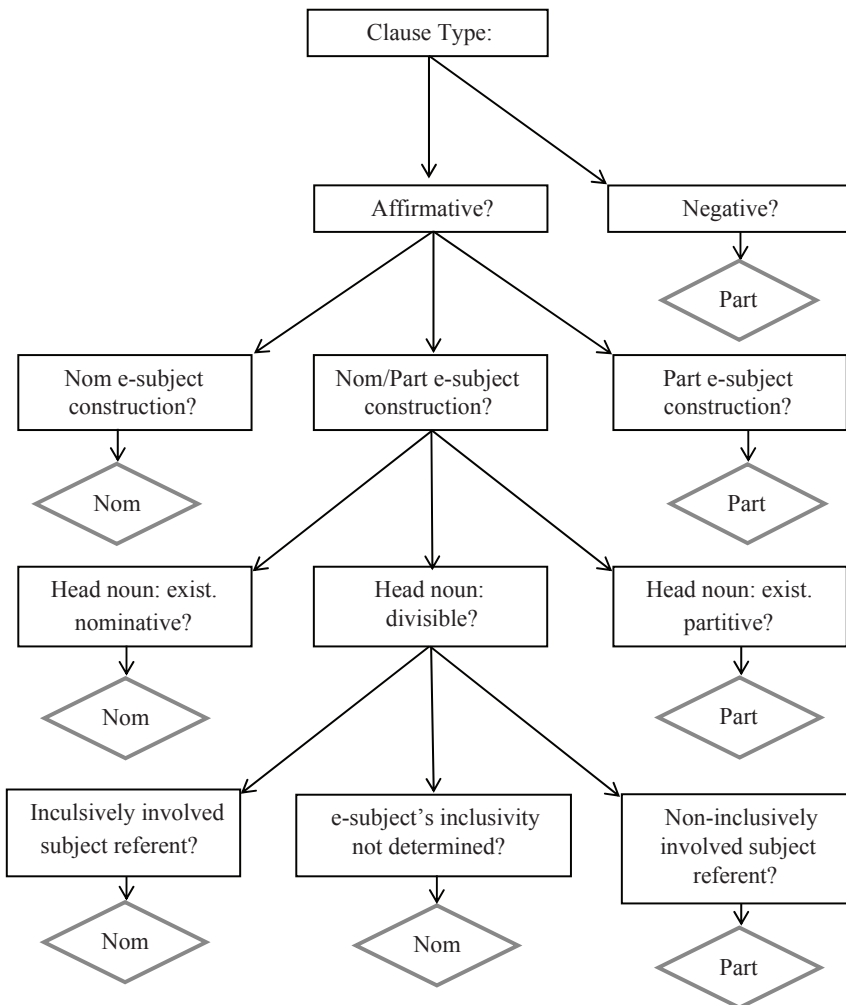


Figure 5. Four levels of factors of differential e-NP marking in Estonian.

The following sentences exemplify the first three levels (see (100)–(103) below for the fourth level).

- (95) Kassi vaate-s ei ol-nud **mingi-t märguannet**.
 cat.G look-INE NEG be-PST.PTC any-P signalling-P
 ‘There was no sign (signalling) in the cat’s look.’ (e-NP occurs in the partitive in negation)
- (96) **Meistri-t** jätku-s iga-le poole.
 master-P suffice-PST.3SG every-ALL direction
 ‘The master could help out everywhere.’ Lit. ‘The master sufficed (was) everywhere.’ (Rätsep 1978: 154) (‘partitive e-NP only’ construction)

- (97) Köögi-st vaata-s vastu **segadus**.
 kitchen-EL look-PST.3SG back mess.N
 ‘There was a mess in the kitchen.’ Lit. ‘There was a mess facing (me) in the kitchen.’ (‘nominative e-NP only’ verb; this factor is presented under case-determining *constructions* in the flow chart)
- (98) Sugene-s pisut piinlik **vaikus**.
 appear-PST.3SG a.bit embarrassing.N silence.N
 ‘A bit of an embarrassing silence appeared.’ (an e-NP belonging to the noun group Existential nominatives)
- (99) Endal=gi Ø **ruumi** vaevalt ringi pööramise-ks.
 self=CL (be.3) space.P merely around turning-TR
 ‘We ourselves (have) only just (enough) space for turning around.’ (an e-NP belonging to the noun group Existential partitives)

This flowchart includes factors, several of which have also been suggested by Nemvalts (2000). In contrast to Nemvalts’ treatment, I have for instance reviewed aspect’s role among the case-triggering factors and added the lexical groups Existential nominatives and Existential partitives. Nemvalts uses a set of semantic features in explaining this area of e-NP case-marking: [\pm count], [\pm concrete], [\pm total] and [\pm complex]. As not all uses can be explained by their semantic features, I suggest a simplified system by positing the lexical groups.

One of the most complex elements of the e-NP’s case-marking system is the lowest level in the flow chart in Figure 5, which is the marking of divisible NPs (plural nouns and mass nouns).³⁷ This aspect overlaps with one part of object’s case factors system, which is the inclusiveness (boundedness) of the object referent. This level of e-NP case-marking concerns a situationally triggered inclusiveness meaning of e-NPs. The paper Metslang (2012) proposes a new functional account of this based on a binary division: the case alternation either depends on the **presence or lack of inclusiveness specification of the e-NP referent (PLI)** or on the opposition of the e-NP referent’s **inclusive – non-inclusive quantity (IN)**. The distinction between these two oppositions, PLI and IN, is in different **implicatures** that arise from situational uses. The e-NP case-alternation illustrates the cross-linguistically attested distinction between semantic content and implicatures (what is said vs. what is being communicated) (cf. Haspelmath 2006). Haspelmath illustrates this phenomenon with the following example. In different situational uses, a word with a more general meaning (e.g. ‘lion’) can take on distinctive implicatures: ‘lion in general’ (semantically unmarked) vs. ‘a male lion’ (semantically marked: minus-meaning). Both of them can be opposed to the semantically marked ‘lioness’ (plus-meaning) (ibid.). In Estonian existential clauses, the semantically unmarked (neutral) nominative takes on in some contexts a specific implicature

³⁷ See Metslang (2012: 158) for further definitions of *divisibles*.

‘inclusive quantity’. As the nature of the partitive case is the marking of non-inclusive quantity, the semantic content of the partitive NP is always specified (marked) for inclusiveness. For example:

- (100) Selle-l kase-l on juba **lehe-d**.
 this-AD birch-AD be.3 already leaf-N.PL
 ‘This birch has leaves already.’ (adapted from Vilkuna 1992: 61.) (the IN opposition, marked quantity: inclusive referent; a contextual boundary delimits the possible amount of leaves in the context: the whole leafage of one tree)
- (101) Selle-l kase-l on juba **leht-i**.
 this-AD birch-AD be.3 already leaf-P.PL
 ‘This birch has some leaves already.’ Lit. ‘On this birch is some leaves.’ (the IN opposition, marked quantity: non-inclusive referent; in the spring, not all leaves have appeared on the tree yet, only some have)
- (102) Maa-s ol-i **rohi**.
 ground-INE be-PST.3SG grass.N
 ‘There was grass on the ground.’ (the PLI opposition, unmarked quantity: there is no contextual boundary and the quantity of the referent is irrelevant in the context, the nominative is the default case)
- (103) Maa-s ol-i **rohtu**.
 ground-INE be-PST.3SG grass.P
 ‘There was (some) grass on the ground.’ (the PLI opposition, marked quantity: non-inclusive, no contextual boundary)

5.2.2 OLDAs’ case assignment factors

The articles (Metslang 2007 and 2008) discuss the **case choice factors of OLDAs**. OLDAs have three main types:

- duration OLDAs;
- quantity OLDAs;
- iteration OLDAs (absolute cardinal iteration OLDAs, relative cardinal iteration OLDAs and ordinal iteration OLDAs).

(See sections 4.3 and 4.4 for an overview.) Most of this subsection is devoted to the partitive – total case (i.e. the nominative and genitive case) alternation of all OLDA types. This is juxtaposed to the one of direct objects. In the final part of this section I will shortly discuss a unique case-alternation that only occurs with OLDAs. This alternation takes place between the nominative and genitive case of duration OLDAs. It mainly signifies distinctions in tense and Aktionsart interpretation.

The case of all OLDA types can either be total or the partitive. Similarly to objects, OLDAs’ case-assignment can be analyzed in terms of the NP referent’s

and the situation's semantics. In addition, an OLDA's case can also depend on its modifier's meaning, cf. Table 4.

Table 4. Comparison of object's and OLDAs' semantic case assignment factors (on the basis of Metslang 2008). Are OLDAs' case-assignment factors similar to the ones of the object?

Adverbial type	Object's case choice factor: participation in an imperfective situation (partitive)	Object's case choice factor: non-inclusive referent (partitive)	OLDA's case choice factor: the modifier is a noun expressing ordering (partitive)	Object's case choice factor: perfective situation and inclusive referent (total case)
Duration OLDA	N/A	similar	N/A	similar
Quantity OLDA	similar	similar	N/A	similar
Absolute cardinal iteration OLDA	N/A	similar	N/A	similar
Relative cardinal iteration OLDA	different	similar	N/A	N/A
Ordinal iteration OLDA	N/A	similar	different	N/A

When assessing an OLDA's case with respect to situational aspect, I consider the aspect of the situation *containing* an OLDA (and not the situation's aspect before the OLDA is added). The table indicates the following facts of OLDAs' case-marking system.

Object's case choice factor: participation in an imperfective situation (partitive). Participation in an imperfective situation is not possible with most OLDA types. Duration, quantity and absolute cardinal iteration OLDAs normally occur in perfective situations, therefore this partitive object condition is not met, see examples (104)–(105). However, in the case of quantity OLDAs, the occurrence in imperfective situations can bring about the use of the partitive (Erelt et al. 1993: 87). Although ordinal iteration OLDA's default case is the partitive, it is not caused by the situation's imperfectivity but phrase-internal issues (106). And although relative cardinal iteration OLDA tends to occur in imperfective situations, its case is usually total (107).

Object's case choice factor: non-inclusive referent (partitive). All OLDA types can have a non-inclusive referent and can then take the plural partitive, see example (108). However, this is not one of the central, more frequent uses of OLDAs.

OLDA's case choice factor: the modifier is a noun expressing ordering (partitive). The partitive-assignment rule regarding modifiers expressing ordering (*teis-t korda* [second-P time.P] 'for the second time') only concerns ordinal iteration OLDAs, see (109). As the occurrence of such a modifier does

not cause the use of the partitive on the object, see example (110), the the case-assignment of the object and ordinal iteration OLDA is different with respect to this factor.

Object's case choice factor: perfective situation and inclusive referent (total case). Usually the semantic conditions that require the use of a total object are fulfilled in the case of OLDAs. This means that simultaneously, both the situation's aspect must be perfective and the phrase's referent inclusive. Under such conditions, duration, quantity and absolute cardinal iteration OLDAs occur in the total case, see example (104). This is the central, most frequent use of these OLDAs. The situation is different with ordinal iteration OLDAs. Although they can occur in the total case if they have an inclusive referent, see example (111), their case is not affected by the aspect of the situation (total case ordinal iteration OLDAs occur in both perfective and imperfective situations). The relative cardinal iteration OLDAs' total case use factors are also different from the ones of the object because the situation containing this OLDA is imperfective. The latter interpretation is supported by the fact that it is possible to add a duration OLDA to the clause containing a relative cardinal iteration OLDA (cf. Erelt et al. 1993: 84).

- (104) Juku suusata-s **kaks** **tundi**.
 Juku.N ski-PST.3SG two.N hour.P
 'Juku skied for two hours.' (total case duration OLDA, inclusive referent, perfective aspect)
- (105) Heit-si-n **korra** pilgu enda taga kasva-va-le järjekorra-le.
 cast-PST-1SG once.G glance.G self.G behind grow-PTC-ALL queue-AD
 'I took a glance once at the growing queue behind me.' (absolute cardinal iteration OLDA in the total case, inclusive referent, perfective aspect)
- (106) Tõnu oli **teis-t** **korda** haige.
 Tõnu.N be-PST.3SG second-P time.P ill
 'Tõnu was ill for the second time.' (ordinal iteration OLDA in the partitive, inclusive referent, imperfective aspect)
- (107) **Iga** **kord** vaata-s ta korraks
 every.N time.N look-PST.3SG s/he.N for.a.moment
 Anette ilusa maja poole.
 Anette.G lovely.G house.G towards
 'Every time he stole a glance at Anette's lovely house.' (total case relative cardinal iteration OLDA, inclusive referent, imperfective aspect)
- (108) Raamat maksa-b **kopika-i-d**.
 book.N cost-3SG copeck-P-PL
 'The book (only) costs kopecks (i.e. not much).' (quantity OLDA in the partitive, non-inclusive referent, imperfective aspect)

- (109) Järv jäätu-s teis-t korda ära.
lake.N freeze-PST.3SG second-P time.P up
'The lake froze for the second time.' (ordinal iteration OLDA in the partitive, inclusive referent, perfective aspect)
- (110) Jaan teeni-s võistluse-l kolmanda koha.
Jaan.N earn-PST.3SG competition-AD third.G place.G
'Jaan earned the third place at the competition.' (if an object contains an ordinal numeral as a modifier it does not cause the use of the partitive, as it is often the case with ordinal iteration OLDA)
- (111) **Eelmine kord** eksi-si-n novembri-t prognoosi-des.
previous.N time.N mistake-PST-1SG November-P forecast-CONV
'Last time I made a mistake when forecasting November.' (ordinal iteration OLDA in the total case, inclusive referent, perfective aspect)

From the viewpoint of the semantic case-assignment factors, duration, quantity and absolute cardinal iteration OLDAs form a uniform group that is the closest to the object. Relative cardinal and ordinal iteration OLDAs are considerably different from the other types.

An object's case can also depend on the verb's grammatical form. Certain verb forms (negation, the supine and its inessive and elative forms and converbs) require a partitive object, while some others require a nominative object if a total case is used (imperative, impersonal and the *da*-infinitive, as the main verb of the clause or as a NP modifier) (see also section 4.4 on object's case-marking factors). Metslang (2008) analyzes these verb forms' impact on the OLDAs' case. The results are summarized in Table 5.

Table 5. Comparison of object's and OLDAs' formal case assignment factors (on the basis of Metslang 2008). Are OLDAs' case-assignment factors similar to the ones of the object?

Adverbial type	Verb forms requiring partitive object	Verb forms requiring nominative total object
Duration OLDA	different	similar
Quantity OLDA	partly similar	similar
Absolute cardinal iteration OLDA	partly similar	different
Relative cardinal iteration OLDA	different	different
Ordinal iteration OLDA	different	different

Again, duration, quantity and absolute cardinal iteration OLDA are closer to the object than the other OLDA types. The following examples show how OLDAs are used with the verb forms that require a partitive object.

- (112) Juku **ei suusata-nud kahte tundi=gi.**
 Juku.N NEG ski-PST.PTC two.P hour.P=CL
 ‘Juku did not even ski for two hours.’ (negation, duration OLDA in the partitive)
- (113) Linna-s **ei saa astu-da sada-t meetri-t=ki,**
 town-INE NEG can step-INF hundred-P metre-P=CL
 ilma et kohta-ks Vene sõjaväelas-i.
 without that meet-COND Russian soldier-P.PL
 You can’t walk a hundred metres in the city without seeing Russian soldiers.
 (negation, quantity OLDA in the partitive)
- (114) Kui ol-i-n harju-nud pileti eest **viisteist krooni maks-ma,**
 when be-PST-1SG be.used.to-PST.PTC ticket.G for fifteen.N kroon.P pay-INF
 tõus-is hind jälle.
 rise-PST.3SG price.N again
 ‘No sooner had I got used to paying fifteen kroons for a ticket then the price went up again.’ (supine, quantity OLDA in the total case)
- (115) **Kah-t korda** ühte jõkke **ei astu.**
 two-P time.P one.IL river.IL NEG step
 ‘You do not step into the same river twice.’ (negation, absolute cardinal iteration OLDA in the partitive)
- (116) **Oll-es** vaenlase poolt juba **kaks korda** tagasi löö-dud,
 be-CONV enemy.G by already two.N time.P back repel-PST.PASS.PTC
 asu-si-d väe-d taas rünnaku-le.
 commence-PST-3PL troop-N.PL again attack-ALL
 ‘Having already been repelled twice by the enemy, the troops mounted another attack.’ (converb, absolute cardinal iteration OLDA in the total case)

The following set of examples show how OLDAs are used with the verb forms that require total case objects to be in the nominative.

- (117) **Jooks-ke mõni tund** sõrki, siis hakka-me harjutus-i tege-ma!
 run-IMP.2PL a.few.N hour.N jog.P then start-1PL exercise-P.PL do-INF
 ‘Jog for an hour or so, then we’ll do some exercises.’ (imperative, duration OLDA in the nominative)
- (118) Tõnu-l on kavatsus **kasvata-da** juukse-i-d veel **mõni sentimeeter.**
 Tõnu-AD be.3 plan.N grow-INF hair-PL-P more a.few.N centimetre.N
 ‘Tõnu is going to grow his hair a few more centimetres.’ (imperative, quantity OLDA in the nominative)

- (119) Vanaisa-l on kavatsus lammas teis-t korda ära püga-da.
 Grandpa-AD be.3 plan.N sheep.N second-P time.P up shear-INF
 ‘Grandpa intends to shear the sheep a second time.’ (*da*-infinitive as a noun modifier, partitive ordinal iteration OLDA)

Metslang (2007) discusses a unique case-alternation phenomenon only characteristic of OLDAs. Namely, some OLDAs show an interesting parallel development to their main total-partitive case-alternation. Some duration OLDAs that have a noun (i.e. not a quantifier) as the phrasal head **alternate between the nominative and the genitive** (this has been mentioned earlier in Erelt 2000: 96). The following minimal pair exemplifies the distinction:

- (120) Operatsioon toimub kohaliku tuimestusega ja patsient
 operation takes.place local with.anaesthesia and patient
 on kogu aja ärkvel.
 be.3 all.G time.G awake
 ‘The operation is carried out under local anaesthetic and the patient is awake the entire time.’ (genitive total case OLDA)

- (121) on kogu aeg ärkvel.
 be.3 all.N time.N awake
 ‘... is awake all the time.’ (HM) (nominative total case OLDA)

Although the difference in meaning is not considerable, the OLDA’s nominative case form seems to be preferred for a more neutral expression. The study showed that the genitive is used if one wishes to highlight the interpretation of a continuous, durative meaning (instead of iteration). There is also a link between the predicate’s tense form and the choice of case-marking. The present perfect tense has two meaning components: the pastness feature and the presentness feature that can be highlighted in the sentence Unlike the nominative OLDA, the genitive OLDA highlights the pastness of the situation and backgrounds its presentness feature when the sentence is in the present perfect or generic tense. See Metslang (2007) for additional possible interpretations.

5.2.3. Comparison of O’s, e-NP’s and OLDAs’ case assignment factors

In this section I will first compare the e-NP’s and O’s case determinants. I will start with comparing the quantification related case-assignment of the divisible e-NPs and Os (the fourth level of e-NP’s case factors’ system described in section 5.2.1). After that I will proceed with comparing the the whole case factors systems of e-NP and O on the basis of corpus data. Then the impact of the Referential Hierarchy and aspect on the case-marking of e-NP, O and

OLDAs will be discussed. The last part of this section summarizes the findings on different arguments' case-marking.

Metslang (to appear b) studies the ways of bringing together the largely overlapping e-NP's and direct object's case-marking systems. I suggest that one part of merging them should be the unification of the e-NP's fourth level case-marking rules (based on the contextually, i.e. situational and not lexical quantity distinctions of divisible e-NPs: the PLI and IN oppositions) with the ones of the divisible O. I propose two **quantification-related hierarchies** for it that specify the semantic motivations behind the case-alternation. It is necessary to have two separate hierarchies, as they concern different level phenomena. They oppose the partitive and total case (the genitive and nominative in the case of O and the nominative in the case of e-NP) factors.

I will first introduce what I call the Quantitative markedness hierarchy:

- (122) Quantitative markedness hierarchy (Metslang to appear b)
UNMARKED QUANTITY > MARKED QUANTITY

Quantitative markedness depends on whether the referent's inclusiveness is relevant for the speaker or not. The argument takes the total case if it has a semantically unmarked quantity (i.e. if it is not specified whether the quantity of the referent in question is inclusive or non-inclusive: it is irrelevant for the speaker whether the referent participates in the situation totally or only part of it does). See example (102) in 5.2.1 for an e-NP with unmarked quantity and (123) for an O.

- (123) Linnaosavalitsus-te-s moodustata-kse **lasteringi-d.**
borough-PL-IN form-IMPS children's.circle-N.PL
'Children's groups will be formed in boroughs.' (adapted from Erelt et al. 1993: 51)

The Quantitative markedness hierarchy does not specify the case of these arguments that have semantically marked quantity. Hence several e-NPs and Os need their case assigned elsewhere: in the other quantification hierarchy (in fact, in the case of O, unmarked quantity seems to be rare, in the small-scale corpus used in this study there were no examples of it).

In Metslang (to appear b) I pose the hypothesis that if an argument's quantity is relevant to the speaker (i.e. the speaker specifies whether the referent has inclusive or non-inclusive quantity) then another (nested) hierarchy triggers its case-marking. I call it the Inclusiveness hierarchy.

- (124) Inclusiveness hierarchy (Metslang to appear b)
INCLUSIVE QUANTITY > NON-INCLUSIVE QUANTITY

If the argument's quantity is non-inclusive it takes the partitive, and if its quantity is inclusive it has the opportunity of taking the total case (in the case of

the object, also the situational aspect is involved in the final case designation (see section 4.4 and below); no further factors influence the case of the e-NPs with inclusive/non-inclusive quantity). The semantic difference between unmarked quantity and non-inclusive quantity reference is that the former makes no reference to quantity at all (it just identifies the referent) whereas the latter states that the quantity is unbounded.

To summarize, divisible e-NPs' and Os' case can either depend on the Quantitative markedness hierarchy or on Inclusiveness hierarchy. The features on the left hand side of each hierarchy contribute to total case-marking of both e-NP and O. Larger quantitative studies are needed to confirm e-NP's and O's dispositions in these hierarchies in order to state which semantic options and respective case-uses are more frequent among each argument type. The studies (Metslang 2012: 196 and to appear b) suggest that e-NP's preferences are not very strongly biased towards any of the options of the two hierarchies. Also in the case of the Inclusiveness hierarchy, the inclusive and non-inclusive O only have a relatively small difference in frequencies. The only strong distinction is O's clear preference for marked quantity over unmarked quantity (cf. Table 6 below).

For comparison, the Referential Hierarchy is topicality-based and clearly distinguishes the dispositions of different argument types (e.g. A is preferentially animate and definite and O is more likely to be inanimate). Why in the quantification-related hierarchies arguments exhibit few dispositions for either end of each hierarchy (apart from O's preference for marked quantity in the Quantitative markedness hierarchy) is probably related to the fact that quantification-related hierarchies are not influenced by the grammatically crucial topical-non-topical distinction. Cf. a similar study carried out by Malchukov and de Hoop (2011) on the impact of tense, aspect and mood related hierarchies on Finnish object marking.³⁸

The article (Metslang to appear b) suggests a method for a **full corpus-based comparison of the direct object's and e-NP's case factor systems**. As mentioned above, the case of both argument types can be determined by referential, predicate level and clause level factors (see examples in sections 4.4 and 5.2.1). The triggering factors' corpus frequencies are illustrated in Table 6 and Figure 6. This analysis is based on the Parsed Corpus of the Corpus of Written Estonian. The same method should be applied on a larger dataset and different genres and speech situations to get a more balanced picture of the arguments' case system preferences.

³⁸ I thank Merilin Miljan for sourcing this.

Table 6. Comparison of the triggering factors influencing the object’s and e-NP’s case in the data (n=229; Metslang to appear b).

Level	No	Decisive case factor	O % prominence	e-NP % prominence
Referential properties	1.	inclusiveness unmarked (Quantitative markedness hierarchy)	0 absent	16 significant
	2.	Inclusiveness hierarchy	54 prominent	14 significant
	3.	inclusiveness of noun lexemes	0 absent	47 prominent
	4.	personal pronouns (SAP)	4 insignificant	0 absent
Verb’s properties	5.	lexical predicates	32 prominent	2 insignificant
Clausal properties	6.	aspect	54 prominent	0 absent
	7.	negation	10 significant	20 prominent
	8.	constructions (e.g. Rätsep 1978)	0 insignificant	1 insignificant

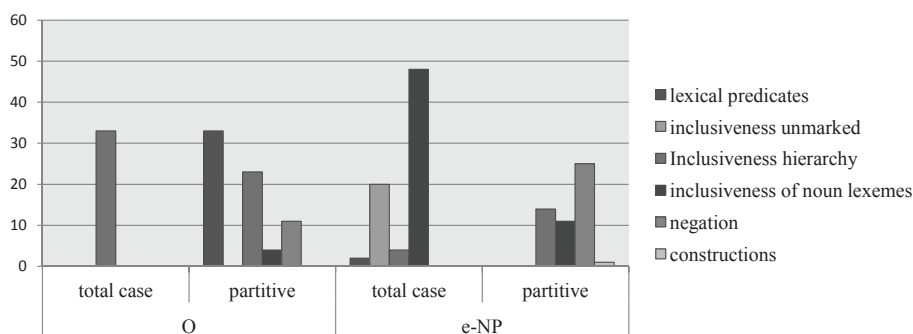


Figure 6. Frequencies of O’s and e-NP’s case-assignment motivations in the corpus (absolute numbers, n=229)

In Figure 6, the factor ‘inclusiveness unmarked’ refers to the Quantitative markedness hierarchy. Among the case-marking criteria, the most frequent case-choice factor of e-NP is the NP’s (the head noun’s) lexical properties in the corpus. O’s most frequent case factor is the Inclusiveness hierarchy. In the case of O, the Inclusiveness hierarchy information also involves the parallel aspectual specification (perfective vs. imperfective aspect) of the situation; see Metslang (to appear b) for details. As the most frequent case of O is the partitive, it is noteworthy that it is not the Inclusiveness hierarchy that most commonly triggers O’s partitive marking in the data, but lexical predicates.

The prominent factors influencing the case of O are (i) lexical predicates and (ii) the combination of aspect and the Inclusiveness hierarchy. The main case-factors of e-NP are NP's lexical level inclusiveness and negation. The particular case choice factors that are significant or prominent for both the e-NP and the object are negation and the Inclusiveness hierarchy. However, the former is more frequent in determining e-NP's case and the latter in determining O's case. In the corpus there are factors that determine only one argument's case but (at least in most cases) not the other one's case. These include the Quantificational markedness hierarchy (unmarked inclusiveness), NP's lexical level inclusiveness, personal pronouns, the influence of lexical predicates and aspect.

The article Metslang (to appear b) also looked at the **impact of other semantic and message packaging features on O's and e-NP's case-marking**. No statistical biases occurred which suggests that these arguments' case-marking is rather rules based (see above). The exception here is the Referential Hierarchy that explains some minor distinctions in O's and e-NP's case-marking (speech act participants occur as partitive Os, abstract e-NPs are disproportionately common in the partitive).

In the following part of this subsection I will briefly discuss the impact of two meaning-related dimensions that impact these arguments' case-marking studied here, which are the impact of aspect and the Referential Hierarchy.

It has been suggested that **aspect** influences the case-marking of Estonian objects, e-NPs and OLDAs (Erelt et al. 1993; Kont 1962; Metslang 2007; Nemvalts 2000; Tamm 2004). As mentioned above, the aspectual bounding of the situation may occur on the lexical level of the predicate but also by the use of other elements of the clause. Nemvalts (2000) suggests that also e-NP's case is an expression means of situational aspectual bounding. Metslang (2012) finds that aspectual distinctions are an epiphenomenon of e-NP's case-alternation that is based on quantity-related hierarchies. According to this thesis, situational aspect can hence be an independent factor of object's and OLDA's case but not of e-NP's case.

Section 5.1.2 outlined the occurrence of the **Referential Hierarchy** parameters among the argument types. Here I will discuss the impact of the hierarchy on the arguments' case. The hierarchy predicts that semantically high Os are more overtly marked than low Os. It also predicts that low A arguments are more overtly marked than high As. Regarding the marking of objects, Estonian follows the hierarchy: the most prominent NP type, which are the pronouns, are often in the partitive (i.e. bear overt marking) in the contexts where objects expressed by a heavier NP have a total case (no overt marking); see also Helasvuo (2001) on her similar findings in Finnish. It is also typologically common that the pronouns show deeper nominative-accusative alignment effects than heavier NPs. The Estonian A marking is not influenced by the hierarchy. However, a Referential Hierarchy-like effect occurs in the marking of intransitive subjects (S). If we regard e-NP as a non-canonical

instance of S, then we can distinguish between the unmarked intransitive clause subject (the semantically high S, commonly bearing the agent role) and the low S (e-NP, usually bearing the semantic theme role). As e-NP's case alternates between the nominative and the partitive, it has more overt marking than the intransitive subject which only takes the nominative. Hence the predictions the Referential Hierarchy makes about the transitive subject reflect in the intransitive subject category (see also Hiietam 2003 on the diffusion of the transitive domain's features like individuation, described by Hopper and Thompson 1980, into the intransitive domain in Estonian).

To summarize section 5.2, the case-marking systems of these argument types have in most cases been generally studied separately, for example by Ereht et al. (1993; object, e-NP and OLDA); Kont (1963; object); Nemvalts (2000; e-NP); Metslang (2007; 2008 and 2012; OLDA and e-NP), Rannut (1958; OLDA). The factors influencing different Estonian arguments' case-assignment have been compared, for example by Tamm (2004) and Metslang (to appear b).

The findings of this thesis suggest that **O, e-NP and OLDA largely depend on the same case-marking system that includes several argument realization levels**: the levels of referential factors (NP level) and clausal factors as well as of lexical predicates. When comparing the O's, the e-NP's and OLDA's case alternation systems, it can be concluded that O's system seems to be the oldest (as suggested in the studies on the Finnic languages in general) and can be regarded as the prototype. It is elaborate and productive and shows great variation (cf. Table 6). Also e-NP's case-alternation system is very elaborate showing a similar number of distinctions. OLDAs' total case – partitive system is more limited. It only involves two types of case choice factors. Similarly to O and e-NP OLDAs' case can depend on referential factors (phrase referent's inclusiveness) and clausal factors (the verb's form).³⁹ However, productive alternation between the total case and the partitive is possible with fewer lexical items. I was unable to find evidence of lexical predicates impacting the OLDAs' case. The possibility of the OLDA's occurrence in a clause depends on situational aspect.

5.2.4. On alignment in Estonian

To conclude this overview I will discuss the applicability of the ergativity-related notion of *fluid intransitivity* on Estonian intransitive subject marking.

In Metslang (to appear b) I suggest that there is word order-based **fluid intransitivity** that occurs in Estonian. If we consider (label) e-NP (both in the nominative and partitive) a non-canonical intransitive subject, it can be regarded

³⁹ An exception to the system is the ordinal OLDA's case (e.g. *teis-t korda* [second-P time.P] 'for the second time'), which commonly freezes the partitive without any clear motivation.

as an S with an O-like coding: it is typically clause-final, it can be marked by the partitive and in most cases it has no clear verbal agreement. The canonical intransitive subject has A-like coding: it is marked by the nominative, the verb agrees with it and it tends to be clause-initial. Most of intransitive verbs can take either argument as their subject, depending on the chosen information structure and the meaning the speaker wants to express: either to say something new about the subject referent (unmarked clause intransitive subject) or present a new referent in the discourse and rather say something about the location where this new referent occurs (e-NP). As the S-marking alternation is not tied to particular predicates but is determined by clausal and contextual matters, the alternation can be analysed as fluid intransitivity (and not split intransitivity; cf. section 3.5.3). This distinction has a significant position in Estonian grammar because the group of verbs that participates in the alternation is very large (according to some studies, over 500 verbs, cf. Nemvalts 2000: 106).

6. CONCLUSION

6.1. Dissertation's contribution to the field

Grammatical relations, including subject, object and their border areas, are central elements of sentence structure and have been at the heart of debate in Estonian linguistics, and in linguistics in general. This thesis studies different grammatical relations in Estonian from the viewpoint of typological, cognitive and functional theories of grammar. What unites all the different insights of this thesis are the empirical approach and the common parameters that have been used for describing them. These include their semantic and pragmatic properties and the grammatical relations' contribution to the development of the structural, semantic and information structural makeup of clausal constructions.

The main contribution of this thesis to Estonian linguistics is suggesting holistic models for defining grammatical relations and making comparisons of their case-marking. This dissertation proposes a new approach to defining the subject category in Estonian by focusing on morphosyntactic behavioural properties. It is well-known that the case-alternation of both the existential clause argument (e-NP) and the object-like degree adverbials (OLDAs) resembles that of direct object in Estonian. In the thesis, the case-marking systems of e-NP and OLDAs are reviewed and systematically compared with that of the direct object. The study also analyzes whether there are any statistical preferences for object's and e-NP's case across different semantic and message-packaging properties. However no such biases were identified. The exception here is the Referential Hierarchy that explains some minor distinctions in O's and e-NP's case-marking (speech act participants occur as partitive Os, abstract referents are disproportionately wide-spread among partitive e-NPs).

Furthermore, a new emerging case-alternation was examined closer for the first time. In addition to the better described alternation involving the partitive case, OLDAs show a meaning distinction between the nominative and genitive case uses.

All the findings of this thesis are based on corpus data. In the subjecthood study multivariate analysis has been used, which is a method for reconciling language-specific studies with general typological research (Bickel 2011). Multivariate analysis has been mainly applied on studying argument coding. Its application on syntactic behaviour properties (as it has been done in this thesis) is a novel and less used approach in typology. The study also shows how grammatical rules and more flexible statistical biases can be employed together in a principled way in describing and defining grammatical relations.

The main contribution of this thesis to international linguistic discourse is providing a typologically informed description of the main features of the central grammatical relations in Estonian. This can be used as an input for larger cross-linguistic studies, including the research on the cross-linguistic

prototypes of subject and object. Some more detailed findings of this thesis concern the factors influencing subject behaviour and the spread of fluid intransitivity in a language like Estonian that is generally thought of as accusative. The thesis also provides an evaluation of how the Referential Hierarchy hypothesis applies to the Estonian data. In the following I will outline these issues more in detail.

The research carried out confirms that on the construction-specific level, the morphosyntactic behaviour of Estonian subjects depends on case and topicality, which are the factors commonly described in argument behaviour literature. However, I suggest that there is a distinction between the factors that influence the subject's morphosyntactic behaviour on the construction-specific level, and on the global level (i.e. the Role and Reference Grammar's generalized privileged syntactic argument). The behaviour of the global subject is clearly influenced by a composite factor in Estonian: the clausal construction type (the specification of the construction type – in the Estonian tradition, *clause type* – involves a combination of argument coding frames and topicality).

The thesis shows that traits of ergativity, more specifically, fluid intransitivity, can be widespread in languages generally regarded as accusative. In Estonian there are over 500 verbs that show a distinction in the marking of intransitive subjects: the subject of each verb can either be marked like a transitive subject or like an object. The object-like marking of the intransitive subject (i.e. of the e-NP which may also be called a non-canonical subject or the low S(subject)) manifests itself in the word order and often also in object-like case-marking and lack of verbal agreement.

In the thesis I discussed the typologically widely used but controversial Referential Hierarchy hypothesis. The hierarchy creates the hypothesis that the more salient referents of the discourse are likely to be unmarked in the transitive subject position and marked in the object position, and that the less salient referents tend to be unmarked in the object position and marked in the transitive subject position. The study showed that the Estonian data confirms some of the hierarchy's predictions while rejecting others. It also showed that the Referential Hierarchy can predict differences in the intransitive domain (in the intransitive subject vs. e-NP marking), suggesting that the transition from the transitive to intransitive syntax is gradual.

6.2. Questions for further research

The findings presented in this thesis raise a number of questions and possible directions for future research. They concern providing a fuller and more balanced description of the core grammatical relations in Estonian (the subject, object and their border areas), carrying out research on the syntax-pragmatics interface of grammatical relations, further analyzing the applicability of different grammatical relations related hierarchies on Estonian data, revising the

set of construction types and verb classes that condition different argument coding frames in Estonian and drawing a distinction between arguments and adjuncts.

This thesis provided an example how different grammatical relations can be defined and compared in Estonian: the methods I deployed for analyzing the subject's coding and behaviour and semantic and information structural properties can be tailored for determining the precise properties of the object as well. Behavioural properties-based diagnostics for determining direct objects have for example been utilized in Dalrymple and Nikolaeva (2011). They state that the suitable diagnostics of non-subjects are also syntactic and language-specific, as grammatical relations' behaviour varies from language to language (ibid.: 24). Such morphosyntactic properties have been used earlier by Hiietam in defining both Estonian subjects and objects. It would be useful to revise her findings on the basis of corpus data. It may also be beneficial to revise Hiietam's initial set of criterial object properties, as the set of potential object properties is open. In addition, the statistical findings of this thesis on the semantic, coding and information structural properties of Estonian grammatical relations can be supplemented by more extensive corpus-based research that takes into account different genres and also spoken language (cf. for example Helasvuo 2001 for such a study on spoken Finnish). Larger data sets should be analyzed and the criterial properties should be weighed with respect to each other (the most suitable methods for it are statistical; Aarts 2007; Gries 2003). There are ample possibilities for describing the links between argument coding and information structure. When further determining grammatical relations in Estonian, more attention could be paid to givenness and topicality (cf. Dalrymple and Nikolaeva 2011).

An avenue of future research that would also be promising from the viewpoint of grammatical theory is studying the possibilities for distinguishing core arguments from adjuncts and specifying the position of obliques and obligatory non-arguments of the clause. This topic has only been touched briefly in this thesis when discussing the elements of one of the Estonian experiential constructions. The criteria that have been suggested for distinguishing arguments from adjuncts include for example obligatoriness of the element in the clause, the semantic relationship between the dependent and its head (arguments denote participants and adjuncts are used for marking circumstantials of events) and collocational relations (e.g. the possibility of the expression *give protection* and the impossibility of **give yesterday* implies that *protection* is an argument and *yesterday* is an adjunct) (cf. Croft 2001: 272–273 and Matthews 1981).

The patterns of how elements of argument structures are coded are largely influenced by clausal constructions and predicate verbs. This thesis confirmed that both types of influence (government) are relevant in Estonian in the case-assignment of the e-NP. Future studies could further specify the role of each factor in the formation of Estonian argument coding frames. Currently there are

two influential approaches in Estonian grammar descriptions: Rätsep's approach (1978), where he established a vast set of narrow verb-governed sentence patterns, and newer approaches that have determined a small number of broad clause types (Erelt et al. 1993; Erelt and Metslang 2006). Both these approaches employ formal as well as semantic properties. In addition, the clause types are also based on topicality. It will probably be helpful to bring these two approaches closer to each other, narrow down the number of Rätsep's patterns while also narrowing down the scope the clause types cover. An example of this is Lindström (2012) who discusses causative emotion constructions on the basis of both semantic and formal properties. In certain cases but not always it is probably justified to base the description on verb classes like Rätsep does.

7. KOKKUVÕTE.

Lauseliikmed eesti keeles: subjektist objektini ja edasi

Siinse doktoritöö eesmärk on määratleda ja kirjeldada eesti keele nominaalseid lauseliikmeid ja nende äärealasid. Tüpoloogilistel, kognitiivsetel ja funktsionaalsetel teooriatel põhinevas töös vaadeldakse lauseliikmeid morfosüntaksist, semantikast ja pragmaatikast lähtuvalt. Korpusmaterjali põhjal kirjeldatakse lause argumentide vormistust, käitumist, semantilisi ja infostruktuurilisi omadusi ning ka lause kõrvalliikmete (objektisarnased määraadverbiaalid) vormistust.

Doktoritöö annab panuse eesti keele subjektikategooria ja selle piirialade määratlemisse. Esmakordselt analüüsitakse siinses uuringus ka suuremat hulka objektisarnaseid argumente (kokku 10) ning kasutatakse subjektikategooria defineerimisel korpusandmeid. Töös on esitatud ühtne süsteem objektisarnaste argumentide subjektilisuse määra mõõtmiseks. Analüüs näitas, et enamik vaadeldud lauseliikmeid on oluliselt madalama subjektilisuse määraga kui transitiivlause ja markeerimata intransitiivlause subjektid. Teistest lauseliikmetest on prototüüpsele subjektile lähemal passiivi subjekt ning allatiivse kogejaga kogejakonstruktsiooni nimisõnafraasid.

Lisaks pakub töö ühtse aluse objekti, eksistentsiaallause nimisõnafraasi (e-NP) ja objektisarnaste määraadverbiaalide (osmad) käändevaheldussüsteemide võrdlemiseks. Seega keskendutakse dissertatsioonis küll erinevatele lauseliikmetele, kuid kõiki neid käsitlusi ühendavad lauseliikmete iseloomustamiseks kasutatud ühtsed parameetrid: lauseliikmete semantilised ja pragmaatilised tunnused, nende kesksus lihtlause struktuuris ja nende panus lausekonstruktsioonide struktuurilise, semantilise ja infostruktuurilise olemuse kujundamisse.

Varem ei ole eesti keelega seoses kirjeldatud tüpoloogias kasutatavaid implikatsioonilisi hierarhiaid (skaalasad). Siinne töö tegi esimese katse kontrollida nende hierarhiate rakendatavust eesti keele korpusmaterjalil. Ilmnes, et eesti keele andmed kinnitavad lauseliikmete konstruktsioonide hierarhia (*Hierarchy of Grammatical Relations Constructions*) paikapidavust, osaliselt kehtib eesti keele argumentivormistuse puhul ka referentsiaalsushierarhia (*Referential Hierarchy*), vt allpool. Eesti keele andmed kinnitavad ka William Crofti (2001) tüpoloogilise hüpoteesi *Behavioural Potential universal* (süntaktilise käitumise potentsiaal) kehtivust. Hüpoteesi järgi saavad sagedamini esinevad (semantiliselt prototüüpsemad) argumentid osaleda vähemalt sama paljudes süntaktilise käitumise konstruktsioonides (st läbivad sama palju süntaktilisi teste) kui harvemini esinevad, vähem prototüüpsed argumentid. Andmed kinnitasid, et eesti keele markeeritud lausete argumentid (e-NP jm) läbivad oluliselt vähem subjektilisuse teste kui markeerimata lause subjektid (transitiivsubjekt ja intransitiivsubjekt).

Siinne ülevaade kirjeldab viie dissertatsioonis sisalduva artikli tulemusi. Artiklite teemad on eesti keele subjektilisuse määratlemine vormistuslike ja süntaktilise käitumise omaduste põhjal (Metslang ilmumas a), vormistuslike,

semantiliste ja infostruktuuriomaduste põhjal eri argumentitüüpide (transitiiv- ja intransitiivlause subjekt, objekt ja e-NP) võrdlemine (Metslang ilmumas b), e-NP käändevaheldussüsteemi kirjeldamine (Metslang 2012) ning osmade käändevaheldussüsteemi kirjeldamine (Metslang 2007 ja 2008). Kõik need uuringud baseeruvad Tartu Ülikooli eesti kirjakeele korpusel (peamiselt Tasa-kaalus korpusel). Järgnev tabel kirjeldab kasutatud korpuseandmeid.

Tabel 1. Doktoritöös kasutatud andmestik ja meetodid.

Artikkel	Kasutatud korpuseandmed ja meetod
Metslang (ilmumas a)	Mitmemõõtmeline analüüs: kvalitatiivne analüüs 1200 lause põhjal, kvantitatiivne analüüs 2000 lause põhjal (käsitsi leitud andmed)
Metslang (ilmumas b)	Kvantitatiivne analüüs 390 lause ja 520 lauseliikme näite põhjal (käsitsi leitud andmed)
Metslang (2012)	Kvantitatiivne analüüs 279 lause põhjal (süntaktiliselt ühestatud korpusel, poolautomaatselt leitud andmed)
Metslang (2007, 2008)	Kvalitatiivne analüüs käsitsi leitud korpusandmete põhjal (täpseid arve ei ole võimalik välja tuua)

Siinne kokkuvõte koosneb kahest osast. Esimeses osas kirjeldatakse eesti keele lauseliikmete defineerimise võimalusi, keskendudes subjekti näitele. Teine osa annab võtab kokku lauseliikmete vormistust puudutavad uurimistulemused, käsitledes täpsemalt e-NP, objekti ja osmade käändevaheldust. Kokkuvõte näitab, et kuigi lauseliikmed on olnud Eesti lingvistikas pikka aega kesksete teemade hulgas, on veel mitmeid olulisi küsimusi, mis vajavad käsitlemist ning tänapäevastest teooriatest ja korpusandmetest lähtuvat ülevaatamist. Mitmeid teooriaid ja meetodeid ei ole eesti keele lauseliikmete defineerimisel seni piisavalt või üldse kasutatud, seejuures eriti just konstruktsioonigrammatikat, lauseliikmete süntaktilise käitumise uurimist, mitmemõõtmelist analüüsi ning statistilisi võrdlusi nii lauseliikmete kui ka nende vormistusvõimaluste vahel.

7.1. Eesti keele lauseliikmete määratlemine

Dissertatsioonis arutletakse lauseliikmete defineerimise võimaluste üle käitumis- ja vormistusjoonte ning referentsiaalsete ja sõnumi pakendamise (*message packaging*) omaduste alusel. (*Sõnumi pakendamine* on termin, mille võttis kasutusele Wallace Chafe (1976), märkimaks kõneleja kasutatavaid keelevahendeid, mis juhendavad kuulajat otsustamisel, kuidas sõnumit mõista ja varasema teadmisega seostada. Sõnumi pakendamine on kõneleja valik: millistele referentidele viidatakse kui definiitsetele, topikaalsetele ja diskursuses aktiivsetele.) Vaatlen korpusandmete põhjal kõiki neid omadusi transitiiv- ja intransitiivlause subjekti, e-NP ja objektiga seoses. Objekti puhul on käitumis-

omaduste analüüs vaid osaline, sest uurin ainult neid jooni, mis on vajalikud subjekti eristamiseks objektist. Väitekirjas olen käsitlenud ka passiivi subjekti ning omajakonstruktsiooni, lähet märkiva resultatiivkonstruktsiooni ja ühe kogejakonstruktsiooni subjektiktisarnaste argumentide vormistust ja käitumist. Lauseliikmete määratlemisel olen lähtunud konstruktsioonigrammatikast, mille järgi võib konstruktsiooni mõistele läheneda kaheti. Sageli kasutatud lähene-mine on lugeda konstruktsiooniks lausetasandi tarindeid (mis on defineeritud erinevatel spetsiifilisuse astmetel; näiteks Goldbergi (1995) argumentstruktuuri konstruktsioonid). Enamik eesti keeleteaduses kasutusel olevaid lauseliike on sobitatavad selle konstruktsioonimõistega. Teine lähenemine on laiem ning selle järgi võib konstruktsiooniks pidada väga erinevaid keelendeid, mis kujutavad endast vormi ja tähenduse paare: argumentstruktuuri konstruktsioonid, infiniit-konstruktsioonid, sõnajärjekonstruktsioonid, idioomid, käändekonstruktsioonid, ühildumiskonstruktsioonid jne (nt Barðdal 2006: 42; Bickel 2010b; Croft 2001).

Analüüs kinnitas, et kõige selgepiirilised kriteeriumid argumentitüüpide võrdlemiseks ja eristamiseks on käitumisomadused. Mõõtes eri argumentide esinemise võimalust kitsalt määratletud testkonstruktsioonides, on võimalik rakendada mitmemõõtmelist analüüsi ja hinnata, kas argument läbib testi või mitte (vt jaotis 7.1.1). Näide subjektilisuse testist on samasuskustutus:

(1) Ma_i lubasin Ø_i harjutada.

See konstruktsioon sisaldab kaht klausi: *ma lubasin midagi* ja *ma harjutan*. Infiniittarindi subjekt on finiiitse tarindi subjektiga samaviiteline ja siinses test-konstruktsioonis on selle kustutamine kohustuslik. Samasuskustutuskonstruktsioonis kontrollitava ehk infiniittarindi kohustuslikult kustutatud elemendi positsioonil esinemine on eesti keeles subjekti eristavaks omaduseks. Infiniit-tarindi objekti puhul ei esine kohustuslikku kustutus:

(2) ?Peeter_i lubas Ø_{*i} tööalaselt täiendada. (Mõeldud tähendust: Peeter lubas ennast tööalaselt täiendada.)

Seetõttu võib samasuskustutust pidada eesti keeles subjekti kriteeriumiks. Nii-suguste testide kasutamine võimaldab vähendada umbmäärasust lauseliikmete kirjelduses: üldjuhul saab kindlalt öelda, kas vaadeldav argument (näiteks e-NP, omajakonstruktsiooni omaja vm) saab konstruktsioonis esineda või mitte. Ka mõningad vormistusomadused on lauseliikmete defineerimisel täpsed, sest üld-juhul juhivad eri argumentitüüpide juures näiteks käände ja ühildumise kasu-tamist kindlad reeglid ja mitte üksnes statistilised tendentsid.

Siiski on lauseliikmete määratlemisel lisaks reeglitele abiks ka statistilised eelistused. Näiteks eristub transitiivlause subjekt e-NPst fraasi raskuse poolest: 66% transitiivsubjektidest esines minu kogutud korpuses pronominaalsel või nullanafoori kujul, samal ajal kui 60% e-NPdest esines täisnimisõnafraasi või raske fraasi kujul (Metslang ilmumas b). Artiklis (Metslang ilmumas, b) võrd-

lesin statistiliselt transitiivlause subjekti, intransitiivlause subjekti, objekti ja e-NP semantiliste-sisuliste, vormistuslike ja sõnumi pakendamise omaduste alusel. Võrdlesin artiklis järgmisi semantilisi omadusi: isik, arv, referentsiaal-sushierarhia omadused, referendi tähtsus diskursuses ja situatsiooni tüüp, milles argument osaleb. Sõnumi pakendamise omadustest vaatlesin fraasi raskust, sõnajärjepositsiooni, referendi aktiivsuse astet diskursuses ja definiitsust (vt jaotis 7.1.2).

7.1.1. Subjektilisuse määratlemine vormistus- ja käitumisreeglite põhjal

Artikkel (Metslang ilmumas a) esitab ettepanekud eesti keele subjekti defineerimiseks. Uurimus keskendub subjektilisuse reeglipõhiselt avalduvatele tunnustele: vormistusele ja süntaktilisele käitumisele. Vaatlen kümne lauseliikmetüübi omadusi: transitiivlause subjekt, intransitiivlause subjekt, passiivi subjekt, e-NP, allatiivse kogejaga kogejakonstruktsiooni argumendid, omajakonstruktsiooni ja lähet märkiva resultatiivkonstruktsiooni argumendid. Artiklis kasutatakse korpusandmete uurimiseks mitmemõõtmelist analüüsi.

Mitmemõõtmeline analüüs on meetod, mis tuli käesolevas töös kasutataval kujul lingvistikasse tüpoloogiliste uuringute kaudu. Meetod teeb võimalikuks tüpoloogide ja üksikkeeltega tegelevate lingvistide koostöö, sest võimaldab kajastada nii keele rikkalikku varieeruvust kui teha ka tüpoloogilisi üldistusi, piiramata ja üldistamata analüüsitavaid keelejooni ülemäära. Mitmemõõtmelises analüüsis kasutatakse sageli risttabeleid, mis kõrvutavad ühelt poolt vaadeldavaid keeli või keelejooni ning teiselt poolt võimalikult atomaarse tasandi muutujaid. Bickel (2011) kirjeldab meetodit järgmiselt.

„Iga sarnasus kahe keelestruktuuri vahel tähendab, et need on mingis mõttes identsed ja mingis mõttes erinevad. Nende identsete ja erinevate alamjoonte jaoks luuakse analüüsis omaette muutujad.” (Bickel 2011)

Lauseliikmeid on võimalik defineerida kahel tasandil. Radikaalse konstruktsioonigrammatika järgi on lauseliikmed keele- ja konstruktsioonispetsiifilised. Iga konstruktsioon defineerib lauseliikmed omamoodi. Näiteks ülalkirjeldatud samasuskustutuse konstruktsioon võimaldab „privilegeeritud”, subjektilikku kohtlemist kümnest vaatlusalusest argumenditüübist ainult transitiiv- ja intransitiivlause subjektile, passiivi subjektile ja kogejakonstruktsiooni stiimulile. Teine test – possessiivpronoomeni lähtevormi positsioonil esinemine – kohtleb aga subjektilikult hoopis suuremat hulka argumenditüüpe. Seega määratlevad need kaks testi lauseliikmeid erinevalt. Niisuguse lähenemise järgi on keeles suur hulk erinevaid lauseliikmeid: isegi markeerimata lause subjekt (st transitiiv- ja intransitiivlause subjekt; vt markeeritud ja markeerimata lause määratlusi: Erelt ja Metslang 2006) ei kujuta endast ühtset kategooriat, vaid kogumit konstruktsioonispetsiifilisi lauseliikmeid. Siinne töö näitab, et pärast

konstruktsioonispetsiifiliste lauseliikmete väljaselgitamist on siiski võimalik nende põhjal üldistada suuremad „globaalsed” kategooriad. Näiteks artiklis (Metslang ilmumas a) teen eri lauseliikmete põhjal testide kogutulemusi arvestades üldistuse ja käsitlen nii saadud üldisi lauseliikmeid. Näiteks on globaalne e-NP lauseliige, mis

- saab esineda tõstekonstruktsioonides kontrollitava positsioonis;
- omab piiratud ulatuses prototüüpse subjektiga samu käände- ja ühildumistunnuseid;
- esineb relatiivkonstruktsioonis ja mitmetes muudes samasuskustutuskonstruktsioonides piiratud kontrollitava positsioonis;
- on impersonaliseeritav.

Erinevad globaalsed lauseliikmetüübid on subjektilikud erineval määral. Sarnast lähenemist on võimalik kasutada ka objekti ja teiste lauseliikmete defineerimisel.

Artikkel (Metslang ilmumas a) vaatleb lähemalt viit vormistusomadust: kolme reeglit (kääne jaatavas lauses, kääne eitavas lauses ja verbiga ühildumine) ning kaht statistilist omadust (sõnajärjepositsioon ja nullanafoor). Kuigi käesolev jaotis keskendub eelkõige reeglitele, käsitlen nimetatud statistilisi omadusi samuti siin, sest ka nende uurimine oli reeglite uurimisega tihedalt seostatud. Valides eesti keele subjekti määratlemiseks sobivaid käitumisomadusi, koostas in kõigepealt loendi omadustest, mida on eesti ja soome lingvistikas ja tüpoloogilises kirjanduses varem kirjeldatud (Erelt jt 1993; Hakulinen jt 2004; Hiietam 2003; Barðdal 2006; Bickel 2004; Kroeger 2004; Van Valin 2005), ning valisin neist välja sobivad. Analüüsis kasutatud täpsemad omadused on järgmised:

- possessiiv- ja refleksiivpronoomenile lähtevormiks olemine;
- tõste subjektiks või objektiks;
- subjekti samasuskustutus (infiniittarindi kohustuslikult kustutatud liikmena esinemine *da*-infinitiivi, supiini ja gerundiiviga konstruktsioonide korral);
- objekti samasuskustutus (infiniittarindi kohustuslikult kustutatud liikmena esinemine *da*-infinitiivi ja supiiniga konstruktsioonide korral);
- relativatsioon (nii subjekti kui ka objekti samasuskustutus, *v*-, *tav*-, *nud*- ja *tud*-partitsiipidega);
- impersonaliseerimise võimalus.

Testiks sobib iga keelekonstruktsioon ja vormistusomadus, mis toimib lauseliikmeid eristavalt. Eesti keele puhul tasuks edasistes uurimustes sinne testide loetelu üle vaadata ja võimaluse korral teste lisada.

Andsin peamiselt korpusandmetele tuginedes igale vaadeldud argumendi-tüübile igas testis punkte vastavalt sellele, kas argumenditüüp läbib testi produktiivselt (2 punkti), osaliselt/marginaalselt (1 punkt) või üldse mitte

(0 punkti). Kui olin kõigi argumentitüüpide punktid 16 testi kohta kokku liitnud, järjestasin argumentid järgnevalt.

Tabel 2. Subjektomaduste esinemine eri lauseliikmete seas (suurim võimalik summa 32 punkti; Metslang (ilmumas a) põhjal).⁴⁰

Argument	Konstruksioonitüüp	Kogusumma
Transitiivsubjekt, intransitiivsubjekt	markeerimata lause	30
Passiivi subjekt	passiiv	20
Stiimul	kogejakonstruktsioon	20
Siht	lähet märkiv resultatiivkonstruktsioon	11
e-NP	eksistentsiaalkonstruktsioon	11
Omatav	omajakonstruktsioon	7
Kogaja	allatiivse kogejaga kogejakonstruktsioon	6
Omaja	omajakonstruktsioon	5
Lähe	resultatiivkonstruktsioon	5

Vähemprototüüpsedel subjektisarnastel argumentidel on läbi erinevate testide tunduvalt madalamad tulemused kui markerimata lause subjektidel. Tabelis 2 esitatud andmeid vaadates tuleb arvestada, et kõik testid ei ole üksteisest sõltumatud, osa neist baseerub samadel või lähedastel omadustel. Tüpoloogilistes uuringutes on leitud, et argumentide käitumine võib keeltes sõltuda topikaalsusest, semantikast, vormistusest ja rollist lauses (näiteks teatud teste saavad läbida ainult topikud, toimijad (*actors*), nominatiivsed fraasid või (prototüüpsed) subjektid; Bickel 2004: 90–97; Kroeger 2004: 104; Van Valin ja LaPolla 1997; Siewierska ja Bakker 2012). Andmetest selgus, et see, kas eesti keele argumentid läbivad üksikuid teste, sõltub peamiselt kahest faktorist: topikaalsusest ja käändest. Topikaalsusest sõltuvad testid on sõnajärjepositsioon, nullanafoor, refleksiiv- ja possessiivpronoomeni lähtevormiks olemine. Ülejäänud testid sõltuvad argumenti nominatiivis vormistamise võimalusest (vaid nominatiivis või nominatiivi ja partitiivi lubavad argumentid läbivad testi). Et vähendada testide omavahelisest sõltuvusest tekkivat moonutust, võtsin tabeli read kokku testi läbimist mõjutavate faktorite järgi. Uues tabelis (tabel 3) saavad kaks subjektisarnaste argumentide rühma – ühelt poolt tüüpiliselt topikaalsed kogaja, omaja ja lähe ning teiselt poolt stiimul, omatav, siht ja e-NP – subjektilisuse kontinuumil võrdsed tulemused (1–2 punkti). Kuna topikaalsusest ja käändest sõltuvad testirühmad on väga erineva suurusega, saab tasakaalustatud üldpildi tabelleid 2 ja 3 koos vaadates.

⁴⁰ Vt lühendeid dissertatsiooni lühenditeloetus.

Tabel 3. Subjektioomaduste rühmad (mõlema rühma tulemuste ümardatud keskmised; Metslang (ilmumas a)).

Millised argumendid läbivad testi?	Argumendid	A/S	d-S	St	Gr	e-NP	Pe	Exp	Pr	So
	Tüüpiliselt topikaalne?	jah	jah	ei (jah)	ei	ei	ei	jah	jah	jah
Topikaalsed		2	1	1	0	0	0	2	1	1
Nominatiivi lubavad argumendid		2	1	1	1	1	1	0	0	0
Punkte kokku		4	2	2	1	1	1	2	1	1

Vastavalt tabeli 3 tulemustele võib öelda, et eesti keele subjektid ja subjekti-sarnased argumendid jagunevad kahte põhirühma: aktiivse markeerimata lause subjektid ja markeeritud lause argumendid. (Passiivi subjekt ja kogejakonstruktsiooni argumendid jäävad nende kahe rühma vahele.) Seetõttu võib järeldada, et eesti keeles on subjektilikkuse kõrgema tasandi faktoriks lauseliik (markeeritud ja markeerimata lause). Erinevalt kirjanduses kirjeldatud üksiktestide tulemusi mõjutavatest faktoritest on lauseliik liitfaktor, hõlmates nii topikaalsust kui ka argumentide vormistumusmustreid. Pean lauseliiki argumentide üldise subjektilisuse määra juures oluliseks faktoriks, sest kahe põhirühma argumentide kogusummade vahel on suur erinevus. Lisaks läbivad markeerimata lause subjektid enamikku teste produktiivselt, samal ajal kui markeeritud lause argumendid osalevad testkonstruktsioonides piiratult. Ka mõne üksiktesti piires on alust oletada, et markeeritud või markeerimata lausesse kuulumine on argumentide käitumist eristavaks tunnuseks.

Artikkel hindab ka lauseliikmete konstruktsioonide hierarhia (*Hierarchy of Grammatical Relations Constructions*; Kazenin 1994; Croft 2001; Bickel 2010b) paikapidavust eesti keeles. Hierarhia esitab hüpoteesi, et skaalal vasakul paiknevad konstruktsioonid võimaldavad argumendiliikide suuremat mitmekesisust kui paremal pool olevad konstruktsioonid. Mida kaugemal vasakul pool on konstruktsioon, seda tõenäolisem on, et ta „kohtleb” endaga liituvaid argumente ergatiivsuse põhimõttel (st kohtleb intransitiivlause subjekti nagu objekti).

(3) Lauseliikmete konstruktsioonide hierarhia (Bickel 2010b)

KÄÄNE > ÜHILDUMINE > RELATIVATSIOON / FOOKUS / OPERAATORITE
 LAHKPAIGUTUS (*OPERATOR FLOATING*) > RINDLIKME KUSTUTUS >
 SAMAVIITELISUSKONSTRUKTSIOONID / SAMAVIITELISUSE MARKEERIMINE⁴¹

⁴¹ Samaviitelisuskonstruktsioonide all peetakse silmas samasuskustuskonstruktsioone (Bickel 2010b).

Uurimuses kasutatud testide osas järgivad eesti keele subjektid ja subjekti-sarnased argumendid seda hierarhiat hästi. Selle põhjal, kui mitmekesisist argumenditüüpide valikut konstruktsioon võimaldab, võiks eesti keele jaoks konstrueerida järgmise hierarhia:

- (4) Eesti keele lauseliikmete konstruktsioonide hierarhia (Metslang (ilmumas a))
KÄÄNE / ÜHILDUMINE > RELATIVATSIOON > MUUD
SAMASUSKUSTUTUSKONSTRUKTSIOONID

7.1.2. Eesti keele lauseliikmete defineerimine statistiliste omaduste põhjal

Artiklis (Metslang ilmumas b) esitan transitiivlause agenttiivseima argumendi (A, subjekt), intransitiivlause argumendi (S, subjekt), transitiivlause teise argumendi (O, objekt) ja e-NP vormistuse kohta statistilist infot. Analüüsisin 390 korpuselauset, mis sisaldavad 520 vaatlusalust argumenti (igauht 130). 66% nominatiivsetest argumentidest olid markeerimata lause subjektid, 100% genitiivsetest argumentidest olid objektid, 58% partitiivis argumentidest olid objektid ja 42% e-NPd. Ühildumisstatistikas vastandusid mõlemad markeerimata lause subjektid ootuspäraselt objektile: verb ühildub subjektiga, kuid mitte objektiga. e-NP positsioon selles võrdluses on ebaselgem. Kuigi predikaatverb ühildus 88% juhtudel e-NPga, olid vaid 14% selged ühildumisjuhud. Ülejäänud korpuselausetes oli verb kas oma markeerimata vormis (ainsuse kolmas isik) või eitava vormis või neutraliseeris kõneviis või verbivorm *on* arvu/isiku eristuse.

Tüpoloogilises kirjanduses tekitab seni vaidlusi referentsiaalsushierarhia hüpotees (vt Givón 2001; Bickel 2008; Bickel jt (ilmumas)), vt (5). Selle järgi korreleerub argumendi koht hierarhias positiivselt argumendi ligipääsuga lauseliikmepositsioonidele ning referentsiaalselt kõrgemale (skaala vasak pool) kuuluvad argumendid on tõenäolisemalt topikaalsed.

- (5) Referentsiaalsushierarhiad (Bickel 2010b: 410)
1. JA 2. ISIK > SUGULUSSIDEMEID VÄLJENDAVALD SÕNAD JA NIMED > INIMENE >
ELUS > ELUTA > AINESÕNA
SPETSIIFILINE > MITTESPETSIIFILINE, REFERENTSIAALNE > GENEREERILINE /
MITTEREFERENTSIAALNE
TUNTUD / TOPIKAALNE / TEEMA / DEFINIITNE > UUS / FOOKUS / REEMA / INDEFINIITNE
AINSUS > MITMUS

Kui keeles esineb S-argumendi vormivaheldus, siis vormistatakse kõrgema järgu S-argumendid (skaala vasak pool) suurema tõenäosusega A-sarnaselt ning madalama järgu S-argumendid O-sarnaselt.

Artiklis (Metslang (ilmumas b)) võrdlen argumente A, S, O ja e-NP uuritud korpusmaterjalile kohandatud hierhia alusel. Hierarhia kohandamine oli vajalik selleks, et eristada mitmesuguseid madalama järgu referente, mis olid uuritud

ilukirjandustekstides sagedased. Püstitasin hüpoteesi, et eesti keele korpusandmeid kirjeldab järgmine skaala.

- (6) Uurimuses kasutatud referentsiaalsushierarhia (Metslang (ilmumas b)):
1. VÕI 2. ISIK > INIMENE > KONKREETNE > ABSTRAKTNE > SÜNDMUS >
MITTEREFERENTSIAALNE

Püüdsin välja selgitada, kas nende omaduste distributsioon on seotud argumentide tüüpide ja käändekasutustega.

Kõik need referentsiaalsed omadused jaotuvad korpuses tendentside, mitte reeglite alusel. Üldiselt võib iga argumentitüüp sobituda iga referentsiaalse omadusega. Korpusandmete põhjal paikneb skaala murdepunkt inimeste ja elutute objektide vahel (kuna näitelauses peaaegu puudusid muud elusolendid peale inimese, jätsin selle kategooria vaatluse alt välja). Korpuse lauseid analüüsid ilmnes, et S-argumenti semantika on heterogeensem kui A oma ning O on vaadeldud argumentidest heterogeensem kategooria. Referendid, mis paiknesid skaalal vasakul, esinevad A ja S positsioonil, paremal paiknevad referendid esinevad O ja e-NP positsioonil. A ja S joonduvad kokku: 1. ja 2. isikule ja inimestele viitamine toimub A ja S positsioonil ning väga harva O ja e-NP positsioonidel. Ka O ja e-NP on märkimisväärselt sarnased: abstraktsed ja konkreetsed eluta referendid esinevad peamiselt nendel positsioonidel (78% abstrakteid ja 79% konkreetseid referente). Mittereferentsiaalse sisu väljendamine piirdub enamasti O positsiooniga: 79% mittereferentsiaalsetest elementidest esinevad O-na. Nendeks on peamiselt infiniitkonstruktsioonid jm klausid, näiteks otsene ja kaudne kõne.

Vaatlesin artiklis (Metslang (ilmumas b)) nimetatud nelja argumentitüüpi viie semantilise ja nelja sõnumi pakendamise omaduse lõikes. Kõrvutasin neid tulemusi ka ülalkirjeldatud vormistusomadustega. Järgnevas võtan võrdlustulemused kokku, lähtudes iga argumentitüübi kõige sagedasemast parameetriaadest.

Kümme kriteeriumi üheteistkümnest osutusid argumentitüüpide eristamiseks sobivaks. Üheteistkümnes kriteerium, arv, käitus kõigi argumentitüüpide puhul samamoodi: ainsus domineerib kõikide puhul. Mitmus eristab pigem referentsiaalseid omadusi kui argumentitüüpe – see on sagedasim (kuigi mitte domineeriv) eluta konkreetsete referentidega.

Järgnevas vaatlen, kuhu paigutub markeerimata lause subjekti ja objekti vahel e-NP, hinnates, kas e-NP on lähemal subjektile või objektile. Kümme kriteeriumi lõikes on korpuses kõige olulisem vahe samuti markeerimata lausete subjektide ning O ja e-NP vahel (nimetan viimaseid üldistavalt partitiivi lubavateks argumentideks). Topikaalsusega seotud sõnumi pakendamise jooned korreleeruvad tugevalt semantiliste omadustega (eriti referentsiaalsushierariiaga ning referendi tähtsusega diskursuses). Nende omaduste lõikes kuulub S samuti kokku A-ga ja O e-NP-ga. Ka vormistus (kääne ja ühildumine) korre-

leerub nende sisujoontega. Kaks parameetrit, mis aga neid kaht muidu suhteliselt ühtset argumentirühma ei ühendanud, olid situatsiooni tüüp, milles argumenti referent osaleb, ja isik (võimalikud väärtused: kõneaktis osaleja, kolmas isik või määratlemata).

O ja e-NP statistiliselt suurimad allrühmad jagavad kuut omadust kümnest (isik, referentsiaalsushierarhia, referendi tähtsus diskursuses, fraasi raskus, sõnajärg ja referendi aktiivsuse aste diskursuses). O ja e-NP puhul on ühised nii semantilised kui ka sõnumi pakendamise omadused. Kattuvusi on ka käände ja ühildumise osas. Need tulemused illustreerivad seda, kui suurt rolli mängib topikaalsus eesti keele argumentide realiseerimisel (e-NP ja O sarnasuse puhul on siin tõenäoliselt tegemist ka NP ja predikaatverbi vahelise tugeva semantilise seosega; vt Vilks 1989: 163, 175, 181).

e-NP-l ja subjektil (kas ainult S või nii S kui ka A) on ühised 3–4 kriteeriumi kümnest. Nende suurimatel allrühmadel on samad väärtused käändekasutuseelise ja ühildumise osas (samas ei ole verbi ühildumine e-NPga eriti tugev alus e-NP ja subjekti sarnasuse väitmiseks, vt eespool). Nii e-NP kui ka intransitiivsubjekt viitavad eelistatult kolmandale isikule ja esinevad enamasti *seisundi* situatsioonitüübis. Samas kui vaadelda intransitiivsubjekti kõiki allrühmi, on situatsioonitüüpide jaotus pigem sarnane transitiivsubjektiga. Pean teatud kontekstides siiski võimalikuks lugeda e-NPd mittekanooniliseks subjektiks, sest tüpoloogiliselt ongi mittekanoonilised subjektid kanoonilistest üsna erinevad (vt Onishi 2001). e-NP mittekanooniliseks S-argumentiks lugemist toetab ka selle vormistuse vastamine referentsiaalsushierarhia hüpoteesile (vt Metslang (ilmumas b)).

Joondumust on eesti keele puhul seni vähe analüüsitud (vt Erelt 2008: 71–76). Artikkel Metslang (ilmumas b) uuris Eesti keeles avalduvaid ergatiivseid vormistusvahendeid. Eesti keele intransitiivlause subjekti ja e-NP vormistusopositsioon, mis väljendub erinevas sõnajärjepositsioonis, e-NP objekti-sarnases käändekasutuses ja sagedases selge verbiühildumise puudumises, esindab tüpoloogias käsitletud verbist sõltumatut joondumusvaheldust (*fluid intransitivity*). See eesti keeles küllaltki sage nähtus (e-NP kasutus on võimalik üle 500 verbi puhul; Varik 1974) on üks akusatiivse ja ergatiivse joondumuse (*alignment*) hübriidilming, kus intransitiivse predikaatverbi (nt *olema*, *lebama*) subjekti võib vormistada nii transitiivse subjekti moodi (sel juhul on tegu kanoonilise markeerimata lause intransitiivsubjektiga) kui ka objekti-sarnaselt (siis on tegu e-NP-ga ehk mittekanoonilise intransitiivsubjektiga).

Mitmed teoreetikud defineerivad süntaktilisi kategooriaid elemendi esinemise järgi kindlal positsioonil kindlas konstruktsioonis (vt Croft 2001; Dryer 1997; Rauh 2010). Seetõttu on lausetasandi konstruktsioonid ja lauseliigid lauseliikmete määramisel olulised. Korpuse lausete analüüsil ilmnes, et eesti keele puhul kirjeldatud lauseliikide süsteem (Erelt ja Metslang 2006) on suures osas abiks argumentide ja nende põhjal lauseliikmete määramisel, kuid ka, et mõned lauseliigid vajavad täpsustamist (näiteks kogejalause). Mõningaid lause-

tasandi konstruktsioone oleks otstarbekas määratleda verbiklassi abil (nt lähem märkiv resultatiivlause, allatiivse kogejaga kogejalause).

On leitud, et lauseliikmete defineerimisel tuleb võrdselt arvestada nende kõiki omadusi ning pole õige teatud omadusterühmi välistada (Croft 2001; Witzlack-Makarevich 2011). Artiklitest (Metslang ilmumas, a, b) ilmneb, et mõned omadused on siiski tugevama kaaluga: reeglid on rohkem ja vähem ranged ning statistilised omadused on rohkem ja vähem varieeruvad. Näiteks verbielne sõnajärjepositsioon on nõrgem subjektilisuse tunnus kui verbiga ühildumine isikus ja arvus. Nominatiivi kasutus on küll subjekti omadus, kuid samal ajal iseloomustab see piiratud juhtudel ka objekti. Lauseliikmete defineerimisel tuleks arvestada kõiki omadusi ja nende rühmi, kuid tulevastes uuringutes tuleks püüda neid üksteise suhtes kaaluda (sobivaimad meetmed selleks on statistilised; Aarts 2007; Gries 2003).

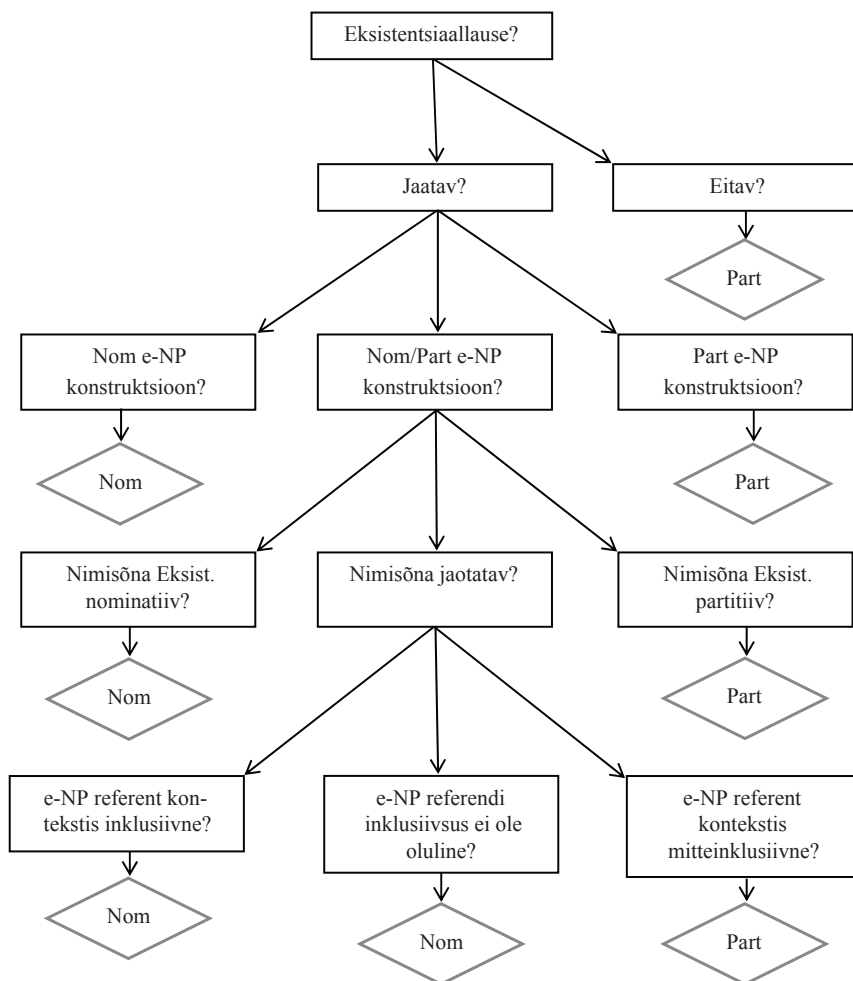
7.2. Lauseliikmete vormistamine

Suur osa dissertatsioonist käsitleb eesti keele lauseliikmete käändevaheldussüsteeme. Artikkel (Metslang 2012) püüab süstematiseerida e-NP käändevaheldussüsteemi. e-NP käändevaheldust on varem põhjalikult kirjeldanud Peep Nemvalts (1996; 2000). Kuigi Nemvaltsi kirjeldus on ülevaatlik ja süsteemne, oli vaja seda korpuse lausete analüüsi tarbeks täpsustada. Siinses töös on Nemvaltsi käändemõjurite süsteemi kohati täiendatud ja lihtsustatud ning käändefaktorid on omavahel domineerivuse alusel järjestatud (koostatud on neljatasandiline jaotus).

Artikkel näitab, et peaaegu kõigi eesti keele e-NP vormistustasandite taga on üks oluline semantiline tunnus: kvantitatiivne definiitsus (inkluusiivsus; vt Lyons 1999: 2–13). Eri tasanditel seostub referendi inkluusiivsus kindlate verbide, nimisõnade või konstruktsioonidega või ka kontekstist tuleneva NP referendi piiritletusega (võrdle objekti käändevaheldussüsteemiga allpool). Sellist ühe semantilise tunnuse seostumist eri grammatikatasanditega on esile toodud ka teiste keelte puhul (Onishi 2001: 23–40).

Analüüs näitas, et e-NP käännet mõjutavateks põhifaktoriteks on nimisõna leksikaalsed omadused, kontekstist tulenev e-NP referendi inkluusiivsus, leksikaalsed predikaadid ja kindlad konstruktsioonid (Rätsepa (1978) ja Nemvaltsi (2000) verbikesksed lausemallid), muud lausetasandi ja pragmaatilised faktorid (eitus ja implikatuurid). Seega mängivad e-NP käände määramisel rolli kõik Dixoni (1994) ja Witzlack-Makarevichi (2011) argumentide vormistusfaktorite tasandid: referentsiaalsed faktorid, predikaatverbi mõju ning lausetasandi faktorid. Selle klassifikatsiooni põhjal esitan artiklis neljatasandilise e-NP reeglite süsteemi. Tähtsuse (st reegli domineerimise, mitte esinemissageduse) järjekorras hõlmab see: (i) eitus, (ii) leksikaalseid predikaate ja lausekonstruktsioone, (iii) nimisõna leksikaalseid omadusi ning (iv) inkluusiivsust ja pragmaatilisi omadusi. Eri faktorid kattuvad tegelikus kasutuses. Siinne süsteem keskendub

vaid käänet määravatele faktoritele, mis on alati tugevamad kui teised samas analüüsitava lauses parasjagu võistelda võivad tegurid. Järgnev otsustepuu võtab artiklis esitatud e-NP käändevaheldussüsteemi kokku.



Joonis 1. e-NP käändevahelduse neljatasandiline faktorite süsteem (Metslang 2012).

Toon järgnevalt näited esimese kolme tasandi kohta ning käsitlen neljandat tasandit põhjalikumalt allpool.

- (7) Kassi vaates ei olnud **mingit märguannet**. (e-NP on eitavas lauses partitiivis)
- (8) **Meistrit** jätkus igale poole. (partitiivi nõudev lausetasandi konstruktsioon; Rätsep 1978: 154, mall 114)

- (9) Kõogist vaatas vastu **segadus**. (vaid nominatiivset e-NP-d lubav verb)
- (10) Sugenes pisut piinlik **vaikus**. (jaatavas eksistentsiaallauses vaid nominatiivis esinev nimisõna)
- (11) Endalgi Ø **ruumi** vaevalt ringi pööramiseks (nimisõna, mis esineb jaatavas eksistentsiaallauses vaid partitiivis)

Joonisel 1 esitatud skeem sisaldab mitmeid Nemvaltsi kirjeldatud faktoreid. Nemvaltsi faktorite seast on aga eemaldatud näiteks aspekt. Kuigi e-NP käändevaheldus saab kõrvalnähtusena ka aspekti väljendada, ei osutu see eri mõjurite kattumise korral tugevaimaks faktoriks ning on taandata e-NP referendi situatiivsele inklusiiivsusele. Nemvaltsi semantiliste tunnusjoonte süsteemi asemele on pakutud leksikaalsed rühmad „eksistentsiaalsed nominatiivid“ (nimisõnad, mis esinevad jaatavas eksistentsiaallauses vaid nominatiivis) ning „eksistentsiaalsed partitiivid“ (nimisõnad, mis esinevad jaatavas eksistentsiaallauses vaid partitiivis). Kuigi Nemvaltsi tunnusjoonte süsteem enamasti kehtib, ei ole semantika roll nimisõnade puhul alati läbipaistev; lisaks lihtsustavad siinses töös soovitud nimisõnarühmad korpuselausete analüüsi.

Üks probleemsemaid valdkondi e-NP-de käände määramisel on situatiivne, kontekstist tulenev inklusiivus. Jaotatavate referentide puhul (ainesõnad ja mitmuslikud sõnad) märgib partitiiv kas määramata hulka või osahulka ning nominatiiv kas koguhulka või hulga piiritletuse irrelevantsust kontekstis (kõneleja identifitseerib e-NP referendi, kuid ei piiritle seda). Käändevormi täpne tähendus sõltub kontekstuaalse piiri olemasolust. Näiteks:

- (12) Sellel kasel on juba **lehed**. (mugandatud allikast Vilkuna 1992: 61) (markeeritud kvantiteet: inklusiiivne hulk; kontekstuaalne piir määrab võimaliku lehtede hulga selles kontekstis, milleks on kogu puu lehestik)
- (13) Sellel kasel on juba **lehti**. (markeeritud kvantiteet: mitteinklusiiivne; kevadel ei ole puule veel kõiki lehti jõudnud tulla, on ainult osa lehestikust)
- (14) Maas oli **rohi**. (markeerimata kvantiteet: kontekstuaalset piiri ei ole ja referendi kvantiteet on kontekstis ebaoluline; nominatiiv on markeerimata vorm)
- (15) Maas oli **rohtu**. (markeeritud kvantiteet: mitteinklusiiivne, kuid kontekstuaalset piiri ei ole)

Artikkel Metslang (ilmumas b) tegeleb e-NP ja objekti paljus kattuvate käändevaheldussüsteemide ühitamisega. Situatiivse, kontekstis ilmneva NP piiritletuse kirjeldamiseks on seejuures kasutatud kaht eri tasandi hierarhiat, mis puudutavad jaotatavaid nimisõnu:

- (16) Kvantitatiivse markeerituse hierarhia
MARKEERIMATA KVANTITEET > MARKEERITUD KVANTITEET

- (17) Inklusiivsuse hierarhia
 INKLUSIIVNE > MITTEINKLUSIIVNE
 (Metslang (ilmumas b))

Mõlema hierarhia puhul märgib skaala vasak pool totaalkäände kasutust (e-NP puhul nominatiiv, objekti puhul genitiiv või nominatiiv). Nii markeerimata kui markeeritud kvantiteet esineb nii e-NP kui ka objekti puhul.

- (18) Linnaosavalitsustes moodustatakse lasteringid. (mugandatud allikast Erelt jt 1993: 51)

Totaalkäände kasutamine markeerimata kvantiteedi märkimiseks on objekti puhul siiski väga harv. Inklusiivsuse hierarhia puudutab markeeritud kvantiteediga nimisõnafraase.

Artikkel Metslang (ilmumas, b) esitab väikesemamahulise korpusuuringu põhjal objekti ja e-NP käändevormistusfaktorite sageduse võrdluse. Mõlema lauseliikme puhul on esindatud Dixoni ja Witzlack-Makarevichi faktorite süsteemi kolm taset: referentsiaalsed omadused, verbi omadused ja lausetasandi omadused. Tabel 4 esitab vaid otsustava tähtsusega faktorid, mis domineerisid faktorite kattumise korral.

Tabel 4. Objekti ja e-NP käändefaktorite sagedused korpuses (n=260; Metslang ilmumas b).

Tase	Nr	Otsustav käänat mõjutav faktor	O		e-NP	
			%	olulisus	%	olulisus
Referentsiaalsed omadused	1.	kvantitatiivse markeerituse hierarhia (markeerimata kvantiteet)	0	puudub	16	oluline
	2.	inklusiivsuse hierarhia	54	olulisim	14	oluline
	3.	nimisõna leksikaalne inklusiivsus	0	puudub	47	olulisim
	4.	isikulised asesõnad (1. ja 2. isik)	4	väheoluline	0	puudub
Verbi omadused	5.	leksikaalsed predikaadid	32	olulisim	2	väheoluline
Lausetasandi omadused	6.	aspekt	54	olulisim	0	puudub
	7.	eitus	10	oluline	20	olulisim
	8.	konstruktsioonid (Rätsep 1978)	0	väheoluline	1	väheoluline

Kuigi O ja e-NP käänat määravad põhiosas samad faktorid, on nende osatähtsus erinev. e-NP puhul on tähtsaimaks teguriks e-NP fraasi tuuma leksikaalsed omadused. O sagedasim käändevaliku põhjustaja on situatiivselt määratud

inklusiivus koosmõjus aspektiga (mängivad rolli aspektiverbide puhul, vt Erelt jt 1993; Vaiss 2004; kuigi need kaks faktorit on tabelis 4 eraldi välja toodud, on neid hinnatud koos, kuna neid eraldi ei esine).

Artiklid (Metslang 2007 ja 2008) arutlevad osmade käändevaliku mõjurite üle. Käsitletakse kolme osmade põhiliiki:

- kestusosmad;
- kvantiteediosmad;
- korduvusosmad (absoluutsed kardinaalsed, suhtelised kardinaalsed ja ordinaalsed korduvusosmad).

Kestus- ja kvantiteediosma ning absoluutse ja suhtelise kardinaalse korduvusosma kääne võib olla kas totaalne (nominatiiv või genitiiv) või partitiivne. Sarnaselt objektiga põhjustab osma referendi inkusiivus (mis on määratud kontekstis mitte leksikaalselt) enamiku osmade totaalkäände kasutust. Kui osma referent on inkusiiivne, kasutatakse totaalkäänet, ja kui mitteinkusiiivne, partitiivi. Ordinaalse korduvusosma kääne on üldjuhul partitiiv. Üks oluline objekti partitiivikasutuse faktor on imperfektiivses situatsioonis osalemine. Enamiku osma liikide puhul seda käändefaktoriks pidada ei saa, vt tabel 5.

Tabel 5. Objekti ja osmade semantiliste käändefaktorite võrdlus (Metslang 2008 põhjal). Kas osma käändevormistustingimused on sarnased objekti omadele?

Määruse liik	Objekti käändefaktor: imperfektiivses situatsioonis osalemine (partitiiv)	Objekti käändefaktor: mitteinklu- siivne referent (partitiiv)	Osma käändefaktor: järjestust väljendav täiend (partitiiv)	Objekti käändefaktor: perfektiivne situatsioon ja inkusiiivne referent (totaalkääne)
Kestusosma	–	sarnane	–	sarnane
Kvantiteediosma	sarnane	sarnane	–	sarnane
Absoluutne kardinaalne korduvusosma	–	sarnane	–	sarnane
Relatiivne kardinaalne korduvusosma	erinev	sarnane	–	–
Ordinaalne korduvusosma	–	sarnane	erinev	–

Objekti kääne võib ka sõltuda verbi grammatilisest vormist. Osa verbivorme nõuavad partitiivset objekti (eitus, supiin ja selle inessiivi- ja elatiivivorm ning gerundiiv), osa aga nominatiivset totaalobjekti (imperatiiv, impersonaal ja *da*-infinitiiv nii põhiverbina kui ka täiendina) (Erelt jt 1993). Metslang (2008) analüüsis ka nende verbivormide mõju osmade käändele, vt tulemusi tabelis 6.

Tabel 6. Objekti ja osmade vormiliste käändefaktorite võrdlus (Metslang (2008) põhjal). Kas osma käändevormistustingimused on sarnased objekti omadele?

Määruse liik	Partitiivobjekti nõudvad verbivormid	Nominatiivset totaalobjekti nõudvad verbivormid
Kestusosma	erinev	sarnane
Kvantiteediosma	osaliselt sarnane	sarnane
Absoluutne kardinaalne korduvusosma	osaliselt sarnane	erinev
Relatiivne kardinaalne korduvusosma	erinev	erinev
Ordinaalne korduvusosma	erinev	erinev

Metslang (2007) arutleb osmade unikaalse käändevaheldusfenomeni üle, mis on huvitav paralleelne areng totaalkäände-partitiivkäände vaheldusele. Nimisõna-fraasi abil väljendatud kestusosmade juures esineb nimelt nominatiivi-genitiivi vaheldus (Erelt 2000: 96), nt:

(18) Operatsioon toimub kohaliku tuimestusega ja patsient on **kogu aja** ärkvel.

(19) ... on **kogu aeg** ärkvel.

Kuigi tähenduserinevus ei ole suur, on nominatiiv tõlgendatav neutraalse käändena ja genitiiviga kaasnevad mitmed semantiliselt markeeritud tõlgendused. Genitiiv rõhutab kestva pidevat tegevust (nominatiiv võimaldab samas iteratiivset tõlgendust). Ka verbi ajavormi tõlgendamine võib sõltuda osma käändest. Perfektil on kaks tähenduskomponenti: oleviku- ja minevikukomponent. Mõlemat komponenti on kasutuses võimalik esile tõsta. Genitiivne osma rõhutab situatsiooni minevikuaspekti ja nominatiivse osma puhul on eelistatum oleviku esiletõst.

Seni on e-NP, objekti ja osma käändevaheldust enamasti uuritud eraldi, näiteks Erelt jt (1993; objekt, e-NP ja osma); Kont (1963; objekt); Nemvalts (1996; 2000; e-NP); Metslang (2007; 2008 ja 2012; osma ja e-NP), Rannut (1958; osma). Eesti keeles on neid faktoreid võrrelnud näiteks Tamm (2004) ja Metslang (ilmumas b). Artiklis Metslang (ilmumas b) näitan, et nende kolme lauseliikme käändevaheldus on kirjeldatav argumentide vormistustegurite süsteemi kolme tasandi järgi. Objekti käändevaheldussüsteem on neist kolmest süsteemist tõenäoliselt vanim ja prototüüpseim, st kõige rikkalikum ja variatiivsem. Ka e-NP käändevaheldussüsteem sisaldab paljusid eristusi ja on oma kompleksuselt sarnane objekti omaga. Osmade käändevaheldussüsteem on piiratum, sisaldades vaid kaht faktorite tüüpi (referendi situatiivne inklusiivsus ning verbivormid osma käände mõjutajana). Osmat sisaldava situatsiooni aspekt on enamasti pigem seotud osma üldise esinemisvõimalusega lauses.

ABBREVIATIONS USED IN THE INTRODUCTION⁴²

A	the most actor-like argument of a transitive verb
ABS	absolute
AD	adessive
ALL	allative
AUTO	autonomous activity affix
CAUS	causative affix
CL	clitic
COM	comitative
COND	conditional
CONV	converb
d-S	passive subject
DU	dual
e-NP	the existential construction's sole argument
EL	elative
ERG	ergative
Exp	experiencer
G (gen)	genitive
Gr	goal of the resultative construction
HM	author's example
IL	illative
IMP	imperative
IMPS	impersonal
IN	'inclusive – non-inclusive quantity' opposition
INE	inessive
INF	infinitive (incl. supine, <i>da</i> -infinitive, <i>vat</i> -infinitive)
N (NOM)	nominative
NP	noun phrase
NEG	negation particle
NMLZ	nominalization affix
NONFUT	non-future
O	the 'not most actor-like argument of a transitive verb' (usually object)
OLDA	object-like degree adverbial
P (PART, part)	partitive
PASS	passive
Pe	possessee of the possessive construction
PL	plural

⁴² The alternative abbreviations from the citations of other sources have been added in the brackets.

PLI	the opposition 'presence or lack of inclusiveness specification of the referent'
PP	preposition phrase
Pr	possessor
PST	past
PTC (PTCP, PRTC)	participle
S	the sole argument of the intransitive verb (intransitive subject)
SAP	speech act participant
So	source of the resultative construction
St	stimulus of the experiential construction
SUP	superlative
TERM	terminative
TR (TRANSL)	translative

CORPORA USED IN THE DISSERTATION

Corpus of Written Estonian (University of Tartu, www.cl.ut.ee). Subcorpora:

- Balanced Corpus of Estonian
- Parsed Corpus

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